IBM CICS Performance Analyzer for z/OS

IBM

User's Guide

Version 2 Release 1

First Edition (June 2007)

This edition applies to Version 2 Release 1 of IBM CICS Performance Analyzer for z/OS (product number 5697-N40) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC34-6307-03. The technical changes for this edition are summarized under "Summary of changes" on page xxxi and are indicated by a vertical bar to the left of the change.

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About this book

This book contains information for IBM® CICS® Performance Analyzer for z/OS® Version 2 Release 1, and is intended to do the following:
- Provide an overview of the CICS Performance Analyzer for z/OS
- Serve as a learning aid for both new and infrequent users
- Provide reference information to experienced users

CICS Performance Analyzer for z/OS is a reporting tool for analyzing and tuning the performance of CICS systems. In this book, CICS Performance Analyzer for z/OS is referred to by its short name of CICS Performance Analyzer or CICS PA, and CICS Transaction Server is referred to as CICS.

This book describes the purpose, concepts, and operation of CICS Performance Analyzer and how to get started. It describes the reports and extracts and how to generate them using the CICS PA dialog or commands. There is a Guided Tour to help you become familiar with the dialog. Problem determination procedures and error messages are also included.

The following releases of CICS are supported:

530 CICS Transaction Server for OS/390® Version 1 Release 3
610 CICS Transaction Server for z/OS Version 2 Release 1
620 CICS Transaction Server for z/OS Version 2 Release 2
630 CICS Transaction Server for z/OS Version 2 Release 3
640 CICS Transaction Server for z/OS Version 3 Release 1
650 CICS Transaction Server for z/OS Version 3 Release 2

Who should read this book

This book is intended for managers, database administrators, system programmers, and application programmers responsible for monitoring and improving the performance of CICS systems. It assumes that you understand basic CICS concepts and your installation's CICS systems. If you are new to MVS™, OS/390, z/OS, DFSORT™, or CICS, you may want to review the information in "Bibliography" on page 753 before using this book and the CICS Performance Analyzer for z/OS.

Before you read this book, you need to have a good understanding of how CICS works. This assumes familiarity with many of the books in the CICS Transaction Server for z/OS library, together with adequate practical experience of installing and maintaining a CICS system. You will also need to have a good understanding of the CICS Monitoring Facility (CMF), which is described in the *CICS Performance Guide.*

Conventions used in this book

This book uses the following conventions.

Highlighting conventions

This book uses the following highlighting conventions:
- **Boldface type** indicates dialog commands or user interface controls such as names of fields or menu choices.
- `Monospace type` indicates examples of text and batch commands that you enter exactly as shown.

- *Italic type* indicates variables that you should replace with a value. It is also used to indicate book titles and to emphasize significant words.

Command syntax notational conventions

The notational conventions used in this book to describe the syntax of CICS PA batch commands are as follows:

Use of symbols

The levels of nesting in the syntax are separated by parentheses. When you enter the commands, enter the following symbols exactly as they appear in the list:

,	comma
-	hyphen
=	equals
.	period
:	colon
( )	parentheses

The following symbols are used to distinguish operands and command syntax. Do *not* enter them when you enter commands:

brackets [ ]   mean that you *may* select one of the operands, but they can be omitted. If the brackets are nested, the outermost operand (enclosed by one pair of brackets) is the highest level of nesting. That operand must be selected in order to select the next lower-level operand nested within it, and so forth.

underscore _____

denotes a default option. If you don't specify an operand, this is the operand the system selects.

vertical bar | separates operand alternatives within brackets.

Use of case

Uppercase letters represent information that you must enter as shown. Some operands can be abbreviated. The letters that must be used are in uppercase. The subsequent letters in lowercase may be omitted. For example, you can enter the operand `CROSSsystem` either as a full word or abbreviated. The uppercase letters `CROSS` are the shortest truncation that CICS PA accepts.

Lowercase letters represent variable information that you supply, such as start time, owner, delimiter, DDname, and so on. For example, `OUTPUT(ddname)` shows that the OUTPUT operand requires a DDname parameter.

$ (the dollar symbol)

In the character sets given in this book, the dollar symbol ($) is used as a national currency symbol and is assumed to be assigned the EBCDIC code point X'5B'. In some countries a different currency symbol, for example the pound symbol (£), or the yen symbol (¥), is assigned the same EBCDIC code point. In these countries, the appropriate currency symbol should be used instead of the dollar symbol.

Terminology used in this book

In this book, CICS Performance Analyzer for z/OS is referred to as "CICS Performance Analyzer" or its abbreviation "CICS PA".

CICS PA can produce various types of output, including reports (text or numeric data formatted for human readers), graphs (also for human readers), and extracts (data intended for use by other software applications). These outputs are often referred to collectively as "reports".

Much of the terminology in this book is based on CICS terminology. Refer to *CICS Transaction Server for OS/390: Glossary,* GC33-1705.

The following Web site consolidates in one convenient location several of the main glossaries created for IBM products, including the *Glossary of Computing Terms*:

http://www.ibm.com/ibm/terminology/

Service updates and support information

To find service updates and support information, including software FixPaks, PTFs, Frequently Asked Question (FAQs), technical notes, troubleshooting information, and downloads, refer to the following Web page:

www.ibm.com/cics/support

Where to find information

The CICS Library Web page provides current product documentation and IBM Redbooks™ that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following Web page:

www.ibm.com/cics/library

Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in CICS Performance Analyzer enable users to:

- Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
- Customize display attributes such as color, contrast, and font size.
- Operate specific or equivalent features using only the keyboard. Refer to the *z/OS ISPF User's Guide* for information about accessing ISPF interfaces. This guide describes how to use ISPF, including the use of keyboard shortcuts or function keys (PF keys), includes the default settings for the PF keys, and explains how to modify their functions.

You can perform most tasks required to set up and run CICS Performance Analyzer using a 3270 emulator logged on to TSO.

IBM Personal Communications (Version 5.0.1 for Windows® 95, Windows 98, Windows NT® and Windows 2000; Version 4.3 for OS/2®) provides 3270 emulation with accessibility features for people with disabilities. You can use this product to provide the accessibility features you need.

People with limited vision who use screen reader software might find the following require particular attention:
- The Performance Graph Reports

– These reports are composed of character output. Screen readers can report all of these to you but they are unlikely to convey the overall impression of the graph.

– All the data used to produce Performance Graph Reports is available from CMF performance class data. You might find it more helpful to work with, for example, the Performance Summary reports or the Performance Export Extract.

- Pop-up windows

– CICS Performance Analyzer uses the ISPF function that produces pop-up windows for some tasks. The pop-up and its frame are just text that overlays the underlying information on the displayed panel. The frame of such a pop-up is not usually recognized as such by Screen reader software, so you may need to gain some familiarity with reading such panels before the information becomes meaningful. ISPF pop-up windows can be displayed on a full screen by using the **RESIZE** command.

A version of this publication which is more suitable for use with screen reader software can be made available on request. Use one of the contact methods described in "Sending your comments to IBM" on page 791 to submit such requests.

How to send your comments

Please refer to the topic "Sending your comments to IBM" on page 791.

Summary of changes

Significant changes in this edition are summarized here, and marked by a vertical bar in the left margin.

June 2007: version 2.1

CICS Performance Analyzer for z/OS Version 2 Release 1 includes the following features and changes:
- Support for CICS Transaction Server V3.2
- Support for OMEGAMON XE for CICS
- Report and Extract enhancements
- Dialog enhancements

CICS PA has dropped support for SMF records created by these releases of CICS TS:

CICS/ESA 4.1

CICS TS Version 1.1 and 1.2

Support for CICS Transaction Server V3.2

All CICS PA reports, HDB, and the ISPF dialog support CICS Transaction Server for z/OS Version 3 Release 2 which is known by CICS PA as CICS Version 650. This includes support for:

- New CICS Monitoring Facility (CMF) performance class fields:
  - In group DFHCICS: ONETWKID, OAPPLID, OSTART, OTRANNUM, OTRAN, OUSERID, OUSERCOR, OTCPSVCE, OPORTNUM, OCLIPADR, OCLIPORT, OTRANFLG, OFCTYNME
  - In group DFHDOCH: DHDELCT
  - In group DFHCHNL: PGCSTHWM
  - In group DFHDATA: WMQREQCT, WMQGETWT
  - In group DFHSOCK: ISALLOCT, ISIOWTT, ISIPCNNM, CLIPPORT

  For a short description of these CMF fields, their equivalent CICS PA field names, and how you can use them, see Table 16 on page 719 and Table 18 on page 740.

- Higher-precision clock fields: all Type S clock fields are now 12 bytes.

- New CICS statistics records and fields. The CICS PA ISPF dialog uses the new statistics records to create the following new statistics reports:
  - IPCONN Resources
  - LIBRARY Resources (with a hyperlink from the LIBRARY name to a LIBRARY Data Set Names report)
  - WebSphere MQ Connections
  - DOCTEMPLATE Resources

- Compressed SMF records. CICS Transaction Server V3.2 can write SMF records in compressed format. CICS PA can read these compressed records from SMF files, and also optionally write them, when creating a Cross-System Work extract or a Record Selection extract. (New **COMPRESS|NOCOMPRESS** options on the CICSPA RECSEL and CROSSsystem commands.)

Support for OMEGAMON XE for CICS

OMEGAMON XE for CICS fields from SMF type 110 records in report forms

CICS monitoring SMF type 110 records may include a user data field (field

ID: OMEGCICS.1) that contains performance class data from IBM Tivoli OMEGAMON XE for CICS on z/OS (OMEGAMON XE for CICS) Version 4.1.0, or later. Although the CICS monitoring control table (MCT) defines this data as a single field, it consists of many separate fields, including fields for various third-party systems monitored by OMEGAMON XE for CICS such as Adabas, CA-Datacom, CA-IDMS, and Supra. You can now include these fields in CICS PA report forms. These OMEGAMON XE for CICS fields are demonstrated in new sample report forms. For details, see "Sample Report Forms" on page 292.

Note: Support for these fields was introduced in CICS PA 1.4 by APAR PK30209.

New reports from OMEGAMON XE for CICS SMF type 112 records
OMEGAMON XE for CICS produces SMF type 112 records that contain transaction data for the following types of database management system (DBMS):
Adabas
CA-Datacom
CA-IDMS
Supra

For each type of DBMS, you can request:

• A list report, showing one transaction per line. The report can optionally end with a section showing totals for selected transaction data (appropriate to the type of DBMS).

• A summary report, showing transaction data summarized by either transaction or database.

You can now also optionally include OMEGAMON XE for CICS SMF type 112 records in a Record Selection Extract, by specifying the new OMEGAMON option on the CICSPA RECSEL command.

Report and Extract enhancements

Distribution reporting: summarize values by range
The new Range (RNG) function in summary report forms allows you to report the number or percentage of transactions that have a performance field whose value falls within a specified range, or match a single value. You can use this function to produce reports for service-level agreements and problem alerts. For example, you can report the percentage of transactions that have a response time between one and two seconds; or the number of transactions that have a CPU time greater than three seconds. In the batch commands, this function is represented by the RNGCOUNT and RNGPERCENT operands.

Performance Totals report
[To be added.]

System logger report enhancements: filter records using selection criteria, summarize by reporting interval
Previously, you could only filter records from the system logger report by logstream and structure name. Now you can also filter records using selection criteria, allowing you to include or exclude records based on time interval or individual field values.

You can also summarize logger records in multiples of the SMF reporting interval. For example, if the SMF reporting interval was 5 minutes at the

time that the logger records were written, then you can generate a System
Logger Summary report that summarizes the logger records at any multiple
of 5 minutes: 5, 10, 15 etc.

**Extract system logger SMF type 88 records to comma-separated value (CSV)
file** You can now extract system logger SMF type 88, subtype 1 records to a
CSV file. (This CSV file does not include subtype 11 structure alter records.)

**Cross-System Work and Workload Activity reports: sort in reverse
chronological order**

As an alternative to the sort order of descending stop time (this remains the
default sort order), you can now sort these reports by ascending start time.
To select the sort order, specify the new option
TASKORDER(**STOP**|START) on the CICSPA CROSSsystem or
WORKLOAD command.

New field TOTCPU for total task time (USRCPUT + RLSCPUT)

A new total task time field appears on the following reports: Performance
List, Performance List Extended, and Performance Summary. You can also
specify this field in report forms, selection criteria, HDB templates, HDB
reporting, and HDB extracts.

**Transaction Rate and Transaction Response Time graphs: granularity of one
second**

Previously, each row in these graphs represented a time interval measured
in a number of whole minutes. You can now specify the time interval in the
format hh:mm:ss to produce more detailed graphs, to the granularity of one
second.

FLOAT-format time values exported in units of seconds, not milliseconds

In previous releases of CICS PA, if you selected FLOAT format when
exporting Clock fields, the time components of the Clock fields were
exported in units of milliseconds. For consistency with other CICS PA
reports and extracts, these values are now exported in units of seconds.

Dictionary records: match on MVSID+APPLID+RELEASE; improved messages

Previous releases of CICS PA used only the CICS applid and CICS release
of an SMF record as keys to match the appropriate dictionary record. CICS
PA now also uses the MVS system ID to match the appropriate dictionary
record.

Support for DB2 V9.1

CICS PA V2.1 supports SMF records created by the following releases of
DB2: V6.1, V7.1, V8.1, and V9.1.

Support for WebSphere MQ V6.0

CICS PA V2.1 supports SMF records created by the following releases of
WebSphere MQ: V5.3.0, V5.3.1, and V6.0.

Dialog enhancements

Mass update CICS system definitions

Rather than having to edit CICS system definitions one at a time, you can
now change several, or even all, personal or shared CICS system
definitions with a single action. To select the CICS system definitions to
change, you display the list panel of personal or shared system definitions,
and then enter line action U next to one or more system definitions:

This line action displays a panel that enables you to change the following
attributes of the selected CICS system definitions: VRM (version, release,
modification number), MVS image name, system definition description,

Summary of changes

CICS message control table (MCT) suffix, and the data set names of the MCT library, the CICS load library, and dictionary record. Before applying the change, you can generate a report of the CICS system definitions that would be affected by the change.

This is especially useful when you upgrade CICS systems to a new release of CICS Transaction Server: for example, you can select all of the associated system definitions in CICS PA and update their dictionary records.

New sample report forms
New sample report forms for OMEGAMON XE for CICS and CICS RMI Analysis. For details, see "Sample Report Forms" on page 292.

Statistics reports enhancements
You can now filter SMF intervals on the statistics menu by CICS APPLID, MVS image, and time period, before displaying the list panel of available SMF intervals. Rather than selecting only a single SMF file for reporting, you can now select multiple SMF files, and then select from a combined list of all statistics intervals in those files.

Previous changes

This section outlines what was new and changed in previous editions.

April 2006 (fourth edition): updates to version 1.4

Contains updates for new features introduced by the following APARs:
- PK22931
- PK10771
- PK14621
- PK03641

New field in System Logger reports: number of times staging data set asynchronous buffer full (PK22931)
This new field SMF88EAF, added to System Logger SMF type 88 records in z/OS 1.7, now appears in the System Logger reports under the column heading "Staging DS Async Buf Full".

Take up personal SMF file definitions to shared definitions (PK10771)
The take-up from personal system definitions to shared system definitions, which used to only take up systems and groups, now also takes up file definitions. These appear in the shared system definitions as cyclic SMF files with no origin (described in the related item below). For more details, see "Take-up from Personal System Definitions" on page 123.

Define cyclic SMF files with no origin (PK10771)
In shared system definitions, you can now define a cyclic SMF file with no origin (an origin value of NONE). Similar to an SMF file in your personal system definitions, you define a cyclic SMF file with no origin when you want to explicitly select a particular SMF data set for reporting, regardless of the reporting period. For details, see "Shared SMF File definitions" on page 107.

Use symbolic date variables in the data set names of cyclic SMF files (PK10771)
You can use symbolic variables to represent date values in the data set names of cyclic SMF files. For instance, if the data set names of your monthly SMF files end with `.D`*yyyymm*, where *yyyy* is the 4-digit year and *mm* is the 2-digit month (for example, `CICSPROD.SMF.MONTHLY.D200604`), then

you can define this in CICS PA as a cyclic SMF file with an interval of a month and a data set name of `CICSPROD.SMF.MONTHLY.D&YYYY&MM`. For details, see "Reusing an SMF File that has been successfully loaded" on page 648.

Daily SMF data sets now expire only when uncataloged (PK10771)

Daily SMF data sets now expire only when no longer cataloged, not based on the date of their SMF records. For details, see "Shared SMF File definitions" on page 107.

Define cyclic SMF files with an origin relative to the file creation date (PK10771)

You can specify that the origin of a cyclic SMF file is relative to the file creation date: CDATE, CDATE+*nnn*, or CDATE-*nnn* (where *nnn* is a number of days). For details, see "View 2. Cyclic SMF Files" on page 110.

Exclude cyclic SMF files from selection (PK10771)

The new line action X on the cyclic SMF file definition panel excludes a file from being used in report requests. For details, see "View 2. Cyclic SMF Files" on page 110.

Show cyclic SMF data sets that are available for reporting (PK10771)

The new line action S on the cyclic SMF file definition panel shows a list of all data sets that belong to the specified GDG Base or that match the specified data set name for an SMF file, along with the "from" and "to" date of the SMF records in each data set. The new primary command SHOW displays this information for all non-excluded SMF file definitions for the system. This lets you see exactly which data sets are available for reporting for this system, and the range of dates that they cover. For details, see "View 2. Cyclic SMF Files" on page 110.

Load an HDB and export it to DB2 in a single job (PK14621)

Prior to this APAR, there was no easy way to automate exporting to DB2 after loading a historical database (HDB). You had to submit a job to load an HDB, identify which HDB container data sets the job created, and then submit another job to export those containers to DB2.

With this APAR, the HDB load process now writes the data set names of the created HDB containers to a PDS member. The JCL for exporting an HDB to DB2 can refer to this PDS member, rather than explicitly specifying the data set names of HDB containers. This enables you to load an HDB in one job step, and then export it to DB2 in a later step in the same job.

This feature appears as a new Load DB2 Table option on the Report Set HDB Load and the HDB Load dialog panels. Selecting this option generates JCL that loads an HDB and then exports the created HDB containers to DB2. For details of this JCL, see "HDB Export to DB2" on page 655.

To support this new option, Statistics HDB definitions have a new Load DB2 column, enabling you to select which statistics records you want to load into DB2. You can only load into DB2 records that have been collected: to export a record to DB2, you need to select both the existing Collect column and the new Load DB2 column.

DB2 settings available from CICS PA Profile Options Menu (PK14621)

Prior to this APAR, to edit DB2 settings (such as subsystem ID and database name) you had to go to the Export HDBs panel, select an HDB, and then select the container data sets to export: this displayed a panel that included the DB2 settings. Now you can select CICS PA Profile from the primary option menu, and then select DB2 settings.

Load an HDB from an SMF data set that has already been successfully loaded (PK14621)

The new line action F on the HDB Load Audit Trail panel changes the status of an SMF data set from OK to Failed. This enables you to load an HDB from an SMF data set that has already been used to load that HDB. For details, see "Reusing an SMF File that has been successfully loaded" on page 648.

PRECISION option added to HDB Extract panel (PK03641)

Allows you to specify the precision of extracted numerical data. For details, see "HDB Extract to CSV" on page 639.

March 2005 (third edition): version 1.4

CICS Performance Analyzer for z/OS Version 1 Release 4 includes the following new features and changes:
- Support for CICS Transaction Server V3R1
- New CICS Statistics facility
- New Shared System Definitions
- Historical Database (HDB) enhancements
- Report and Extract enhancements
- Dialog enhancements

Support for CICS Transaction Server V3R1

All CICS PA reports, HDB and the ISPF dialog support CICS Transaction Server for z/OS Version 3 Release 1 which is known by CICS PA as CICS Version 640. This includes support for:

- New CMF group DFHCHNL with fields: PGBRWCCT, PGCRECCT, PGGETCCT, PGGETCDL, PGMOVCCT, PGPUTCCT, PGPUTCDL, PGTOTCCT

- New fields in the DFHPROG, DFHTASK and DFHWEBB groups:
  - DFHPROG fields: PCDLCRDL, PCDLCSDL, PCDPLCCT, PCLNKCCT, PCRTNCCT, PCRTNCDL, PCXCLCCT
  - DFHTASK fields: DSCHMDLY, ICSTACCT, ICSTACDL, ICSTRCCT, ICSTRCDL, L9CPU, MAXSTDLY, MAXXTDLY, X8CPU, X9CPU
  - DFHWEBB fields: WBBRWOCT, WBCHRIN1, WBCHROU1, WBIWBSCT, WBPARSCT, WBRCVIN1, WBREDOCT, WBREPRDL, WBREPWDL, WBSNDOU1, WBWRTOCT

- New TCB modes: SP, L9, X8, and X9

- CICS Statistics enhancements

- Two obsolete fields: CHMODECT, MAXHTDLY

New CICS Statistics facility

The new CICS Statistics facility provides comprehensive reporting and analysis of CICS statistics and server statistics:

Interactive reporting

CICS PA provides comprehensive reporting of CICS Statistics, either directly from an SMF data set or from a CICS PA Historical Database. The interactive report facility provides QMF-like features including Tabular reporting, Sorting by field (column), Forms to design personalized reports, Hyperlinks to jump directly to related reports, and a Print facility (to data set or SYSOUT).

Historical Database (HDB)

CICS Statistics data can be collected in a Historical Database, with facilities

to Export to a DB2® table or Extract to a CSV file for off-host analysis. Historical statistics can also be reported via the interactive reporting facility.

New Shared System Definitions

The new Shared System Definitions facility provides the ability to share CICS system and related subsystem definitions. The dialog is similar to personal System Definitions (and Groups). However, shared System Definitions are saved in the HDB Register, typically maintained by a central administrator, and available to all users of the HDB Register.

Take-up (auto-discovery) of shared System Definitions can be from personal System Definitions or an SMF file. At report run time, specify whether to use personal or shared definitions.

Automated SMF File Selection provides time-based file selection for reporting, removing the requirement to explicitly specify data set names.

The Shared System Definitions facility provides two new SMF File types:

Cyclic GDG data set definitions for multiple generations of periodic SMF data, for example, daily, weekly, or monthly SMF files.

Daily Daily SMF files, built from the SMF dump process, and containing SMF data for a particular period of time during the current day. Expired daily SMF files are removed from the Register via the HDB Housekeeping process.

CICS PA report submission uses these definitions to generate the required SMF file data set DD statements for the requested reporting time interval.

Historical Database (HDB) enhancements

The Historical Database (HDB) is enhanced to provide the following new functions:

CICS Statistics
A new type of HDB called the Statistics HDB allows the collection of CICS Statistics and Server Statistics. Statistics HDBs are reported using the interactive Statistics Reporting facility.

Extract to CSV
HDB List, Summary and Statistics data can be extracted to a CSV file, a format suitable for off-host reporting via a spreadsheet or PC reporting tool.

Audit HDB Load requests are now audited in the HDB Register to prevent duplicate container data sets being generated. Audit information can be viewed from the HDB dialog. Expired audit records are removed from the Register via the HDB Housekeeping process.

Report and Extract enhancements

The following reports and extracts have been enhanced:

Summary report
The Summary report enhancements include:
- The maximum number of sort order keys is increased from 3 to 8
- Each key field can have its own sort sequence, ASCEND or DESCEND
- ORIGIN is supported as a key field
- Ordering by one numeric field, such as response time, is allowed
- The BY clause is no longer required
- Long fields are now supported
- Count fields can be converted to K or M

- Storage fields can be converted to KB or MB
- Time stamp fields support both date and time formats
- Subtotal and Grand total lines can be reported to desired level
- TASKTCNT field introduced as alternative Task (transaction) count
- Numeric field precision increased from 4 decimal places to 6 to report microseconds

List and List Extended reports

The List and List Extended report enhancements include:
- Count fields can be converted to K or M
- Storage fields can be converted to KB or MB
- Numeric field precision increased from 4 decimal places to 6 to report microseconds

Totals report

The Totals report supports the new CICS Transaction Server V3.1 TCB modes SP, L9, X8, and X9

Wait Analysis report

The Wait Analysis report supports the new CICS Transaction Server V3.1 wait clocks: DSCHMDLY, MAXSTDLY, MAXXTDLY

Cross-System Work report

The Cross-System Work report now provides unit-of-work Selection Criteria (SELUOW)

Cross-System Work extract

The Cross-System Work extract enhancements include:
- Unit-of-work Selection Criteria (SELUOW)
- Extract record contains the new CICS Transaction Server V3.1 fields

Transaction Resource Usage report

The temporary storage usage reports now support TSQUEUE names with unprintable characters, reporting the name in hexadecimal when required.

Miscellaneous enhancements

Other enhancements include:
- Selection Criteria now supports TRANTYPE
- The source of error messages can be traced back to the offending report by output ddname

Dialog enhancements

The main changes to the dialog are:

Report Sets

Report Set enhancements include:
- Report Form type validation for List, ListX, and Summary reports
- HDB Load requests can now be run from Report Sets

Report Forms

Report Form enhancements include:
- Wide reports allow the page width for Form based reports (List, ListX, Summary, Cross–System, HDB) to extend beyond 132 characters
- New Peak Percentile statistical function provides a distribution function for Summary reports
- More Samples to report the new CICS Transaction Server V3.1 monitor fields
- New Report Forms can be modelled from an HDB Template
- New Report Form "Select field categories" is changed to make CICS group selection easier

Record Selection extract

The Record Selection Extract is enhanced to support all CMF record types (not just Performance), including DB2, MQ, and System Logger.

FIND command

The FIND command is now available for selected member lists, including Report Sets, Report Forms, Sample Report Forms, Object Lists, and HDB.

Second edition: updates to version 1.3

CICS Performance Analyzer for z/OS Version 1 Release 3 (second edition) includes the following new features and changes enabled by PTFs for APARs PQ77980, PQ79013, PQ79058, PQ81177, PQ83231.

- **Support for CICS Transaction Server V2R3**

  All CICS PA reports and the ISPF dialog support CICS Transaction Server for z/OS Version 2 Release 3 which is known by CICS PA as CICS Version 630. This includes support for:

  – 7 new CMF fields in the new CICS group DFHEJBS. These fields are: CBSRVRNM, EJBACTIV, EJBPASIV, EJBCREAT, EJBREMOV, EJBMETHD, EJBTOTAL.

  – 6 new CMF fields in the CICS group DFHTASK. These fields are: DSTCBHWM, KY9DISPT, KY9CPUT, J9CPUT, DSTCBMWT, DSMMSCWT.

- **Historical Database (HDB) changes**

  HDB collection is corrected to save elapsed time data in units of seconds.

  The List HDB Load now supports the following CMF fields: TASKFLAG, ERRFLAG, TRANFLAG, ORIGIN, TERMINFO, UOWID, UOWSEQ.

- **Report and Extract enhancements**

  The following reports and extracts have been enhanced:

  Performance Summary report

  NOTOTALS option is now available to exclude Totals report lines.

  Performance Summary export

  The Summary export data set with time interval data now includes the ISO date preceding the time, as two separate fields. For example:

  ```
  2005-01-16;10:15:00
  ```

  Performance Totals report

  The report includes the new field J9 CPU Time (J9CPUT).

  Cross-System Work report and extract

  Two-level Selection Criteria is now supported through batch commands (not yet available in the dialog). The SELECT and SELUOW commands provide selection at the UOW (multi-task) level as well as the Task level:

  – SELECT remains unchanged, providing first-level pre-sort filtering of records. This is suitable for time range checking and selecting all possible transaction IDs of interest.

  – SELUOW provides second-level post-sort filtering of units-of-work. SELUOW is applied at the UOW level, not the task (or record) level. Only one task in the UOW has to match the SELUOW criteria for the entire UOW to be reported.

  Cross-System Work extract

  The extract record format includes the 13 new CMF fields.

  Transaction Resource Usage List report

  The Function Shipping request types are now reported, prefixed by FS:

DB2 report

The DB2 Short and Long Summary reports now include total statistics for each DB2 SSID and CICS APPLID.

WebSphere® MQ report

GET requests are now broken down by type to identify whether the queue is being depleted.

System Logger report

Sort by time option is now available to sort the List report by time. This ensures records will be printed in Logstream or Structure name sequence within each Interval expiry period.

- **Dialog enhancements**

  The main changes to the dialog are:

  1. CICS Version 630 (CICS Transaction Server V2R3) is now supported.
  2. You can optionally upgrade existing Report Forms to Version 630.
  3. Report Forms have been enhanced for Version 630:
     - There is a new Report Form field category that allows the new fields for DFHEJBS to be included.
     - The Report Form field category DFHTASK includes 6 new fields.
     - There are 9 new Sample Report Forms that report the new fields.
     - The LIST, LISTX and SUMMARY Report Forms allow the 13 new fields to be specified.
     - The LISTX and SUMMARY Report Forms allow the new field CBSRVRNM to be specified as a sort field.
  4. Report Sets have been enhanced:
     - Performance Selection Criteria have been enhanced to allow selection of the 13 new fields for CICS Transaction Server V2R3.
     - The Performance Summary Report has a new option: Exclude Totals.
     - The System Logger Report has a new option for the List report: Sort by Time.

First edition: version 1.3

CICS Performance Analyzer for z/OS Version 2 Release 1 (first edition) includes the following new features and changes:

- **New Historical Database facility**

  The new Historical Database (HDB) provides a flexible and easy-to-use facility for managing historical performance data for your CICS systems:

  - Short term history data detailing individual transaction performance can be used for problem analysis
  - Long term history data summarized over time can be used for trend analysis and capacity planning
  - Flexible definition of data repositories based on Report Forms technology
  - Comprehensive reporting
  - Optionally load history data into DB2 for further analysis via your favorite SQL Query tool
  - Managed from the CICS PA ISPF dialog

- **New WebSphere MQ report**

The new WebSphere MQ report processes MQ Accounting (SMF 116) records to provide comprehensive performance analysis and resource usage for your CICS transactions that use WebSphere MQ.

The WebSphere MQ List report provides a trace of MQ Accounting records, reporting the comprehensive performance contained in subtype 0, 1 and 2 records. The WebSphere MQ Summary report provides two summarized views of your MQ transactions:

– Summary by CICS Transaction ID, showing the WebSphere MQ system and queue resources use

– Summary by WebSphere MQ Queue name, showing the Transactions they service and resources used

- **New Temporary Storage Resource Usage report**

  The Transaction Resource Usage Report has been enhanced to include comprehensive reporting for the new Temporary Storage Transaction resource class data for CICS Transaction Server Versions 1.3 and 2.2 or later.

  Transaction resource class data for Temporary Storage (and previously File) is a new class of CMF monitoring data that provides additional transaction-level information about individual resources accessed by a transaction. Three reports can be requested:

  1. Transaction Resource Usage List. This report provides a list of all Transaction resource class records in the sequence that they appear in the SMF file. It gives Transaction information, detailing their individual Temporary Storage (and File) usage.

  2. Transaction Temporary Storage Usage Summary. This report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction and Temporary Storage statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage queue used

  3. Temporary Storage Usage Summary. This report summarizes Temporary Storage activity. For each Temporary Storage queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

- **New Wait Analysis report**

  The new Wait Analysis report summarizes Transaction activity by Wait time. For each Transaction ID, the resources that cause this transaction to be suspended are shown in the order of most to least expensive.

  This report highlights the system resource bottlenecks that may be causing bad response time. More detailed analysis can then be performed, focusing on the problem resources identified.

- **Report enhancements**

  Minor changes to the following reports have been made:

  1. The List, ListX and Summary reports have been extended to support all CMF performance fields in the FIELDS, BY and PROCESS operands

  2. The ListX and Summary default sort sequence has been changed from TRAN, TERM to TRAN

  3. The Summary report presentation has been improved

  4. The Workload Activity Summary has been enhanced to include "Totals"

- **Dialog enhancements**

  The main changes to the dialog are:

  1. Report Set menu changed to a Tree Structure. All reports are now displayed and selected from a single panel. Report categories can be expanded or collapsed as required.

2. Report Set JCL generation has been enhanced. Report Sets no longer need to be saved before submit proceeds. Report categories and individual reports can be selected for submission independently of the Report Set.

3. Selection Criteria has been enhanced. Selection Criteria can now be specified in Report Forms. Relational operators and decimal point are now supported. For example, to select response time greater than half a second, specify `SELECT(PERF(INC(RESP(>0.5))))` instead of `SELECT(PERF(INC(RESP(500,999999999))))`.

4. Report Forms have been enhanced. Report Forms can now specify Selection Criteria. Report Forms have 29 new samples.

- **Support for DB2 Version 8**

  CICS PA now supports DB2 Version 8.

Changes in CICS PA V1R2

The most significant new features and changes for CICS Performance Analyzer for OS/390 Version 1 Release 2 are:

- **CICS Transaction Server for z/OS Version 2 support**

  All CICS PA reports and the ISPF dialog support CICS Transaction Server for z/OS Version 2. This includes support for:
  – 27 new CMF fields introduced in CICS Transaction Server 2.1
  – 9 new CMF fields introduced in CICS Transaction Server 2.2

- **New Transaction Resource Usage report**

  The new Transaction Resource Usage report provides comprehensive reporting of Transaction Resource Class data for CICS Transaction Server Versions 1.3 and 2.2 or later. This is a new class of CMF monitoring data that provides additional transaction-level information about individual resources accessed by a transaction (in this release, File resources only). Three reports can be requested:

  1. Transaction Resource Usage List. This report provides a list of all Transaction Resource Class records in the sequence that they appear in the SMF file. It gives Transaction information, detailing their individual File usage.

  2. Transaction File Usage Summary. This report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction and File Control statistics followed by a breakdown of File usage for each File used.

  3. File Usage Summary. This report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

- **New DB2 report**

  The new DB2 report processes CICS CMF records and DB2 Accounting (SMF 101) records to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report.

  The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction.

  The reports include the following DB2 information:
  – DB2 Thread Identification, for easy cross-reference to DB2 PM
  – Class 1 Thread elapsed and CPU times
  – Class 2 In-DB2 elapsed and CPU times
  – Class 3 Suspend times
  – Buffer Manager statistics
  – Locking statistics
  – SQL DML statistics

The DB2 report matches CMF performance records with DB2 accounting records by network unit-of-work ID. Your CICS-DB2 resources must be defined with ACCOUNTREC(TASK) or ACCOUNTREC(UOW) for matching to occur.

- **New System Logger report**

  The new System Logger report processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems.

  The System Logger List report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval.

  The System Logger Summary report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time.

  These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems.

- **New Workload Activity report**

  The new Workload Activity report provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF™) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals.

  The Workload Activity List report is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed.

  The Workload Activity Summary report summarizes response time by WLM service and report classes.

- **New Record Selection extract**

  The new Record Selection extract is a facility that allows you to create a small extract file containing only the CMF performance (and optionally DB2 Accounting) records of interest to you. The extract file can then be used as input to CICS PA, allowing for more efficient reporting.

- **Report enhancements**

  CICS PA supports the new CICS monitoring capability of Application Naming in CICS Transaction Server Versions 1.3 and 2.2 or later. This capability allows you to specify special CICS event monitoring points (EMPs) in your application programs to include an alternative Transaction ID and Program name in your CMF performance records.

  The new fields (APPLTRAN and APPLPROG) can be included in all CICS PA reports and extracts that use Report Forms. They can also be specified in Performance Selection Criteria.

  Application Naming can be useful for monitoring the performance of individual application programs selected from a menu and run under one menu Transaction ID. Or conversely, for amalgamating the information for one application program that runs under many different Transaction IDs.

  Other enhancements include:

  - Cross-System Work report has been enhanced to allow the specification of a Report Form to customize the fields in the report.

Previous changes

- Time zone settings in the CMF records are used to convert CMF time stamp fields to local time, enabling easier and more consistent interpretation of the reports and extracts.
- The reliance on Dictionary records being available to interpret CMF performance records has been removed.
- Totals report has been enhanced to include statistics for the new CICS TS 2.1 and 2.2 CMF fields, including new RO TCB statistics.
- Summary report Time Interval limit increased from 60 minutes to 24 hours.
- Improved Cross-System and Transaction Group report format consistency.

- **Extract enhancements**

  The following CICS PA Extracts have been enhanced to provide the following new features:
  - The Export Extract includes the new CICS TS 2.1 and 2.2 CMF fields.
  - The Export Extract allows the (optional) specification of a Report Form (List or Summary) to customize the fields in the Extract. The inclusion of Report Forms and a summary capability allows you to either:
    1. List all CICS transactions and their performance data with the same flexibility as the List Report, or
    2. Summarize CICS transaction performance with the same flexibility as the Summary Report.
  - All Extracts (Cross-System, Export, and Record Selection) now produce a Recap report that totals the records written to the extract data set.

- **Dialog enhancements**

  The CICS PA ISPF Dialog has been significantly enhanced to provide the following new features:

  Primary Option Menu option 1 "APPLIDs/SMF Input" has been replaced with "System Definitions". The enhancements include:
  - CICS PA can now process data from the following new sources:
    1. DB2 accounting SMF 101 records
    2. System Logger SMF 88 records

    To support this, new system types of DB2 subsystem and System Logger are introduced.
  - CICS, DB2 and System Logger system names can contain masking characters.
  - MVS ID has been replaced by an 8 character Image name.
  - A new maintenance facility for SMF File and Group definitions is provided.
  - A new Take-up facility allows you to populate your System Definitions from an SMF File. CICS PA analyzes the SMF File to locate CICS, DB2 and Logger systems and automatically populates your dialog System Definitions.
  - The limit of Systems belonging to a maximum of 3 Groups has been removed.
  - For users migrating from V1R1 to V1R2, CICS PA automatically upgrades your System Definitions to allow you to take immediate advantage of the improved functionality.

  Report Sets have been enhanced:
  - The new Transaction Resource Usage report is introduced.
  - Performance Selection Criteria has been extended to allow selection of the new Transaction resource class field FILENAME, and the new Application naming Performance class fields APPLTRAN and APPLPROG.

- There is a new run-time option to allow override of System Selection specifications in the Report Set.
- Three new reports (Workload Activity, DB2 and System Logger) and one new Extract (Record Selection) are introduced.
- Cross-System Work report can now (optionally) specify a List Report Form to allow you to tailor the format of the report.
- Export Extract now allows the (optional) specification of a List or Summary Report Form so you can customize the format and style of your extract data sets.
- Extract data sets have a new option for the specification of DISP=OLD or MOD.
- Report Set JCL generation has been enhanced to allow System specification at run time, rather than in the Report Set itself.
- Report Set JCL generation has been enhanced to include two new "missing SMF Files" options that allows you to proceed with JCL generation without the required SMF files being specified.
- Summary report Time Interval limit increased from 60 minutes to 24 hours.
- Performance Selection Criteria has been extended to allow selection based on the new CICS TS 2.1 and 2.2 CMF fields.
- Performance Selection Criteria has been extended to allow selection of a new special field, UOWID. UOWID is the 6 byte hexadecimal network unit-of-work ID (NETUOWSX) and allows you to request reporting for a particular UOW. The input field for the 1st value has been increased in length from 9 to 12 bytes to allow the specification of 12 hexadecimal digits.
- Selection Criteria for Exception reporting has been extended to include the following new fields: FSTRINGW, LUNAME, RESOURCE, TCLASS, PRTY, TSBUFFER, TSSTRING.
- Selection Criteria now supports null values with the specification of ' '.
- Selection Criteria has a new prompt capability to allow selection of Object Lists.
- The prompt capability for selection of Systems, Images, Groups, and Report Forms has been extended to the report and extract lists.

Report Forms have been enhanced:

- The new Application naming Performance class fields APPLTRAN and APPLPROG are introduced.
- There is a new Report Form field category (DFHAPPL) that allows the new fields APPLTRAN and APPLPROG to be included in all Report Forms.
- Most new CICS TS 2.1 and 2.2 CMF fields are now supported.
- New special fields JVMMTIME, RMIOTHER, UOWID and UOWSEQ are introduced.
- Report Form samples are provided. This facility allows you to select from over 60 pre-defined Report Forms to meet the most common reporting requirements.
- All Report Forms can now be used to format Export extracts, allowing you to tailor the contents and style of your extract data sets.
- The Summary Report Form allows the following new sort fields: RPTCLASS, RSYSID, SRVCLASS and TCPSRVCE.

Previous changes

     – There is a new Report Form field category (CROSSSYS) that allows the Cross-System Extract special user fields (TOTRECS, APPLRECS, TRANROUT, FUNCSHIP and DPLRECS) to be included in all Report Forms (List, List Extended, and Summary).

- **Expanded publications**

  The CICS PA User's Guide and Reference was split into two books, the User's Guide and the Report Reference:

  – The User's Guide contains information for the experienced and novice user alike. It explains how to best use and exploit the many features of CICS PA.

  – The Report Reference is for the systems performance analyst. It helps explain the many CICS PA reports and how they can be used to help measure and tune your CICS systems.

  The Guided Tour in the User's Guide was enhanced to walk you through more of the CICS PA dialog and help you get started with using CICS PA.

Part 1. Introduction

The chapters in this part introduce you to CICS Performance Analyzer for z/OS, its main concepts and components, and how to install it.

Chapter 1. Overview

This chapter provides a brief introduction to CICS PA. It describes the reports and extracts that you can request and the types of data they process. It also describes the historical database facility.

What is CICS PA?

CICS Performance Analyzer for z/OS (CICS PA) is a reporting tool that provides information on the performance of your CICS systems and applications, and helps you tune, manage, and plan your CICS systems effectively. CICS PA also provides a Historical Database facility to help you manage CICS statistics and performance data for your CICS transactions.

CICS PA is not an online monitoring tool. It produces reports and extracts using data normally collected by your system in MVS System Management Facility (SMF) data sets:

- CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class data in SMF 110 records
- CICS statistics and server statistics data in SMF 110 records
- DB2 accounting data in SMF 101 records
- WebSphere MQ accounting data in SMF 116 records
- System Logger data in SMF 88 records
- IBM Tivoli OMEGAMON XE for CICS on z/OS (OMEGAMON XE for CICS) data in SMF 112 records, containing transaction data for Adabas, CA-Datacom, CA-IDMS, and Supra database management systems

It is designed to complement the CICS-supplied utilities and sample programs such as DFH$MOLS, DFHSTUP and DFH0STAT.

CICS PA can help:

- System Programmers to track overall CICS system performance and evaluate the results of their system tuning efforts
- Application Programmers to analyze the performance of their applications and the resources they use
- Database Administrators to analyze the usage and performance of database systems such as IMS™ and DB2
- MQ Administrators to analyze the usage and performance of their WebSphere MQ messaging systems
- Managers to ensure transactions are meeting their required Service Levels and measure trends to help plan future requirements and strategies

CICS PA reports all aspects of CICS system activity and resource usage, including:

- Transaction response time
- CICS system resource usage
- Cross-system performance, including multi-region operation (MRO) and advanced program-to-program communication (APPC)
- CICS Business Transaction Services (BTS)
- CICS Web support
- External subsystems, including DB2, IMS, and WebSphere MQ

- System Logger performance
- Exception events that cause performance degradation
- Transaction file and temporary storage usage

Data input

The primary data source for CICS PA is the data collected by the CICS Monitoring Facility. CMF data is written to the MVS System Management Facility (SMF) data set as SMF type 110 records, subtype 1.

There are three types, or "classes", of CMF data analyzed by CICS PA:

CMF Performance class data
> Detailed transaction-level information, such as the processor and elapsed time for a transaction, or the time spent waiting for I/O.

CMF Exception class data
> Information about exceptional conditions suffered by a transaction, such as queuing for file strings, or waiting for temporary storage. This data highlights possible problems in system operation.

CMF Transaction resource class data
> Additional transaction-level information about individual resources accessed by a transaction. Currently, the transaction resource class covers file and temporary storage resources only.

Another major data source for CICS PA is:

CICS statistics and server statistics data
> SMF type 110 records, subtypes 2, 3, 4, and 5.

CICS PA also analyzes the following types of data:

DB2 accounting data
> SMF type 101 records written by DB2 on behalf of CICS attached tasks.

WebSphere MQ accounting data
> SMF type 116 records written by WebSphere MQ on behalf of CICS attached tasks.

System Logger data
> SMF type 88 records written by the MVS System Logger on behalf of CICS Transaction Server journaling.

The **CICS PA Historical Database** is a repository for CMF performance class data, and CICS statistics and server statistics data.

CICS PA reports and extracts

CICS PA provides an ISPF menu-driven dialog to help you request and submit your reports and extracts. The available reports and extracts are grouped by category and briefly described below.

Performance Reports
    List
    List Extended
    Summary
    Totals
    Wait Analysis
    Cross-System Work
    Transaction Group
    BTS
    Workload Activity
Exception Reports
    List
    Summary
Transaction Resource Usage Reports
    File Usage Summary
    Temporary Storage Usage Summary
    Transaction Resource Usage List
Subsystem Reports
    DB2
    WebSphere MQ
    OMEGAMON
System Reports
    System Logger
Performance Graphs
    Transaction Rate
    Transaction Response Time
Extracts
    Cross-System Work
    Export
    Record Selection
    HDB Load
    System Logger

Figure 1. CICS PA reports and extracts grouped by category

Performance reports

The Performance reports are produced from CMF performance class data. The reports in this category are:

Performance List
    Lists in detail the CMF performance class data. For more information, see "Performance List report" on page 188.

Performance List Extended
    Sorts and lists in detail the CMF performance class data. For more information, see "Performance List Extended report" on page 196.

Performance Summary
    Summarizes the CMF performance class data. For more information, see "Performance Summary report" on page 197.

Performance Totals
    Provides totals and averages of the CMF performance class data. For more information, see "Performance Totals report" on page 200.

Wait Analysis

Summarizes transaction activity by wait time. For each Transaction ID, the resources that cause this transaction to be suspended are shown in the order of most to least expensive. This report highlights the system resource bottlenecks that may be causing bad response time. More detailed analysis can then be performed, focusing on the problem resources identified. For more information, see "Wait Analysis report" on page 202.

Cross-System Work

A detailed listing of segments of work performed by the same or different CICS systems via transaction routing, function shipping, or distributed transaction processing on behalf of a single network unit-of-work id. For more information, see "Cross-System Work report" on page 204. The format can be tailored to produce the Cross-System Work Extended report (see Figure 177 on page 376).

Transaction Group

A detailed listing of segments of work performed by the same or different CICS systems on behalf of a single transaction group id. For more information, see "Transaction Group report" on page 206.

BTS (CICS Business Transaction Services)

A detailed listing of the segments of work performed by the same or different CICS systems on behalf of a single CICS Business Transaction Services (BTS) process. For more information, see "BTS report" on page 208.

Workload Activity

Provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals. The Workload Activity List report is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed. The Workload Activity Summary report summarizes response time by WLM service and report classes. For more information, see "Workload Activity report" on page 209.

Exception reports

The Exception reports are produced from CMF exception class data. The reports in this category are:

Exception List

Lists in detail the CMF exception class data. For more information, see "Exception List report" on page 213.

Exception Summary

Summarizes the CMF exception class data. For more information, see "Exception Summary report" on page 214.

Transaction Resource Usage reports

The Transaction Resource Usage reports are produced from CMF performance class and transaction resource class data. The reports in this category are:

File Usage Summary

Provides two summaries of file usage:

- The Transaction File Usage Summary report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction and File statistics followed by a breakdown of File usage for each File used.
- The File Usage Summary report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

For more information, see "File Usage Summary report" on page 217.

Temporary Storage Usage Summary

Provides two summaries of temporary storage usage:

- The Transaction Temporary Storage Usage Summary report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction and Temporary Storage statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage Queue used.
- The Temporary Storage Usage Summary report summarizes Temporary Storage activity. For each Temporary Storage Queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

For more information, see "Temporary Storage Usage Summary report" on page 220.

Transaction Resource Usage List

Provides a list of all Transaction resource class records in the sequence that they appear in the SMF file. It gives Transaction information, detailing their individual Temporary Storage and File usage. This report processes only transaction resource class data, not performance class data. For more information, see "Transaction Resource Usage List report" on page 223.

Subsystem reports

The Subsystem reports are produced from database subsystem accounting data stored in SMF files. (Note that the DB2 report also processes CMF performance class data whereas the WebSphere MQ and OMEGAMON reports do not.) The reports in this category are:

DB2   Correlates CICS CMF performance class (SMF 110) records and DB2 accounting (SMF 101) records by network unit-of-work to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report. The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction. For more information, see "DB2 report" on page 226.

WebSphere MQ

Processes WebSphere MQ accounting (SMF 116) records to provide comprehensive performance analysis and resource usage for your CICS transactions that use MQ.

The WebSphere MQ List report provides a trace of MQ accounting records, reporting the comprehensive performance contained in subtype 0, 1 and 2 records. The WebSphere MQ Summary report provides two summarized views of your MQ transactions:

- Summary by CICS Transaction ID, showing the MQ system and queue resources use
- Summary by WebSphere MQ Queue name, showing the Transactions they service and resources used

For more information, see "WebSphere MQ report" on page 231.

OMEGAMON

Processes OMEGAMON XE for CICS (SMF 112) records to produce a detailed view of how CICS transactions use the following types of database management system (DBMS):

Adabas
CA-Datacom
CA-IDMS
Supra

For each type of DBMS, you can request up to three reports:

- A List report, showing database usage for each transaction.
- A Transaction Summary report, showing database usage summarized by transaction ID.
- A Database Summary report, showing database usage summarized by database.

The information in each report varies depending on the type of DBMS, but typically includes elapsed times and counts for each of the methods that transactions use to access a database, such as read, write, add, update, and delete.

For more information, see "OMEGAMON reports" on page 235.

System reports

The System reports are produced from system data stored in SMF files. Note that the System Logger report does not process CMF performance class data. There is only one report in this category:

System Logger report

Processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems. The System Logger List report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval. The System Logger Summary report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time. These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems. For more information, see "System Logger report" on page 240.

Performance Graph reports

The Performance Graph reports are graphical-style reports produced from CMF performance class data. The graph reports can be useful as daily indicators of system activity, as well as for analyzing particular performance problem areas in your CICS system. The reports in this category are:

Transaction Rate

A set of two graphs illustrating the average response time and the number of transactions that completed in a specified time interval. For more information, see "Transaction Rate Graph report" on page 245.

Transaction Response Time

A set of two graphs illustrating the average and maximum response time,

respectively, for all transactions that completed in a specified time interval. For more information, see "Transaction Response Time Graph report" on page 248.

Extracts

While the other categories produce reports and graphs intended for human readers, the extracts produce data sets intended for use by software applications, including CICS PA itself.

Cross-System Work

This data set is useful for cross-system analysis. CICS PA allows you to merge CMF performance class data from segments of work performed by the same or different CICS systems via transaction routing, function shipping, or distributed transaction processing on behalf of a single network unit-of-work ID. This Cross-System Work data set can be used as input to CICS PA Performance Reports such as the List, Summary, and Totals reports to monitor the total amount of resources used by a transaction within a single CICS system or across multiple CICS systems. For more information, see "Cross-System Work extract" on page 251.

Export

This data set contains a selected subset of CMF performance class data, extracted and formatted as a delimited text file. This file can then be imported into DB2 databases or PC spreadsheet applications such as Lotus® 1-2-3® for further reporting and analysis. The extract records have a default format which includes all the clock fields, or the format can be tailored like the Performance List or Performance Summary reports. For more information, see "Exported Performance Data extract" on page 258.

Record Selection

This data set contains only the SMF record types that are of interest to you. You can extract any combination of the SMF record types supported by CICS PA. The extract file can then be used as input to CICS PA, allowing for more efficient reporting. For more information, see "Record Selection extract" on page 263.

HDB Load

The HDB Load is a facility that loads SMF data into a Historical Database (HDB). This same facility is available from Primary Menu option 5 Historical Database, where the full set of HDB reporting facilities is available. However, from Report Sets you have the advantages of batch JCL generation and multiple load requests supported in the one job. A Recap report containing processing statistics is always printed at the end of load processing.

System Logger

This data set contains a selected subset of System Logger data, extracted and formatted as a delimited text file. This file can then be imported into DB2 databases or PC spreadsheet applications such as Lotus 1-2-3 for further reporting and analysis. For more information, see "System Logger extract" on page 271.

The CICS PA dialog

The CICS PA dialog is an ISPF-based menu-driven dialog that helps you create, maintain and submit your report requests. It also helps you to specify your input data and tailor requests specific to your requirements without you having to understand the SMF data.

CICS PA Primary Option Menu

```
   File  Options  Help
--------------------------------------------------------------------------------
V2R1M0              CICS Performance Analyzer — Primary Option Menu
Option ===> _____

0  CICS PA Profile       Customize your CICS PA dialog profile
1  Personal Systems      Specify personal CICS Systems, SMF Files and Groups
2  Report Sets           Request and submit reports and extracts
3  Report Forms          Define Report Forms
4  Object Lists          Define Object Lists
5  Historical Database   Collect and process historical data
6  Shared Systems        Specify shared CICS Systems, SMF Files and Groups
7  Statistics            Report CICS Statistics
X  Exit                  Terminate CICS PA
```

Figure 2. CICS PA Primary Option Menu

The following steps introduce the primary menu options and explain briefly how to use the dialog to start reporting:

1. Define your CICS systems and their SMF files. Once your CICS systems are defined, you can start reporting against them. You can automate this process by using the Take-Up facility. CICS PA extracts the relevant information about your CICS systems from your SMF files. If you define your own CMF user fields, then specify your MCT definition. The user fields can then be incorporated into your CICS PA reports.

   Related CICS systems, such as those systems that connect via IRC/MRO or ISC/APPC can be grouped together for reporting purposes. For example, assigning the CICS MRO systems (CICSPTOR, CICSPAOR, CICSPFOR, CICSPDOR) and DB2 subsystem (DB2P) to a Group allows you to report on these systems as a single entity. CICS PA reports can then show a complete end-to-end picture of your MRO transaction activity, incorporating detailed DB2 statistics derived from the DB2 accounting data of subsystem DB2P.

   You can use Personal System Definitions (option 1) or Shared System Definitions (option 6). Typically your personal definitions are maintained by you and used by you for reporting. They are saved in your Personal Profile Library (specified in option 0 CICS PA Profile). This contrasts with Shared System Definitions which are typically maintained by a central administrator and used by all users for reporting. They are saved in the HDB Register (specified in option 5 Historical Database).

2. Use option 2 to define Report Sets to build, submit, and save your report requests. A Report Set contains the set of reports and extracts that you wish to run in a single job. Simply select the ones you require and submit.

   Specify Selection Criteria to filter the input records to report only the information that you are interested in. For example, you can specify Selection Criteria to restrict reporting to:
   - A particular date/time range
   - A group of related Transaction IDs
   - Transaction response times that exceed your thresholds

   Run your Report Sets (or individual reports or extracts). The CICS PA dialog builds the JCL and commands to produce the reports and extracts. You can edit these jobs, or you can write your own jobs.

3. Use option 3 to define Report Forms to tailor the format and content of your reports and extracts. A simple to use editor allows you to design your own report by selecting the required CMF fields. Most CMF fields can be selected for reporting, and detailed explanations of each CMF field are available from the dialog. A comprehensive set of Sample Report Forms are provided to help you tailor your reports and extracts.

4. Use option 4 to define Object Lists to help you specify values for filtering and grouping objects such as transaction IDs and terminals. Object Lists are used when specifying Selection Criteria for reports and extracts.

5. Use option 5 to define and maintain Historical Databases (HDBs) as repositories of performance data. Generate reports against your HDBs or export HDB data to DB2 for further manipulation and analysis.

6. Use option 7 to report on CICS statistics and server statistics from eligible SMF files or HDBs.

CICS PA Profile

This facility allows you to customize your CICS PA user profile which includes:

- CICS PA dialog settings such as the name of your Personal Profile Library (where personal system definitions are stored), your preferred date format, and the job card CICS PA is to use when generating JCL.

- The allocation attributes of data sets that may need to be created during Report Set processing. CICS PA uses these when generating JCL.

- The control data sets to use for Report Sets, Report Forms and Object Lists.

You can bypass this menu option because CICS PA uses defaults and prompts you if and when further information is required.

System Definitions

Use System Definitions to define:
- CICS systems and SMF files that you want to report against
- DB2 subsystems and SMF files for the DB2 report and Record Selection extract
- MQ subsystems and SMF files for the WebSphere MQ report and Record Selection extract
- System Loggers and SMF files for the System Logger report and Record Selection extract

You can specify SMF data sets for each system (CICS, DB2, MQ, Logger) or for each MVS system (image) where they execute. In addition you can define groups of systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, or IPIC.

Your System Definitions are then used in the following ways:

- By specifying the Systems (or Groups) in your Report Sets, CICS PA can determine the related files to include in Report Set JCL generation.

- By specifying a CICS APPLID when creating Report Forms and HDB Templates, CICS PA can determine the user fields and CICS version. CICS PA can then populate your Report Form or HDB Template with CMF fields appropriate to the release of CICS and user fields for the particular CICS system.

- By specifying a CICS APPLID for the Cross-System Work extract, CICS PA can determine the user fields for the particular CICS system for inclusion in the extract file.

- The SSID of specified DB2 Subsystems provides filtering on SSID for the DB2 report and Record Selection extract.

- The SSID of specified MQ Subsystems provides filtering on SSID for the WebSphere MQ report and Record Selection extract.

For reporting, you can use either Personal System Definitions (Primary Menu option 1) or Shared System Definitions (Primary Menu option 6), but not both at the same time. Set **Systems** in the action bar to the definitions that you want to use for report. Typically your personal definitions are maintained by you and used by you for reporting.

Personal Systems
Personal System Definitions are maintained using Primary Menu option 1. They are saved in your Personal Profile Library (specified in option 0 CICS PA Profile Settings). Typically your personal definitions are maintained by you and used by you for reporting.

The dialog provides a take-up facility to automatically define your personal systems from an SMF file.

Shared Systems
Shared System Definitions are maintained using Primary Menu option 6. They are saved in the HDB Register (specified in option 5 Historical Database). Typically the shared definitions are maintained by a central administrator, but for reporting, they are used by all users of that register.

The dialog provides a take-up facility to automatically define your shared systems from an SMF file. The dialog provides a second take-up facility to automatically load your personal definitions into the Shared System Definitions.

Report Sets

A Report Set defines a selection of reports and extracts with their associated options. The CICS PA reports and extracts are listed in Figure 1 on page 5.

You can define any number of Report Sets and select any number of reports and extracts in a Report Set. The reports in a Report Set are produced as a group from one pass of the input data sets.

A Report Set can be run on a one-off basis, or run repeatedly against different input each time. Changes are made to Report Sets using the CICS PA dialog, and immediately affect the next run of the Report Set.

The data to be analyzed by a Report Set can optionally be restricted by a Start/Stop date and time specified at submit time. This reduces the volume of data to be analyzed as only a subset of the data in the input files is passed to the report processors, thereby increasing the efficiency of the report processing.

Selection Criteria
Selection Criteria can be specified to provide filtering of the data to be reported or extracted. Selection Criteria are made up of a series of SELECT Statements which specify whether to include or exclude data based on:
- date-time ranges or time slots
- started, stopped, or continuing (active) transactions
- particular field values

You can filter on many fields, and specify value lists, masks or ranges. Object Lists are a convenient way to specify the values and define groups of objects such as transaction IDs and terminals.

Running Report Sets

The CICS PA dialog generates the JCL for batch report processing. The Report Set (or individual report or extract), and any Report Forms and Object Lists it uses, are converted to a stream of commands for batch execution. Eligible data sets specified in your System Selection are built into the JCL as input to the batch reporting programs.

Enter the **RUN** command to run your Report Set. This prompts you to check or change your run-time options before generating the JCL. Run-time options include System Selection, Report Interval, and whether you want to edit the JCL before submitting the job for batch execution.

Alternatives to the RUN command are JCL and SUB. These do the same as the RUN command except:

- The **JCL** command selects the run-time option Edit JCL before Submit. This allows you to review or modify the JCL before submit, or to save the JCL in an external library for later submission independent of the CICS PA dialog.
- The **SUBMIT** or **SUB** command does not select the run-time option Edit JCL before Submit. It requests that the job be submitted immediately.

Analyzing the output

View or print your reports using standard facilities such as SDSF or ISPF Outlist Utility.

Process your extract data sets according to their purpose:

- Analyze the Cross-System Work extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance export data or System Logger Extract using external programs such as DB2, or PC tools such as Lotus 1-2-3.
- Specify the Record Selection extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.

Report Forms

Report Forms can be used to tailor the format and content of the following reports and extracts:

    Performance List report
    Performance List Extended report
    Performance Summary report
    Cross-System Work report
    Export extract

One Report Form can be used by many reports of compatible type. The Report Form defines the CMF fields to include in the report, the order of the columns, sort sequence (where applicable), and report title.

List and Summary Report Forms can also be used to tailor HDB reports.

Object Lists

Object Lists provide a convenient way to specify field values for filtering the CMF data and grouping objects for reporting purposes. For example, to analyze the resource usage of a particular group of transactions.

An Object List defines particular values, masks, or ranges of values which can be used in the Selection Criteria for as many reports and extracts as required. Long lists of field values need only be defined once and reused in Report Sets as often as desired.

Historical Database

Historical Database (HDB) is a facility that allows you to manage performance and statistics data for your CICS transactions. SMF data is saved in HDB container data sets that are managed from the CICS PA dialog.

There are three types of HDB:

Performance List HDB

A List HDB is built from CMF performance class data. In a List HDB data set, one record represents one transaction. Typically, List HDBs are used to analyze recent transaction events. Data is usually only required for a short period of time. The type of information and level of detail contained in a List HDB is determined by the List Template on which it is based.

Performance Summary HDB

A Summary HDB is built from CMF performance class data. In a Summary HDB data set, one record represents a summary of transaction activity over a user-specified time interval. Typically, Summary HDBs are used for long-term trend analysis and capacity planning. Data is retained for a longer period of time, sometimes years. The type of information and level of detail contained in a Summary HDB is determined by the Summary Template on which it is based.

Statistics HDB

A Statistics HDB contains collections of CICS statistics and server statistics over a specified time interval.

You can run reports against your HDB, export the HDB data to DB2 tables, or export the HDB data to extract data sets in CSV format.

Statistics reporting

CICS PA provides comprehensive reporting and analysis of CICS statistics and server statistics data. It complements the CICS statistics reporting utilities DFHSTUP and DFH0STAT. CICS PA can interactively process and report statistics data directly from SMF files or from an HDB after collection. The advantage of collecting statistics data in an HDB is that data can also be exported to DB2 and extracted to CSV data sets for off-host analysis.

Features of the interactive statistics reporting facility include:
• Tabular reporting, sorting by field (column)
• Forms to design personalized reports
• Hyperlinks to jump directly to related reports
• Print facility, either to a data set or to SYSOUT

The CICS PA commands

The CICS PA commands are used to request reports and extracts. The CICS PA dialog automatically generates the commands and JCL when you submit a Report Set. You can edit these jobs or set up your own jobs.

The standard command format for producing reports and extracts is:

Name	Command	Operands	Comments
name in columns 1-8 (or blank)	**CICSPA**	one or more operands	comments (or blank)

The general format of the command as it appears in the `//SYSIN DD` statement of the CICS PA batch JCL is:

```
CICSPA operand[(suboperand)][,operand[(suboperand)],]...
```

For a full discussion, see Chapter 12, "Using the CICS PA commands," on page 337.

There is one other command available in batch, but not supported by the dialog:

DUMP   This defines the options for the DUMP utility tool which is used to print the contents of a selected subset of input records on **SYSPRINT** in a hexadecimal and alphanumeric format. It cannot be used in conjunction with the **CICSPA** command. See "DUMP command" on page 717 for an explanation and examples of its use in problem diagnosis.

Introduction — CICS PA commands

Chapter 2. Installing CICS PA

This chapter describes the procedure for installing the CICS PA dialog components and migrating from an earlier release of CICS PA. Before installing the dialog, follow the installation instructions in the Program Directory supplied with CICS PA.

CICS PA system requirements

Make sure that you have the following hardware, software, and storage requirements in place before installing and running CICS PA.

Hardware requirements

If your z/OS operating system and CICS were installed in compliance with their documented minimum hardware requirements, you have only the following additional requirements to consider in installing CICS PA:

- DASD storage required for the CICS PA product. For information on DASD requirements, refer to the Program Directory that is shipped with CICS PA.
- Optionally:
  - Printer for printing reports and graphs
  - PC for downloading extract data

Software requirements

CICS PA requires the following software products:

- z/OS Version 1 Release 6 or later (contains SMP/E) (5604-A01)
- z/OS Version 1 Release 6 DFSORT feature or later, or an equivalent sort product

CICS PA can process SMF data produced by the following CICS systems:

- CICS Transaction Server for OS/390 Version 1 Release 3 (5655-147; earlier releases not supported)
- CICS Transaction Server for z/OS Version 2 (5697-E93)
- CICS Transaction Server for z/OS Version 3 (5655-M15)

Storage requirements

CICS PA executes in a virtual storage region. Region size will vary based on your specific report requirements and the amount of data input.

Typical storage use begins at 2048K, which includes storage for:
- CICS PA programs
- Access methods and buffers
- Report queues (most are located above the 16 MB line)

Installations with large CICS systems may experience greater resource requirements.

Operating system requirements are additional.

CICS PA components

The components of the CICS PA dialog are delivered in the following libraries:

SCPAEXEC   REXX EXECs

CICS PA components

SCPALINK   Executable load modules

SCPAM_xxx_   ISPF messages

SCPAP_xxx_   ISPF panels

SCPAT_xxx_   ISPF input tables

SCPAS_xxx_   ISPF skeletons

where _xxx_ identifies the national language, such as **ENU** for U.S. English.

In addition, sample JCL for running batch reports and extracts is supplied in the **SCPASAMP** library. See Chapter 13, "Sample library," on page 471.

CPAOREXX command

The CICS PA initialization module CPAOREXX accepts four parameters:

qual   The data set high level qualifier for CICS PA data sets. For example, CICSPA.V2R1M0. Alternatively, specify NODYNAM to tell CICS PA to use the existing allocation settings.

lang   Identifies the national language. The default is **ENU** (U.S. English).

PASSAPPL   Optional. Overrides the enforcement of the default CICS PA application NEWAPPL(CPAO). CICS PA uses the invoking application's APPL specification. See "Overriding the default application" on page 19.

low level qualifiers

Optional. Overrides the default low level qualifiers for the six CICS PA data sets. All six qualifiers must be specified in the correct order, enclosed in brackets and separated by commas. See "Overriding the data set low level qualifiers" on page 19. For example:

```
(EXEC,LINKLIB,MSG,PNL,TBL,SKL)
```

Installing the CICS PA dialog

You can either install the CICS PA libraries statically within your ISPF library setup, or allow them to be set up dynamically when the CICS PA dialog is used. Then you can optionally add CICS PA to an ISPF menu.

Dynamic setup is the simplest and quickest approach.

Dynamic setup

To enable the CICS PA libraries to be dynamically set up when the CICS PA dialog is invoked, do the following:

1. On the TSO command processor panel, enter:

   ```
   EX 'qual.SCPAEXEC(CPAOREXX)' 'qual lang'
   ```

   For example:

   ```
   EX 'CICSPA.V2R1M0.SCPAEXEC(CPAOREXX)' 'CICSPA.V2R1M0 E'
   ```

   If the high level qualifier for your CICS PA installation data sets is not CICSPA.V2R1M0, then alter the command accordingly.

2. To add CICS PA to an ISPF menu, set &ZSEL to:

   ```
   CMD(EX ''qual.SCPAEXEC(CPAOREXX)'' ''qual lang'') NOCHECK
   ```

NOCHECK is specified to support entry of concatenated commands via the direct option (trail). Also specify on the calling panel:

```
&ZTRAIL=.TRAIL
```

Note: Dynamic setup requires that the supplied library names are retained. These are listed under "CICS PA components" on page 17.

Static setup

To install the CICS PA libraries statically within your ISPF library setup, do the following:

1. Include the library *qual*.SCPAEXEC in your SYSEXEC or SYSPROC concatenation. This library contains the required EXECs. It is allocated with fixed-block 80 record format during installation.

   You should put these libraries in the SYSEXEC concatenation. However, if you want to put them in SYSPROC, it must have a record length of 80 bytes.

   Ensure that all libraries contained in your concatenations are either in the same format (F, FB, V, VB) and have the same block size, or are in order of decreasing block sizes. Otherwise, you may experience problems using the CICS PA panels.

2. Add the remaining libraries to your ISPF library setup:
   - Include the link/load module library *qual*.SCPALINK in the ISPLLIB concatenation.
   - Include the message library *qual*.SCPAM*xxx* in the ISPMLIB concatenation.
   - Include the panel library *qual*.SCPAP*xxx* in the ISPPLIB concatenation.
   - Include the table library *qual*.SCPAT*xxx* in the ISPTLIB concatenation.
   - Include the skeleton library *qual*.SCPAS*xxx* in the ISPSLIB concatenation.

3. On the TSO command processor panel, enter:

   ```
   %CPAOREXX 'NODYNAM lang'
   ```

4. To add CICS PA to an ISPF menu, set &ZSEL to:

   ```
   CMD(%CPAOREXX ''NODYNAM lang'') NOCHECK
   ```

Overriding the default application

To override the default CICS PA application, use the PASSAPPL parameter in the ISPF menu &ZSEL setting:

```
CMD(EX ''qual.SCPAEXEC(CPAOREXX)'' ''qual lang PASSAPPL'') NOCHECK NEWAPPL(CPAP)
```

CICS PA will then use **CPAP** as the application, rather than the default of CPAO.

Overriding the data set low level qualifiers

The default CICS PA data set low level qualifiers are listed under "CICS PA components" on page 17. You can override these by specifying the desired qualifiers as the last parameter in the ISPF menu &ZSEL setting. All six qualifiers must be specified in the correct order, enclosed in brackets and separated by commas. For example:

```
CMD(EX ''qual.SCPAEXEC(CPAOREXX)'' ''qual lang (EXEC,LNK,MSG,PNL,TBL,SKL)'')
```

CICS PA will then use the following libraries:

'*qual*.**EXEC**'   REXX EXECs

'*qual*.**LNK**'   Executable load modules

       '*qual*.**MSG**'   ISPF messages

       '*qual*.**PNL**'   ISPF panels

       '*qual*.**TBL**'   ISPF input tables

       '*qual*.**SKL**'   ISPF skeletons

Migrating from an earlier release

No additional setup is required if migrating from an earlier release of CICS PA. Your System Definitions, Report Sets, Report Forms, Object Lists, and HDBs will be upgraded automatically so you can take advantage of the new and changed features in CICS PA V2R1.

If you are migrating from CICS PA V1R2 or earlier, the following prompt will display when you first select option 2 **Report Sets** from the Primary Option Menu and then select a Report Set to edit or view.

```
                    CICS PA V2R1 Upgrade

The presentation of reports in a CICS PA V2R1 Report Set is a
tree structure. The Report Categories can be expanded (to show)
or collapsed (to hide) the reports.

If your terminal emulation allows, it is recommended that you
configure your Mouse Options to activate the Lightpen function.
This allows you to left button click on the + and - characters
to Expand and Collapse the Report Categories.

_   Do not display this message again
```

Figure 3. Report Sets Upgrade

Chapter 3. Setup and getting started

CICS PA provides a menu-driven dialog to request generation of reports and extracts for analyzing and tuning the performance of your CICS Transaction Server systems. CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class data in MVS System Monitoring Facility (SMF) files provide the input to the CICS PA reports and extracts. In addition, DB2 and MQ accounting, System Logger, and OMEGAMON XE for CICS records in SMF files are analyzed by specific reports.

Facilities are provided to help you to specify your input files, filter the data, and tailor the reports and extracts to suit your requirements.

The dialog requires no special customization or setup. Reporting can commence immediately.

To get started with using CICS PA to analyze the performance of your CICS systems and applications, proceed as follows:

1. Before installing CICS PA, check that the system requirements are met. Refer to "CICS PA system requirements" on page 17.

2. To install CICS PA, follow the instructions in the Program Directory. Then to complete the installation, refer to "Installing the CICS PA dialog" on page 18.

3. If you are unfamiliar with System Monitoring Facility (SMF) data and how to prepare it for CICS PA reporting, refer to Chapter 4, "SMF data used by CICS PA," on page 37.

4. To get started with using the CICS PA dialog to define and run report and extract requests, refer to "How to use the dialog" on page 22.

   By following the Chapter 7, "Guided Tour: Report Sets reporting," on page 135 you can quickly get an insight into how to use the dialog.

   Perhaps a good report to then try is either the Performance Totals report or the Performance Summary report with the data summarized by Transaction ID within APPLID. A Performance Totals report can be a particularly useful starting point in that the report (a) is relatively small, less than ten pages, and (b) can provide an immediate indication of which area to look into next.

5. To understand the JCL generated by the dialog, or set up your own jobs, refer to Chapter 11, "JCL for reports and extracts," on page 329.

   Sample jobs for each report and extract are provided in Chapter 13, "Sample library," on page 471.

6. To understand the CICS PA commands generated by the dialog or to code them directly in your job stream, refer to Chapter 12, "Using the CICS PA commands," on page 337. This chapter includes many syntax examples and sample reports.

7. For help analyzing the report and extract output, and interpreting the CMF performance and exception data, refer to the *CICS Performance Analyzer for z/OS Report Reference.*

8. If results are not as expected, refer to Chapter 21, "Messages," on page 671, and Chapter 22, "Problem determination," on page 711 to help you diagnose and resolve problems.

9. To define and populate a historical database for analyzing performance over time, refer to Part 6, "Using the Historical Database (HDB)," on page 525.

CICS PA Primary Option Menu

```
  File  Options  Help
 --------------------------------------------------------------------------------
 V2R1M0            CICS Performance Analyzer — Primary Option Menu
 Option ===> _____

 0  CICS PA Profile        Customize your CICS PA dialog profile
 1  Personal Systems       Specify personal CICS Systems, SMF Files and Groups
 2  Report Sets            Request and submit reports and extracts
 3  Report Forms           Define Report Forms
 4  Object Lists           Define Object Lists
 5  Historical Database    Collect and process historical data
 6  Shared Systems         Specify shared CICS Systems, SMF Files and Groups
 7  Statistics             Report CICS Statistics
 X  Exit                   Terminate CICS PA






    F1=Help      F3=Exit      F10=Actions      F12=Cancel
```

Figure 4. Primary Option Menu

Figure 4 shows the CICS PA dialog main menu panel. For a brief explanation of the main CICS PA concepts introduced here, refer to "The CICS PA dialog" on page 9.

How to use the dialog

The following steps briefly describe how to use the dialog to start reporting.

Initial setup (defaults apply)

This is applicable when using CICS PA for the first time.

Initial setup is optional. CICS PA uses default settings and prompts you to allocate data sets (with default allocation attributes) as they are required.

However, if you want to step through the process, the initial setup procedure is:

1. Check your **ISPF environment settings.** See "Recommended ISPF setup" on page 24.
2. Specify the **CICS PA Settings.** This allows some customization of the CICS PA dialog and JCL used for generating reports and extracts. See "CICS PA Settings" on page 26.
3. Specify default **Reporting Allocation Settings** (UNIT= and SPACE=) for the Extract data sets, External Work data sets, and Sort Work data sets. These are used by the CICS PA dialog to generate the corresponding DD statements in the JCL. See "Reporting Allocation Settings" on page 29.
4. Specify the **Control Data Sets** that contain the Report Sets, Report Forms, and Object Lists. See "CICS PA Control Data Sets" on page 31.

Everyday operation

The normal procedure to request and generate reports and extracts is as follows:

1. Specify the **System Definitions** by identifying your Systems (CICS APPLID, MVS Image, DB2 SSID, MQ SSID, System Logger), SMF Files, and Groups. You can automate much of this process by using the Take-up facility. See Chapter 5, "Personal System Definitions," on page 53.

2. Define a **Report Set:**
   - Create a new Report Set. See "Creating new Report Sets" on page 165.
   - Specify any **Global Options and Selection Criteria.** The Global Options apply to all reports and extracts within the Report Set. The global Performance Selection Criteria apply to all Performance reports and extracts within the Report Set. The global Exception Selection Criteria apply to all Exception reports within the Report Set.
   - Select and tailor the **Reports and Extracts** that you require. If report-specific options and selection criteria are specified, they take precedence over the corresponding Global Options and Selection Criteria at JCL build time. You can request more than one of each type of report or extract (for example, 3 Performance List Reports and 2 Cross-System Work Extracts), and specify different options for each. Exclude any of a particular type you do not wish to generate, and Deactivate if you wish to generate none of a particular type. See "Maintaining Report Sets" on page 163 for details of all reports, extracts, and their options.

3. Define any **Report Forms** used to tailor the format of the Performance List, Performance List Extended, Performance Summary and Cross-System Work reports, and Export extract. See "Maintaining Report Forms" on page 290.

4. Define any **Object Lists** used to enhance the Selection Criteria. See "Maintaining Object Lists" on page 321.

5. Enter the **RUN** command to run the Report Set. The Active status controls which reports in the Report Set are run. Only active reports in active categories are selected, but you can use the **RUN** line action to temporarily override this. A panel is displayed for you to enter run-time options. Then CICS PA generates the JCL for batch report processing. Global Options and Selection Criteria, requested reports and extracts, and any Report Forms and Object Lists they use, are converted to a stream of commands for batch execution. You can choose to submit the JCL directly, or edit it first and optionally save the JCL in an external library. See "Running Report Sets" on page 276.

6. View or print the job output using your usual method, such as SDSF or ISPF Outlist utility.

7. Process the Extract data sets using a method appropriate to each. For example:
   - Analyze the Cross-System Work Extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
   - Analyze the Performance Export or System Logger Extract data using external programs such as DB2 or PC tools such as Lotus 1-2-3.
   - Specify the Record Selection Extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.

8. Define and maintain **Historical Databases (HDBs)** as repositories of performance data. Generate reports from your HDBs or export HDB data to DB2 tables for further analysis.

Standard ISPF interface

CICS PA has been designed to follow CUA® conventions, while also accommodating established ISPF conventions. For example:

- Possible actions are presented in action bar pull-down menus; those available from the File, Edit, or View pull-down menus can also be requested from the command line.
- A menu or selection list item can be selected either by positioning the cursor over it (point-and-shoot) or by specifying its corresponding number, and then pressing Enter.
- For many entry fields you can select from a list of available choices by positioning the cursor on the field and pressing **Prompt** (F4). A **+** (plus sign) to the right of the field or column heading indicates that Prompt is available.
- Short-cut navigation to the primary CICS PA functions is available. For example, to invoke Report Sets where you request your reports and extracts, you can select option **2** from the CICS PA primary menu, or enter **=2** on the command line from anywhere in the CICS PA dialog.

Help is available throughout the CICS PA dialog. Context-sensitive help is available for each panel and input field, and there is an online tutorial.

Recommended ISPF setup

The CICS PA dialog is an ISPF application following Common User Access® (CUA) conventions. You can use ISPF standard facilities to customize the screens. This section contains some recommendations to help you use CICS PA efficiently.

Screen size and scrolling

Set the screen size in your session parameters to 32 lines. CICS PA screens are optimized for 32 lines, but accommodate 24 lines by scrolling **Backward** (F7) and **Forward** (F8).

Function keys

CICS PA uses standard conventions for function keys. For example: F1=Help, F3=Exit, F4=Prompt, F5=Rfind, F7=Backward, F8=Forward, F11=Right, F12=Cancel. However, you can use the ISPF commands **KEYS** and **KEYLIST** to assign alternative functions to the keys. For a list of the CICS PA default settings, enter the **KEYSHELP** command or select **Help->Keys Help** in the action bar.

If you are new to CICS PA, ensure that the function keys are displayed at the bottom of the screens. The ISPF command **PFSHOW ON|OFF** turns on and off the display of the function key settings.

Prompt (F4)

Prompt is available on various data entry fields throughout the CICS PA dialog to help you specify valid values. To use this facility, position the cursor on the field and press **Prompt** (F4). A list of available values is displayed from which you can select one or more depending on the circumstance.

Mouse options

The CICS PA Report Set panel is a tree structure of report categories and reports. The report categories act as folders that can expand (to show) and collapse (to hide) the reports contained within them. If your terminal emulation permits, configure your Mouse Options to activate the lightpen function. You can then use the left-button of your mouse to click on the **+** to expand and **-** to collapse the report categories. Alternatively, you can use cursor selection on the **+** and **-**, or enter line action **S**.

CUA attribute settings

The CICS PA dialog is designed to use the default CUA attributes. However, we recommend that you set the **Point-and-Shoot** field to easily distinguish Point-and-Shoot fields from other types of fields. You can use the ISPF CUAATTR command to change the attribute settings. For example, you could set Point-and-Shoot to yellow as shown in Figure 5, or for better distinction, you could also set the highlight attribute to REVERSE (reverse video).

```
                    CUA Attribute Change Utility
Command ===> _____ Defaults


Panel Element                    Color     Intensity  Highlight
                                                              More:  +
Choice Entry Field . . . . . . TURQ       LOW        USCORE
List Entry Field . . . . . . . TURQ       LOW        USCORE
List Item Description . . . . GREEN       LOW        NONE
List Items . . . . . . . . . . WHITE      LOW        NONE
Normal Entry Field . . . . . . TURQ       LOW        USCORE
Normal Text . . . . . . . . . GREEN       LOW        NONE
Point-and-Shoot . . . . . . . YELLOW      HIGH       NONE
Reference Phrase . . . . . . . WHITE      HIGH       NONE
```

Figure 5. Recommended CUAATTR settings for CICS PA

Point-and-Shoot fields

CICS PA employs point-and-shoot fields. For efficient use, enter the ISPF **SETTINGS** command to display the ISPF Settings screen then select **Tab to point-and-shoot fields.**

```
                         ISPF Settings
Command ===> _____
                                                     More:  +
Options                            Print Graphics
  Enter "/" to select option         Family printer type 2
  _  Command line at bottom          Device name . . . . _
  /  Panel display CUA mode          Aspect ratio . . .  0
  /  Long message in pop-up
  _  Tab to action bar choices
  /  Tab to point-and-shoot fields   General
  /  Restore TEST/TRACE options        Input field pad . . N
  _  Session Manager mode              Command delimiter . ;
  /  Jump from leader dots
  _  Edit PRINTDS Command
  /  Always show split line
  _  Enable EURO sign

Terminal Characteristics
  Screen format   3  1. Data    2. Std    3. Max    4. Part
```

Figure 6. Recommended ISPF settings for CICS PA

Displaying messages

CICS PA uses both long and short messages. Short messages display at the top right, on the same line as the screen title. Long messages are designed to display in a pop-up window. However, long messages of less than the screen width can be customized to display just below or above the command line rather than in a

window. If you always want long messages in a pop-up window, enter the ISPF **SETTINGS** command to display the ISPF Settings screen, then select **Long message in pop-up** as shown in Figure 6 on page 25.

Messages displayed in a window can be moved to another location on the screen by doing the following:

1. Position the cursor on the top or bottom border of the message window, and press Enter.
2. Position the cursor at the location on the screen to which you wish to move the message, then press Enter.

CICS PA Profile Options

To display the CICS PA Profile Options Menu, either:

1. From the CICS PA Primary Option Menu, select option 0 **CICS PA Profile**
2. From any CICS PA panel, select **Options** from the action bar

```
   File  Options  Help
  -----------------------------------------------------------------------------
                          CICS PA Profile Options Menu
  Command ===> _____

  1  CICS PA Settings
  2  Reporting Allocation Settings
  3  CICS PA Control Data Sets
  4  DB2 Settings
```
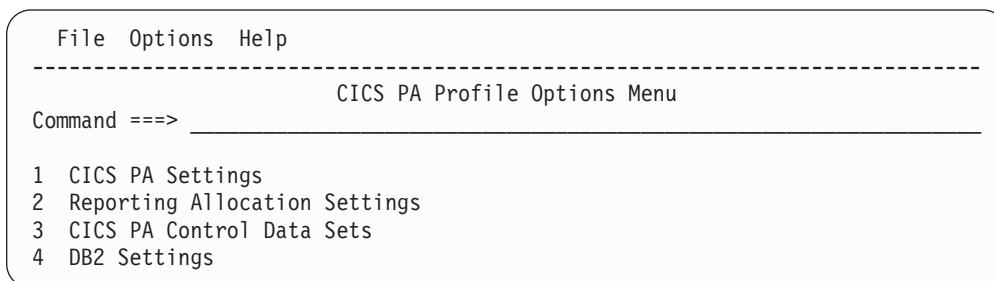
Figure 7. Profile Options Menu

This menu allows you to customize your CICS PA user profile. Defaults are set initially so you can start using CICS PA, but you can change these at any time to suit the particular way you want to interact with the CICS PA dialog. Typically you would set the profile options just once.

The menu items are:

CICS PA Settings
> Customize some aspects of the CICS PA dialog and the job card it uses when generating Report Set JCL.

Reporting Allocation Settings
> Specify the allocation attributes of data sets that may need to be created during Report Set processing. The CICS PA dialog uses these when generating the Report Set JCL.

CICS PA Control Data Sets
> Tell CICS PA the names of the data sets where Report Sets, Report Forms, and Object Lists are stored.

DB2 Settings
> Specify settings for exporting data from historical databases (HDBs) to DB2. For details, see "Creating DDL to define a DB2 table" on page 637.

CICS PA Settings

This facility allows you to customize the CICS PA dialog and batch JCL for running Report Sets and processing Historical Databases.

To display the CICS PA Settings panel, select option 1 **CICS PA Settings** from the Profile Options Menu.

```
  File  Options  Help
 ------------------------------------------------------------------------------
                              CICS PA Settings
 Command ===> _____

 Specify settings.

 CICS PA Load Library . . . . . 'CICSPA.V2R1M0.SCPALINK'_____

 Personal Profile Library . . . 'xxxx.CICSPA.TABL'_____

 Delete Confirmation  . . . . . YES___   (Yes or No)
 Cancel Confirmation  . . . . . NO____   (Yes or No)
 Automatic Save on Exit . . . . YES___   (Yes, No or Prompt)
 Reports in Upper Case  . . . . NO____   (Yes or No)
 Preferred Date Format  . . . . 1  1. ISO (YYYY/MM/DD)
                                   2. US (MM/DD/YYYY)
                                   3. European (DD/MM/YYYY)
 DASD Work File Unit Name . . . _____   (Blank for System Default)

 Job Statement Information:
 ===> //userid  JOB (ACCOUNT),'NAME',REGION=4M_____
 ===> _____
 ===> _____
 ===> _____
```

Figure 8. CICS PA Settings

All options have initial settings, but you can change these at any time to suit the way you use CICS PA. Values must be specified for all options, except the DASD Work File Unit Name and CICS PA Load Library which have system defaults.

The options are:

CICS PA Load Library
    Specify the name of the library that contains the CICS PA executable modules. This is used by the CICS PA dialog when generating the JCL for executing Report Sets. It need not be specified if the modules reside in the system LINKLIST. The initial setting is **'xxxx.SCPALINK'** where xxxx is the DSN prefix specified at dialog start up. The default initial setting is **'CICSPA.V2R1M0.SCPALINK'.**

Personal Profile Library
    The CICS PA dialog utilizes ISPF tables for storing some user data such as your personal system definitions.

    Specify the name of the data set to be used for maintaining these ISPF tables. As the data is typically user-specific and sharing with other users is not an issue, it is recommended that each user has their own data set to avoid contention with other users for access to tables.

    The initial setting is **'xxxx.CICSPA.TABL'** which CICS PA translates to **'xxxx.CICSPA.TABL'** where xxxx is determined by your TSO prefix and userid.

If the specified data set does not exist, CICS PA uses default allocation parameters to create it when it is required. The data set can be allocated using ISPF facilities outside the dialog if your site has local requirements not satisfied by the defaults.

Delete Confirmation

This option applies *only* to Delete requests from panels which have **Confirm** in the action bar: the CICS PA "primary object" list panels (Report Sets, Report Forms, Object Lists). From these list panels, deleted items cannot be reinstated, so you may always want to be prompted to confirm your Delete requests. On all other panels, deleted items can be reinstated by a Cancel request.

Specify **YES** to request CICS PA to display a confirmation pop-up to prompt you to confirm your Delete request before it is actioned. This is the initial setting.

Specify **NO** to have CICS PA action Delete requests immediately without prompting for confirmation.

Note: This option does not apply to HDB where the default is always **YES.**

Cancel Confirmation

This option applies *only* to Cancel requests from panels which have **Confirm** in the action bar: CICS PA "primary object" panels (Report Set, Report Form, Object List), System Definitions and HDB.

Specify **YES** to display a confirmation pop-up if you attempt to Cancel when there have been updates. This is to alert you that you have made changes which will be discarded if you proceed with the Cancel request.

Specify **NO** to have CICS PA action Cancel requests immediately, without first prompting for confirmation. This is the initial setting.

Automatic Save on Exit

This option applies *only* to attempts to Exit edit sessions after making changes on CICS PA "primary object" panels (Report Set, Report Form, Object List) and the System Definitions panel. It is not applicable to HDB.

Specify **YES** to automatically save the changes on Exit. This is the initial setting.

Specify **NO** to automatically discard the changes on Exit. To save any changes before exit you must remember to use the **SAVE** command.

Specify **PROMPT** to display a message if there have been updates when you attempt to Exit. To save the changes, you can use the **SAVE** command. Otherwise, to discard the changes, you can use the **CANCEL** command.

Reports in Upper Case

Specify **NO** to receive reports in upper and lower case characters. This is the initial setting.

Specify **YES** to translate all reports to upper case characters only. This is particularly for printers that cannot handle mixed case. This generates the UPPER parameter on the EXEC statement in CICS PA JCL generation generates the

Preferred Date Format

The CICS PA dialog can accept and present dates in the following formats:
1. YYYY/MM/DD ISO
2. MM/DD/YYYY US

3. DD/MM/YYYY European

Enter either **1, 2,** or **3** for the date format you prefer. **1 (ISO)** is the initial setting.

Note: This option does ***not*** apply to the format of dates presented on batch reports, which is typically MM/DD/YYYY. Further, there are exceptions within the CICS PA dialog where the functionality dictates the date format. For example, the **Changed** time stamp field of component lists (Report Sets, Report Forms, Object Lists) always presents as YYYY/MM/DD HH:MM to be able to sort on this field.

DASD Work File Unit Name

Specify the device type or group name to be used by CICS PA to allocate DASD data sets as required by facilities such as:

- Report Set, Report Form, Object List Data Sets
- Extract, External and Sort Work Data Sets used in batch processing (if the Reporting Allocation Settings are not set).

The name must represent a device that is defined as DASD in the Eligible Device Table of the current processor. For example, SYSDA, SYSALLDA, 3390.

If not specified, the system default is used. Blank (for system default) is the initial setting.

Job Statement Information

Specify the JCL JOB statement which can be continued to a maximum of four lines. These will be used by CICS PA to supply the job statement for batch Report Set and HDB processing. All the rules of JCL must be followed in specifying the job statement. CICS PA does not validate this information. Blank lines are ignored.

The default is **//userid JOB (ACCOUNT),'NAME'** from the ISPF Log and List JCL job statement information. To find this, use the **SETTINGS** command to display the ISPF Settings panel, then select **Log/List->JCL** in the action bar.

It is recommended that you include a **REGION=** parameter on your job card to allocate a virtual storage region size for CICS PA of at least 4M.

Reporting Allocation Settings

This facility is used to specify allocation attributes for data sets that CICS PA may need to create during batch processing of Report Sets.

To display the Reporting Allocation Settings panel, select option 2 **Reporting Allocation Settings** from the Profile Options Menu.

Reporting Allocation Settings

```
  File  Options  Help
 --------------------------------------------------------------------------
                       Reporting Allocation Settings
Command ===> _____

Specify data set allocation settings.

Extract Data Sets:
===> //_____UNIT=SYSDA,SPACE=(CYL,(10,10))_____
===> _____
===> _____

External Work Data Sets:
===> //_____UNIT=SYSDA,SPACE=(CYL,(10,10))_____
===> _____
===> _____

Sort Work Data Sets:
===> //_____UNIT=SYSDA,SPACE=(CYL,(10,10))_____
===> _____
===> _____
```

Figure 9. Reporting Allocation Settings

CICS PA provides default settings for each type of data set. Figure 9 shows the default allocation settings. The defaults are displayed when you first invoke the panel or when you clear a setting.

The required data set allocation settings are:

Extract Data Sets
>   Specify the UNIT and SPACE attributes for the following extract data sets:
>>   Cross-System Work
>>   Export
>>   Record Selection
>>   System Logger

>   These are sequential data sets. You do not need to specify the DCB attributes as CICS PA sets the appropriate DCB at Extract run time. However, if you specify DCB attributes, CICS PA will override RECFM and LRECL with the correct values. CICS PA will also assign the BLKSIZE to an allowable value closest to your specification. For example, if you want half track blocking, simply specify DCB=BLKSIZE=27998 (for UNIT=3390) and CICS PA will assign the highest allowable BLKSIZE not exceeding 27998.

>   CICS PA provides default settings. To reset to the default, erase the field then press Enter.

>   When the CICS PA dialog builds the Report Set JCL for a new Extract Data Set, the specified allocation settings are appended to a statement of the form:

>   `//DDname  DD  DSN=datasetname,DISP=(disp,CATLG),`

>   where *DDname* is generated by CICS PA, and *datasetname* and *disp* are the data set name and disposition specified on the corresponding Extract panel.

External Work Data Sets
>   Specify the UNIT and SPACE attributes for the External Work Data Sets which may be required by the following:

- Performance List Extended report
- Performance Summary report (optional)
- Cross-System Work report and extract
- Transaction Group report
- BTS report
- Workload Activity report (possibly)
- DB2 report
- System Logger report
- Export extract (optional for Summary Form)

These work data sets are temporary sequential data sets used by CICS PA to store records passed to the external SORT facility. You do not need to specify the DCB attributes as CICS PA sets the appropriate DCB at Report Set run time.

CICS PA provides default settings. To reset to the default, erase the field then press Enter.

When the CICS PA dialog builds the Report Set JCL, the specified allocation settings are appended to a statement of the form:

```
//CPAXWnnn  DD  DISP=(NEW,DELETE),
```

where *nnn* is **001-999** to uniquely identify each data set.

Sort Work Data Sets

Specify the UNIT and SPACE attributes for the Sort Work Data Sets which may be required by the following:
- Performance List Extended report
- Performance Summary report (optional)
- Cross-System Work report and extract
- Transaction Group report
- BTS report
- Workload Activity report (possibly)
- DB2 report
- System Logger report
- Export extract (optional for Summary Form)

These work data sets are temporary sequential data sets used by the SORT facility.

CICS PA provides default settings. To reset to the default, erase the field then press Enter.

When the CICS PA dialog builds the Report Set JCL, the specified allocation settings are appended to a statement of the form:

```
//CPASWKnn  DD  DISP=(NEW,DELETE),
```

where *nn* is **01-04** to uniquely identify each data set.

CICS PA Control Data Sets

To work with the CICS PA primary components, Report Sets, Report Forms, and Object Lists, you must first identify the data sets where they are stored. These are called the CICS PA Control Data Sets.

To specify the control data sets, select option 3 **CICS PA Control Data Sets** from the Profile Options Menu, or enter CDS from the command line anywhere in the CICS PA dialog.

CICS PA Control Data Sets

```
   File  Options  Help
 ------------------------------------------------------------------------
                        CICS PA Control Data Sets
 Command ===>

 Specify the names of the CICS PA Control Data Sets.

 Report Sets  . . . 'xxxx.CICSPA.RSET'_____   +
 Report Forms . . . 'xxxx.CICSPA.FORM'_____   +
 Object Lists . . . 'xxxx.CICSPA.OBJL'_____   +

 Missing Data Sets Option:
 1  1. Allocate now
    2. Allocate when required



  F1=Help     F3=Exit     F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 10. CICS PA Control Data Sets

Specify the name of the data sets where Report Sets, Report Forms, and Object Lists are maintained:

Report Sets   Report Sets define selections of reports and extracts and their associated options.

Report Forms Report Forms are used to tailor the format and content of particular reports and extracts.

Object Lists Object Lists are user-defined lists of objects that are defined by name and can be specified in selection criteria to provide filtering of the report data.

You can specify the same data set for all three components. However, it is recommended that each type of component is stored in a separate data set to avoid conflict with member names.

For a particular component, related definitions should share a common data set. For example, keep related Report Sets together in the one data set, related Report Forms in another, and related Object Lists in a third.

However, you can have multiple data sets for each component, such as a separate data set for each CICS subsystem or a personal data set. For each component, only one data set at a time is used by the dialog. That is, there is only one current Report Sets data set, one current Report Forms data set, and one current Object Lists data set. To change the current data set, enter the data set name or press **Prompt** (F4) to select from a list of data sets previously used.

If you have not previously specified a data set name, CICS PA assigns a default that you can erase or overtype.

Default Data Set Name	Explanation
'prefix.CICSPA.type'	TSO prefix and userid are the same
'prefix.userid.CICSPA.type'	TSO prefix and userid are different
'userid.CICSPA.type'	User has no TSO prefix

where *type* is RSET, FORM, or OBJL. Figure 10 shows an example of the Control Data Sets panel with the default names specified.

The control data sets must be cataloged, partitioned data sets (PDS or PDSE) with RECFM=FB and LRECL=80. You can let CICS PA create the data sets dynamically using the default attributes of `LRECL=80,BLKSIZE=6160,SPACE=(CYL,(1,1,50))`. Alternatively, you can use standard facilities such as ISPF option 3.2 Data Set Utility to create and catalog the data sets.

When specifying the data set name, standard TSO conventions apply. For example, if the TSO option **PROFILE PREFIX** is in effect, the prefix will be appended as the high-level qualifier unless the data set name is enclosed in quotes.

Specify the **Missing Data Sets Option** to tell CICS PA whether to allocate new data sets now or leave that until later when you try to perform functions that require them.

If the data set is not cataloged, a Confirm Create pop-up asks you to confirm that you want CICS PA to create the data set for you using default allocation attributes.

Maintaining CICS PA data sets

The CICS PA data sets are partitioned data sets and carry product sensitive information in the directory. You can use DFSMSdss™ utilities and data set utility IEBCOPY for maintenance purposes.

Members in these data sets are saved in a special format. Members must *not* be created or modified using facilities other than CICS PA as this can cause them to become unusable by CICS PA. Should this occur, a message similar to the following will be displayed by panels that use the member:

```
Only Report Set members in the data set are included in the list.
Some members have been excluded.
```

Ensure that you specified the correct data set name. If correct, you can use ISPF to determine the offending member or members. For example, use ISPF option 3.1 to display the list of members in the Report Sets data set. Members created by CICS PA will display with no modification details, whereas those edited using ISPF will show their modification details. To correct the situation, either:

- Use ISPF to remove (move or delete) the offending members from the data set.
- Use CICS PA facilities. When the Report Sets panel is displayed, enter **SELECT** in the command line and specify the name of the offending member. If the contents of the member are valid Report Set details, they will display on the EDIT Report Set panel. Save the Report Set and the member will appear in the list of Report Sets in the specified sort order. If it is not a valid Report Set, an error message is displayed.

CICS PA Control Data Sets

Part 2. Specifying CICS-related SMF data for reporting

CICS Performance Analyzer for z/OS processes SMF data files to produce reports and extracts and build historical databases. The chapters in this part provide an overview of the SMF data that CICS PA processes, and describe how to specify to CICS PA your SMF data files, CICS and related systems and groups.

Chapter 4. SMF data used by CICS PA

CICS PA produces reports and extracts using data normally collected by your system in MVS System Management Facility (SMF) data sets:

SMF 110, subtype 1	CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class records
SMF 110, subtypes 2, 3, 4, 5	CICS statistics and server statistics records
SMF 101	DB2 accounting records
SMF 116	WebSphere MQ accounting records
SMF 112	OMEGAMON XE for CICS records
SMF 88	System Logger records

Most CICS PA reports and extracts process CMF data. The DB2 report processes both CMF data and DB2 accounting data. The WebSphere MQ report processes only MQ accounting data. The OMEGAMON report processes only OMEGAMON XE for CICS data. The Record Selection extract processes CMF data, DB2 and MQ accounting data, System Logger data, and OMEGAMON XE for CICS data. The System Logger report and extract process only System Logger data.

CICS Monitoring Facility data (SMF 110, subtype 1)

When CICS is running and the CICS Monitoring Facility (CMF) is active, data is collected by CMF and written to the MVS System Management Facility (SMF) data set as type 110 records, subtype 1. The CMF data is subsequently analyzed offline by CICS PA.

Classes of CMF data

There are three types, or "classes", of monitoring data that you can request CMF to collect: performance class, exception class, and transaction resource class data.

You can switch CICS monitoring on or off, and change the classes of data being collected, either at CICS initialization or dynamically while CICS is running. It is preferable to start all classes of monitoring data at CICS initialization. If you activate a class of monitoring data while CICS is running, the data for that class becomes available only for transactions that are started thereafter.

CICS PA analyzes three classes of CMF data:

- **Performance class data.** Detailed transaction-level information, such as the processor and elapsed time for a transaction, or the time spent waiting for I/O. There is at least one performance record per transaction.
- **Exception class data.** Information about exceptional conditions suffered by a transaction, such as queuing for file strings, or waiting for temporary storage. This data highlights possible problems in system operation. There is one exception record for each exception condition.
- **Transaction resource class data.** Additional transaction-level information about individual Files and Temporary Storage Queues used by a transaction.

Performance Class data

Performance class data provides detailed resource-level data that can be used for accounting, performance analysis, and capacity planning. This data contains information relating to individual task resource usage, and is completed for each task when the task terminates. This information could be used periodically to calculate the charges applicable to different tasks. If you want to set up algorithms for charging users for resources used by them, you could use this class of data collection to update the charging information in your site's accounting programs.

CMF collects performance class data at system-defined event-monitoring points (EMPs) in the CICS code. You cannot relocate these EMPs, but you can add additional ones in your application programs using the EXEC CICS MONITOR command (see the *CICS Application Programming Reference* for programming information about this command). For example, you could use additional EMPs to count the number of times a certain event occurs, or to time the interval between two events. Additional EMPs are also provided in some IBM program products, such as IMS DBCTL.

For each EMP that you code in an application program, you must code a corresponding definition in the Monitoring Control Table (MCT) using DFHMCT TYPE=EMP. In the MCT, you can also use DFHMCT TYPE=RECORD to *exclude* specific system-defined performance data from a CICS run. See the *CICS Resource Definition Guide* for details of the DFHMCT macros.

Performance data records are written to a CICS performance record buffer and not passed to SMF until the buffer is full, performance class monitoring is switched off, or CICS quiesces. If CMF is deactivated or there is an immediate shutdown of CICS, the records in the buffer not yet written to SMF are lost.

You can enable performance class monitoring in either of the following ways:
- At CICS initialization. Specify MNPER=ON (together with MN=ON) in the SIT.
- Dynamically when CICS is running. Use either:
  - Master terminal command CEMT SET MONITOR ON PERF
  - API command from within an application program
    EXEC CICS SET MONITOR STATUS(ON) PERFCLASS(PERF)

Exception Class data

CMF passes an exception record directly to SMF when any of the following exception conditions encountered by a transaction is resolved:
- Wait for storage in the CDSA
- Wait for storage in the UDSA
- Wait for storage in the SDSA
- Wait for storage in the RDSA
- Wait for storage in the ECDSA
- Wait for storage in the EUDSA
- Wait for storage in the ESDSA
- Wait for storage in the ERDSA
- Wait for auxiliary temporary storage
- Wait for auxiliary temporary storage string
- Wait for auxiliary temporary storage buffer
- Wait for auxiliary temporary storage write buffer
- Wait for temporary storage queue
- Wait for temporary storage data set extension
- Wait for shared temporary storage
- Wait for shared temporary storage pool

- Wait for file string
- Wait for file buffer
- Wait for LSRPOOL string
- Wait for coupling facility data tables locking (request) slot
- Wait for coupling facility data tables non-locking (request) slot

An exception record is created each time any of the resources covered by CMF exception class monitoring becomes constrained by system bottlenecks. If performance data is also being recorded, it keeps a count of the number of exception records generated for each task and also the total time that the task was delayed due to encountering a resource shortage. The exception records can be linked to the performance data by the transaction identifier in the TASKNO and NETUOW fields in each type of record.

This data is intended to help you identify constraints that affect the performance of your transaction. The information is written to the SMF data set as soon as the task that was originally constrained has been released.

You can enable exception class monitoring in either of the following ways:
- At CICS initialization. Specify MNEXC=ON (together with MN=ON) in the SIT.
- Dynamically when CICS is running. Use either:
  - Master terminal command CEMT SET MONITOR ON EXCEPT
  - API command from within an application program
    EXEC CICS SET MONITOR STATUS(ON) EXCEPTCLASS(EXCEPT)

Transaction Resource Class data

Transaction resource class data provides additional transaction-level information about individual Files and Temporary Storage Queues used by a transaction.

The maximum number of files and temporary storage queues monitored for each transaction is limited by the FILE and TSQUEUE parameters on the DFHMCT TYPE=INITIAL macro, up to a maximum of 64 files and 64 temporary storage queues. The default is FILE=8 for files and TSQUEUE=8 for temporary storage queues. Therefore, you may need to assemble an MCT that specifies either or both FILE and TSQUEUE options if the default values are insufficient, or if you do not want to collect transaction resource data for either files or temporary storage queues. One transaction resource record is written for each transaction that is being monitored, provided the transaction accesses at least one of the resources for which monitoring data is requested, (for example, at least 1 file if you specify FILE=*number*).

Performance class data also provides information about file and temporary storage queue resource accesses, but this information in the performance record is given in total only for all files (see DFHFILE fields) and all temporary storage queues (see DFHTEMP fields). Transaction resource data breaks this information down by individual file name and temporary storage queue name, up to the maximum number specified in the MCT. It also provides elapsed times for the File Control and Temporary Storage Control events.

Transaction resource information is completed for each task when the task terminates.

You enable transaction resource class monitoring in either of the following ways:
- At CICS initialization. Specify MNRES=ON (together with MN=ON) in the SIT.
- Dynamically when CICS is running. Use either:

- Master terminal command CEMT SET MONITOR ON RESRCE
- API command from within an application program
  EXEC CICS SET MONITOR STATUS(ON) RESRCECLASS(RESRCE)

When CMF data is passed to SMF

The different classes of CICS monitoring records are not written to SMF in the same way:

- **Performance data records** are written to a performance record buffer, which is defined and controlled by CICS, as the records are produced. The performance records are passed to SMF for processing when the buffer is full, when the performance class of monitoring is switched off, and when CICS itself quiesces. When monitoring itself is deactivated or when there is an immediate shutdown of CICS, the performance records are not written to SMF and the data is lost.

- **Exception data records** are passed directly to SMF when the exception condition completes. Each exception record describes one exception condition. You can link performance records with their associated exception records by matching the transaction identification number (TASKNO field) or network unit-of-work ID (NETNAME and NETUOWSX fields) in each type of record.

- **Transaction resource data records** are written to a transaction resource record buffer, which is defined and controlled by CICS, as the records are produced. The transaction resource records are passed to SMF for processing when the buffer is full; when the transaction resource class of monitoring is switched off; and when CICS itself quiesces. When monitoring itself is deactivated or when there is an immediate shutdown of CICS, the transaction resource records are not written to SMF and the data is lost.

Controlling the CICS Monitoring Facility

When CICS is initialized, you can switch the CICS monitoring facility on by specifying the system initialization parameter MN=ON. The default setting is MN=OFF. You can also select the classes of monitoring data that you want to be collected using the MNPER, MNEXC, and MNRES system initialization parameters. You can request any combination of performance class, exception class, and transaction resource class data. The class settings can be changed whether monitoring itself is ON or OFF. For more information about the monitoring system initialization parameters, refer to the *CICS System Definition Guide.*

When CICS is running, you can control the CICS monitoring facility dynamically. Just as at CICS initialization, you can switch monitoring on or off, and you can change the classes of monitoring data that are being collected. There are two ways of doing this:

1. You can use the master terminal CEMT INQUIRE and SET MONITOR command, which is described in the *CICS Supplied Transactions.*
2. You can use the EXEC CICS INQUIRE and SET MONITOR commands; programming information about these commands can be found in the *CICS System Programming Reference.*

When you activate a class of monitoring data, data is collected only for transactions that start thereafter, not transactions already active. You cannot change the classes of monitoring data collected for a transaction after it has started. It is often preferable, particularly for long-running transactions, to start all classes of monitoring data at CICS initialization.

Event Monitoring Points

CICS monitoring data is collected at system-defined event monitoring points (EMPs) in the CICS code. Although you cannot relocate these monitoring points, you can choose which *classes* of monitoring data that you want to be collected. Programming information about CICS monitoring can be found in the *CICS Application Programming Reference* and the *CICS Customization Guide.*

If you want to gather more performance class data than is provided at the system-defined event monitoring points, you can code additional EMPs in your application programs, from within task-related user exit or from global user exits. At these points you can add or change up to 16384 bytes of user data within each performance record. Up to this maximum of 16384 bytes you can have, for each ENTRYNAME qualifier, any combination of the following:
- Between 0 and 256 counters
- Between 0 and 256 clocks
- A single 8196-byte character string.

You could use these additional EMPs to count the number of times a certain event occurs, or to time the interval between two events. If the performance class was active when a transaction was started, but was not active when a user EMP was issued, the operations defined in that user EMP would still execute on that transaction's monitoring area. The DELIVER option would result in a loss of data at this point, because the generated performance record cannot be output while the performance class is not active. If the performance class was not active when a transaction was started, the user EMP would have no effect.

User EMPs can use the EXEC CICS MONITOR command. For programming information about this command, refer to the *CICS Application Programming Reference.*

Additional EMPs are defined in some IBM program products, such as IMS DBCTL. From the CICS point of view, these are like any other user-defined EMP. EMPs in user applications and in IBM program products are defined by a decimal number. The numbers 1 through 199 are available for EMPs in user application, and the numbers from 200 through 255 are for use in IBM program products. In addition, the numbers can be qualified with an *entry name* so that you can use each number more than once. For example, PROGA.1, PROGB.1 and PROGC.1, identify three different EMPs because they have different entry names.

For each user-defined EMP there must be a corresponding monitoring control table (MCT) entry, which has the same entry name and identification number as the EMP that it describes.

You do not have to assign entry names and numbers to system-defined EMPs, and you do not have to code MCT entries for them.

Here are some ideas about how you might make use of user fields provided using the CICS monitoring facility:
- If you want to time how long it takes to do a table lookup routine within an application, code an EMP with, say, ID=50 just before the table lookup routine and an EMP with ID=51 just after the routine. The system programmer codes a TYPE=EMP operand in the MCT for ID=50 to start user clock 1. You also code a TYPE=EMP operand for ID=51 to stop user clock 1. The application then executes. When EMP 50 is processed, user clock 1 is started. When EMP 51 is processed, user clock 1 is stopped.

- One user field could be used to accumulate an installation accounting unit. For example, you might count different amounts for different types of transaction. Or, in a browsing application, you might count 1 unit for each record scanned and not selected, and 3 units for each record selected.

  You can also treat the fullword count fields as 32-bit flag fields to indicate special situations, for example, out-of-line situations in the applications, operator errors, and so on. The CICS monitoring facility includes facilities to turn individual bits or groups of bits on or off in these count fields.

- The performance clocks can be used for accumulating the time taken for some sort of I/O operation. This is usually any waiting time for the transaction to regain control after the requested operation has completed. Because periods are counted as well, you can get the average time waiting for the I/O operation as well as the total waiting time. If you want to highlight an unusually long individual case, set a flag on in a user count as explained above.

- One use of the performance character string is for systems in which one transaction ID is used for widely differing functions. The application can enter a subsidiary ID into the string to indicate which particular variant of the transaction applies in each case.

  Some users have a single transaction ID so that all user input is routed through a common prologue program for security checking or some other purpose, for example. In this case, it is very easy to record the subtransaction identifier in this prologue. (However, it is equally possible to route transactions with different identifiers to the same program, in which case this technique is not necessary.)

Application Naming and Event Monitoring Points

You can also use application naming event monitoring points. Application naming is an enabling function that allows your application programs to invoke special CICS event monitoring points. These special EMPs allow you to include additional task identification information (an alternative Transaction ID and Program name) in your CMF performance records.

You can use the application naming EMPs that are generated for you automatically when you specify APPLNAME=YES in the DFHMCT TYPE=INITIAL macro. The generated data is:

- The application naming Transaction ID, taken from the first 4 bytes of the 12 byte APPLNAME field.
- The application naming Program name, taken from the last 8 bytes of the 12 byte APPLNAME field.

For information about the APPLNAME parameter that you use to enable application naming support, see the *CICS Resource Definition Guide.*

The Monitoring Control Table (MCT)

The monitoring control table (MCT) is used to tell CICS:

- The type of resource for which you want to collect transaction resource monitoring data. Available resource types are Files and Temporary Storage Queues (see "DFHMCT TYPE=INITIAL" on page 43).
- To enable application naming support, which makes available the CICS-generated DFHAPPL EMPs to your application programs (see "DFHMCT TYPE=INITIAL" on page 43).
- About any user event monitoring points (EMPs) that you have coded in your application programs and the data that is to be collected or manipulated at these points (see "DFHMCT TYPE=EMP" on page 43).

- That you want certain CICS system-defined performance class data fields to not be recorded by CICS (see "DFHMCT TYPE=RECORD").

IMS DBCTL users can collect DBCTL statistics in the CMF performance class records by including the DFH$MCTD copy member in the MCT definition.

Full details of the MCT are provided in the *CICS Resource Definition Guide.* Examples of MCT coding are included with the programming information in the *CICS Customization Guide.*

DFHMCT TYPE=INITIAL

You use the DFHMCT TYPE=INITIAL macro to indicate whether you want application naming support and transaction resource monitoring.

For information about the APPLNAME, FILE and TSQUEUE parameters that control these facilities, see the *CICS Resource Definition Guide.*

DFHMCT TYPE=EMP

There must be a DFHMCT TYPE=EMP macro definition for each user-code event monitoring point (EMP). This macro has an ID operand, whose value must be made up of the ENTRYNAME and POINT values specified on the EXEC CICS MONITOR command. The PERFORM operand of the DFHMCT TYPE=EMP macro defines to CICS for the specified user EMP, the user fields (counts, clocks or characters) and the operations that CICS is to perform on them when the user event monitoring point is invoked.

DFHMCT TYPE=RECORD

The DFHMCT TYPE=RECORD macro allows you to *exclude* specific system-defined performance class data fields from a CICS run. Table 1 shows the default length of the performance class monitoring records for each CICS release supported by CICS PA, without taking into account any user data that may be added, or any excluded fields.

Table 1. Default performance record length by CICS release

CICS Release	Record Length
CICS Transaction Server for OS/390 Version 1.3	1288 bytes
CICS Transaction Server for z/OS Version 2.1	1564 bytes
CICS Transaction Server for z/OS Version 2.2	1610 bytes
CICS Transaction Server for z/OS Version 2.3	1692 bytes
CICS Transaction Server for z/OS Version 3.1	1848 bytes
CICS Transaction Server for z/OS Version 3.2	2352 bytes

Each field of the performance class data that is gathered at the system-defined EMPs belongs to a group of fields that has a specific group identifier. Each performance data field also has its own numeric identifier that is unique within the group identifier. For example, the transaction sequence number field in a performance class record belongs to group DFHTASK, and has a numeric identifier of 031. Using these identifiers, you can exclude specific fields or groups of fields, and reduce the size of the performance class records.

Sample MCTs

Four sample monitoring control tables are provided in the CICS sample library:

DFHMCTT$ For terminal-owning regions (TORs)

DFHMCTA\$	For application-owning regions (AORs)
DFHMCTD\$	For application-owning regions (AORs with DBCTL)
DFHMCTF\$	For file-owning regions (FORs)

These samples show how to use the EXCLUDE and INCLUDE operands to reduce the size of the performance class record in order to reduce the volume of data written by CICS to SMF.

Required CMF fields for CICS PA

If you are using the CICS Monitoring Control Table (MCT) EXCLUDE/INCLUDE parameters to reduce the size of the performance class record, you must ensure that the data fields required for some of the CICS PA reports and extracts are not excluded. These reports and extracts are:
- Cross-System Work report and extract
- Transaction Group report
- BTS report
- Workload Activity report
- DB2 report

Refer to the *CICS Performance Analyzer for z/OS Report Reference* for the list of required CMF fields for each of these reports.

CICS Statistics data (SMF 110, subtypes 2, 3, 4, 5)

When CICS is running, statistics data is written to the SMF data set as type 110 records with the following subtypes:

2	Statistics
3	Shared Temporary Storage Server Statistics
4	Coupling Facility Data Table Server Statistics
5	Named Counter Sequence Number Server Statistics

Statistics data is subsequently analyzed offline by CICS PA.

DB2 accounting data (SMF 101 records)

DB2 accounting data is processed by the CICS PA DB2 report and Record Selection extract. DB2 accounting data is written by DB2 as SMF type 101 records.

DB2 accounting trace

The DB2 accounting trace provides information related to application programs, including:
- Start and stop times
- Number of commits and aborts
- Number of times certain SQL statements are issued
- Number of buffer pool requests
- Counts of certain locking events
- Processor resources consumed
- Thread wait times for various events
- RID pool processing
- Distributed processing
- Resource limit facility statistics

The DB2 accounting trace begins collecting this data at successful thread allocation to DB2. It writes a completed record when the thread terminates or when the authorization ID changes.

DB2 accounting records are produced when a thread is terminated or sign-on occurs. This means that the period reported in the DB2 accounting record is the time between start or user sign-on (if reusing a thread previously used by another user) and thread termination or another sign-on. You can use the ACCOUNTREC(TXID) parameter in the DB2ENTRY or DB2CONN to cause a DB2 accounting record to be produced when the transaction ID changes, and when the thread terminates or another sign-on occurs.

For thread reuse, this means that many users are included in the same record, which can cause difficulties for both accounting and problem determination. The ACCOUNTREC(TASK) or ACCOUNTREC(UOW) settings in a DB2ENTRY or DB2CONN provide more granularity. This is because a record is produced for each user. It involves the passing of a token between CICS and DB2, which is present in both CICS and DB2 traces. ACCOUNTREC(TASK) ensures that there is a minimum of one accounting record for each task. There can be more depending on thread reuse.

The CICS PA DB2 report only supports ACCOUNTREC(TASK) and ACCOUNTREC(UOW).

For more information about accounting and monitoring in a CICS DB2 environment, refer to the *CICS DB2 Guide.* For more information about setting up DB2 accounting, refer to the *DB2 UDB for OS/390 and z/OS Administration Guide.*

Accounting for processor usage in a CICS DB2 environment

The processor times reported in the DB2 accounting records are the TCB time for the thread TCB running code in CICS or in the DB2 address space, using cross-memory services; and the SRB time for work scheduled in CICS.

The DB2 accounting trace can be started with CLASS 1, CLASS 2, or CLASS 3. However, CLASS 1 must always be active to externalize the information collected by activating CLASS 2, CLASS 3, or both classes. CLASS 1 (the default) results in accounting data being accumulated by several DB2 components during normal execution. This data is then collected to write the DB2 accounting record. The data collection does not involve any overhead of individual event tracing. CLASS 2 and CLASS 3 activate many additional trace points. Every occurrence of these events is traced internally, the additional total statistics computed and written to the DB2 accounting record.

For accounting CLASS 1, a task processor timer is created when the task control block (TCB) is attached. When a thread to DB2 starts, the timer value is saved. When the thread is terminated (or the authorization ID is changed), then the timer is checked again. Both the timer start and end values are recorded in the DB2 accounting record.

For accounting CLASS 2, the timer is checked on every entry and exit from DB2 to record the 'IN DB2' time in the DB2 accounting record. In this case, it is the difference that is stored in the record.

For accounting CLASS 3, the I/O elapsed time and lock and latch suspension time spent 'IN DB2' are collected and written to the DB2 accounting record.

DB2 accounting data (SMF 101)

> **Note:** In the open transaction environment, calculating CICS and DB2 processor times is dependent on whether CICS is connected to DB2 Version 6 or later, or connected to DB2 Version 5 or earlier. For more information, refer to the *CICS DB2 Guide.*

WebSphere MQ accounting data (SMF 116 records)

WebSphere MQ accounting data is processed by the CICS PA WebSphere MQ report and Record Selection extract. MQ accounting data is written by WebSphere MQ as SMF type 116 records.

Accounting for processor usage in a CICS MQ environment

WebSphere MQ accounting information can be collected for three subtypes:

0 Message manager accounting records (how much of the central processing unit (CPU) was spent processing WebSphere MQ API calls and the number of MQPUT and MQGET calls). This information is produced when a named task disconnects from WebSphere MQ. The information contained within the record may cover many hours.

1 Accounting data for each task, at thread and queue level.

2 Additional queue-level accounting data (if the task uses more queues than can fit in the subtype 1 record).

Subtype 0 is produced with trace class 1. Subtypes 1 and 2 are produced with trace class 3.

MQ accounting trace

You can start the WebSphere MQ trace facility at any time by issuing the WebSphere MQ START TRACE command.

Accounting data can be lost if the accounting trace is started or stopped while applications are running. To collect accounting data successfully, the following conditions must apply:

- The accounting trace must be active when an application starts. It must still be active when the application finishes.
- If the accounting trace is stopped, any accounting data collection that was active stops.

You can also start collecting some MQ accounting data automatically if you specify YES in the SMFACCT (SMF ACCOUNTING) parameters of the CSQ6SYSP macro.

You cannot use this method to start collecting class 3 accounting information (thread-level and queue-level accounting). You must use the START TRACE command to do this. However, you can include the command in your CSQINP2 input data set so that the trace is started automatically when you start your queue manager.

For more information about setting up WebSphere MQ accounting, refer to the *WebSphere MQ for z/OS System Setup Guide,* SC34-6052.

OMEGAMON XE for CICS data (SMF 112 records)

OMEGAMON XE for CICS data is processed by the CICS PA OMEGAMON report and the Record Selection extract. OMEGAMON XE for CICS writes this data as SMF type 112 records.

For more information about these records, refer to the *IBM Tivoli OMEGAMON II for CICS Configuration and Customization Guide*, GC32-1981.

System Logger data (SMF 88 records)

System Logger data is processed by the CICS PA System Logger report. The MVS System Logger writes SMF type 88 records to record the System Logger activity of a single system in a sysplex. For capacity planning purposes, we recommend that you view the steady-state performance requirements of an application. Various flags in the SMF type 88 record highlight exception scenarios for additional analysis or changes in report processing.

Record type 88 focuses on the logstream data for a system in a sysplex, including use of interim storage. Interim storage is where log data is initially written, before being written to direct access storage device (DASD) log data sets. You can quickly access data in interim storage without incurring DASD I/O. In a coupling facility logstream, interim storage for log data is in coupling facility list structures. In a DASD-only logstream, interim storage for log data is contained in local storage buffers on the system and duplexed to staging data sets. Using record type 88 can help an installation avoid the STRUCTURE FULL exception, and perform other tuning, capacity planning analysis, or both.

Given a specific logstream, a record type 88 summarizes all of that logstream's activity on that system, as long as at least one address space is connected to the logstream on that system. If no System Logger write activity is performed on the logstream during a particular SMF interval, a record is produced showing zero for the various System Logger activity total fields.

The System Logger SMF record is cut for all logstreams connected at the expiration of the SMF global recording interval. Record type 88 is also triggered by the disconnection of the last logstream on that system.

SMF fields relating to resource events, either structure full or staging data set full conditions, should be handled depending on:
- Whether the resource is shared sysplex-wide and each system will take action
- Whether the resource is shared sysplex-wide but only one system will take action
- Whether the resource is consumed on a system-local basis

To obtain a sysplex-wide view of System Logger activity, correct processing for most SMF 88 data fields is to sum the field contents for the target interval across all the SMF 88 records produced in the sysplex. There are, however, exceptions to this rule. Because each system must take its own action — that is, wait for an ENF signal indicating that System Logger is available — an analysis program should use the maximum value for these fields: SMF88ERI, SMF88ERC, and SMF88ESF. For example, if a structure rebuild is initiated in a sysplex with three systems, the event is recorded on all three systems. The correct number of structure rebuild initiations is not three, but one or the maximum number provided SMF88ERI.

For DASD-only logstreams, staging data sets are a required part of the logstream configuration. For coupling facility logstreams, use of staging data sets implies a

trade-off between performance workload and data integrity. You should try to tune the staging data set size to minimize the number of Staging_Dataset_Threshold_Hit conditions. Without this type of tuning, such conditions can impact performance during staging data set processing. Only an installation can determine what the proper trade-off between performance and data integrity should be.

Because System Logger maintains interim storage differently for coupling facility based logstream versus DASD-only logstreams, the difference is reflected in the SMF record 88 report:

- For a coupling facility based logstream, the Structure (Interim Storage) section of the record 88 report shows information about the usage of coupling facility structure space allocated for a logstream and the flow of log data through the structure.

- For a DASD-only logstream, the Structure (Interim Storage) section of the record 88 report shows information about usage of staging dataset space and the flow of data through the staging data set for the logstream.

Not all fields in the Structure (Interim Storage) section of the record 88 report apply to DASD-only logstreams. For a DASD-only logstream, fields that do not apply contain zeros. The SMF88STN field contains *DASDONLY* for a DASD-only log stream because there is no structure name.

Preparing SMF data for CICS PA processing

CICS PA processes non-active SMF data sets. There is no special preparation required for CICS PA other than to dump the active data sets into non-VSAM data sets at an appropriate time. Then define these output data sets to CICS PA as the input data sets for report processing.

Unloading SMF records

After all the SMF data from the CICS region is on the active SMF data set, you need to dump this data to an inactive SMF data set. First you switch the recording of SMF data from one data set to another. All SMF data in storage is written out before the transfer is made. This switch is performed by issuing the /I SMF operator command. The switch of SMF data sets takes place automatically when the active SMF data set becomes full.

To dump the SMF data set, use the SMF dump program (IFASMFDP). This program transfers the contents of the active SMF data set to an output data set, then resets the status of the dumped data set to ALTERNATE so that SMF can use it again for recording data. For more information about the IFASMFDP program, see the *z/OS MVS System Management Facilities (SMF)*.

The sample job shown in Figure 11 on page 49 is an example of using the SMF program IFASMFDP to unload the SMF 110 records for offline processing by CICS PA.

```
//SMFJOB    JOB (Job Accounting)
//SMFDUMP   EXEC PGM=IFASMFDP,REGION=0M
//INDD1     DD DSN=SYS1.MV2C.MANA,DISP=SHR,AMP=('BUFSP=131072')
//INDD2     DD DSN=SYS1.MV2C.MANB,DISP=SHR,AMP=('BUFSP=131072')
//INDD3     DD DSN=SYS1.MV2D.MANA,DISP=SHR,AMP=('BUFSP=131072')
//INDD4     DD DSN=SYS1.MV2D.MANB,DISP=SHR,AMP=('BUFSP=131072')
//OUTDD1    DD DSN=CICS.CMF.DAILY(0),
//             DISP=(MOD,CATLG),SPACE=(CYL,(25,5)),UNIT=SYSDA
//OUTDD2    DD DSN=CICS.SMF.DAILY(0),
//             DISP=(MOD,CATLG),SPACE=(CYL,(25,5)),UNIT=SYSDA
//SYSPRINT DD SYSOUT=A
//SYSIN    DD *
     INDD(INDD1,OPTIONS(DUMP))
     INDD(INDD2,OPTIONS(DUMP))
     INDD(INDD3,OPTIONS(DUMP))
     INDD(INDD4,OPTIONS(DUMP))
     OUTDD(OUTDD1,TYPE(110))
     OUTDD(OUTDD2,TYPE(88,101,116))
/*
//
```

Figure 11. Sample JCL using the SMF Unload utility

CICS PA System Definitions and SMF Data Take-Up

Before you request CICS PA reports and extracts, you must first define the CICS systems (generic APPLIDs) on which you want to report. Depending on your reporting requirements, you also may need to define DB2 subsystems, MQ subsystems, and MVS System Loggers. Then specify the SMF data sets for these systems (CICS, DB2, MQ, Logger) or the MVS System (Image) where they execute, or both.

An easy way to do this is to let CICS PA set up your system definitions by using the Take-up facility. This facility extracts the system and data set details directly from the SMF files. For more information, refer to "Personal Take-Up from SMF File" on page 95.

Optionally, you can then define groups of systems for reporting purposes. For example, systems that connect via interregion communication/multiregion operation (IRC/MRO) or intersystem communication/advanced program-to-program communication (ISC/APPC).

Dictionary records for CMF Performance Class data

A dictionary record holds definitional information about each data field in a performance class data record. It contains information for predefined CICS fields, and from any user fields in the Monitoring Control Table (MCT) specified for the CICS run.

When CICS monitoring is switched on, and you activate the monitoring performance class (MNPER=ON), CICS first writes a performance class dictionary record to the current SMF data set, and then begins to write the monitoring performance class data records. A new dictionary record, which always precedes the monitoring performance class data it relates to, is written whenever the user:

- Starts CICS with the performance class active, and CICS monitoring on.
- Changes the status of the monitoring performance class from inactive to active, with CICS monitoring on. If monitoring is off and the monitoring performance

class is switched from inactive to active, a dictionary record is scheduled to be written the next time monitoring is activated.

However, if SMF switches data sets during the period when CICS monitoring is writing performance class data, CICS does not write a new dictionary record, and therefore a CICS performance dictionary record is not the first monitoring performance record on the new SMF data set.

How CICS PA uses dictionary records

When processing performance class data, CICS PA requires a dictionary record that relates to the data being processed before attempting to analyze the data.

If the dictionary record is missing from the SMF data set, CICS PA can use the default dictionary record for the release of the CICS system being processed. This is usually adequate, so there is nothing more you need to do in this regard.

However if you want to report user fields, you must ensure that there is a matching dictionary record for the monitoring data for each APPLID that you wish to process. You can use the CICS PA dialog to do this.

Using CICS PA to create dictionary records: You can use the CICS PA dialog to create a dictionary record when you define the CICS System (APPLID). Figure 21 on page 67 shows the CICS System panel where you can do this. Specify a dictionary data set name then select **Dictionary** in the action bar to write the dictionary record. CICS PA includes the dictionary data set in the report JCL in the **CPADICTR DD** statement.

Order of precedence: When processing performance class data, CICS PA may read more than one dictionary record. CICS PA applies the following order of precedence to determine the dictionary record to use to analyze the data:
1. SMF file
2. CPADICTR DD statement
3. Default

That is, if the SMF data set that contains the performance record being processed has a dictionary record, then CICS PA uses that dictionary record. CICS PA uses the last dictionary record read and disregards any previously read. If the dictionary record is missing, then CICS PA uses the dictionary record in the CPADICTR data set. If that too is missing, then CICS PA uses the default dictionary record for the release of the CICS system being processed.

Using DFHMNDUP to create dictionary records

Alternatively, you can write your own job to create dictionary records. The remainder of this section describes how to do this using the CICS-supplied monitoring dictionary utility program, DFHMNDUP, to write a dictionary record for a specific APPLID to a sequential data set. This discussion on DFHMNDUP is included for historical interest only. ***You do not need to do any of it, as CICS PA does it more appropriately.***

Figure 12 on page 51 shows an example of using the dictionary utility program to create a dictionary record for APPLID CICSPROD.

```
//MNDUPJOB JOB (Job Accounting)
//MNDUP    EXEC PGM=DFHMNDUP,REGION=0M
//STEPLIB  DD  DSN=CICS.SDFHLOAD,DISP=SHR
//SYSUT4   DD  DSN=userid.applid.MNDUPREC,DISP=(NEW,CATLG),
//             UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSPRINT DD  SYSOUT=A
//SYSUDUMP DD  SYSOUT=A
//SYSIN    DD  *
MCT=NO
SYSID=MVS1
GAPPLID=CICSPROD
SAPPLID=CICSPROD
/*
//
```

Figure 12. Sample job stream to run the DFHMNDUP utility

Notes:

1. In addition to the CICS library containing the DFHMNDUP program, the STEPLIB concatenation must also include the library that contains any monitoring control table (MCT) that you specify on the MCT parameter.

2. The dictionary record is written to the data set specified by the SYSUT4 DD statement.

3. You may decide to keep a permanent dictionary data set, one for each CICS region, to hold the dictionary record. Specify the DISP parameter according to whether the data set already exists, or a new one is to be created and cataloged.

4. Control information for the DFHMNDUP program is provided in the SYSIN data set so that it can generate the correct dictionary record for the performance class data you are processing.

Extracting and printing the dictionary records

A possible user error that results in CICS PA producing large numbers of messages or incomplete reports can be caused by inconsistencies between the dictionary records and its corresponding performance data records. This typically occurs when you create the dictionary records using the dictionary utility program, DFHMNDUP.

Figure 13 on page 52 shows a sample job that can be used to extract the dictionary records from the SMF input file(s) and then use the CICS supplied monitoring sample program DFH$MOLS to print *only* the dictionary records.

Preparing SMF data for CICS PA processing

```
//DICTPRNT JOB (Job Accounting)
//DICTCOPY EXEC PGM=SORT,REGION=0M
//SORTIN   DD  DSN=smf110.data.set.name,DISP=SHR
//SORTOUT  DD  DSN=&&TEMP,DISP=(NEW,PASS),UNIT=SYSDA,SPACE=(TRK,(5,2))
//DFSMSG   DD  SYSOUT=A
//SYSOUT   DD  SYSOUT=A
//SORTDIAG DD  SYSOUT=A
//SYSIN    DD  *
 OPTION COPY,VLSHRT
 RECORD TYPE=V
 INCLUDE COND=(6,1,FI,EQ,110,AND,
              23,2,BI,EQ,X'0001',AND,67,2,BI,EQ,X'0001')
 END
/*
//MOLSPRNT EXEC PGM=DFH$MOLS,REGION=0M,COND=(5,LT,DICTCOPY)
//STEPLIB  DD  DSN=CICSTS23.CICS.SDHFLOAD,DISP=SHR
//INPUT    DD  DSN=&&TEMP,DISP=(OLD,DELETE)
//SYSOUT   DD  SYSOUT=A
//SYSPRINT DD  SYSOUT=A,DCB=BLKSIZE=133
//SYSABEND DD  SYSOUT=A,DCB=BLKSIZE=133
//SYSUDUMP DD  SYSOUT=A,DCB=BLKSIZE=133
//SYSIN    DD  *
* Print the dictionary records only
PRINT DIC
* Disable the date/time sequence checking
TIMEOFF
/*
//
```

Figure 13. Sample job to extract and print the Dictionary records

In this example, the DFH$MOLS program will abend with the following message:

```
IEF450I DICTPRNT MOLSPRNT - ABEND=S000 U0107 REASON=00000000
```

and the following message will be printed at the end of the dictionary report produced by DFH$MOLS:

```
NO MONITORING RECORDS WERE SELECTED FOR PROCESSING; REPORT IS TERMINATED
```

For more information on the dictionary utility program DFHMNDUP and the monitoring sample program DFH$MOLS, see the *CICS Operations and Utilities Guide.*

Chapter 5. Personal System Definitions

The systems and data files that you want to report against must be defined to CICS PA. The Personal System Definitions Menu provides options to do this. Typically your personal definitions are maintained by you and used by you for reporting. They are saved in your Personal Profile Library (CICS PA Settings). This contrasts with Shared System Definitions which are typically maintained by a central administrator and used by all users for reporting. They are saved in the HDB Register.

To define your systems, files, and groups, select option 1 **Personal Systems** from the Primary Option Menu. Alternatively, you can select **Systems** in the action bar of reporting panels, or enter **SYSDEFS** in the command line anywhere in the dialog.

Personal System Definitions overview

Use **Personal System Definitions** to define your CICS (and other related) systems and their SMF files.

Before you can run reports using Personal System Definitions, you must first define the CICS systems that you want to report against. You can fast-track this process by using **Take-up.** Simply specify an SMF file that contains your CMF data and CICS PA will build your system definitions for you based on the CICS systems that have CMF records in the file.

To walk through an example of how to do this, refer to "Example: Working with Personal Systems" on page 98.

CICS PA uses your System Definitions when you:

1. Run (submit) your report requests.
   At Report Set run time, CICS PA automatically generates JCL that includes:
   - Report requests for the CICS (and other related) systems that you select
   - DD statements for the required SMF files
2. Create a new Report Form.
   The version of your CICS system determines which CMF fields are available for reporting and your MCT specification allows you to incorporate user fields into your reports.
3. Create Cross-System Work Extract data sets.
   Your MCT specification allows you to incorporate user fields into your extracts.

System Definitions is a menu driven facility that allows you to:

1. Define your CICS and associated DB2, MQ and Logger **Systems** and define the **Images** (MVS systems) where they run
2. Maintain the **SMF files** that contain data for these systems
3. Define **Groups** that enable you to connect systems for consolidated reporting
4. Use **Take-up** to populate your System Definitions from an SMF file

Access this facility by selecting option 1 **Personal Systems** from the Primary Option Menu. When first invoked, the System Definitions Menu is displayed as shown in Figure 14 on page 54. You can choose to bypass this menu in the future.

Personal System Definitions

```
  File  Confirm  Options  Help
 ----------------------------------------------------------
                Personal System Definitions Menu
 Command ===> _____

 Select an option then press Enter

 1  1. Define Systems, SMF Files and Groups
 ⎺    2. Maintain SMF Files
       3. Maintain Group definitions
       4. Take-up from SMF File

 Enter "/" to select option
 _   Always go directly to Systems View
```

Figure 14. Personal System Definitions: Menu

Systems

The systems specified in System Definitions are your CICS and other related systems that are eligible for report processing by CICS PA.

Each system is identified by its name, type, and optionally, its image:

Name   The primary system identifier.

Type   Five system types are supported:

> **CICS**   CICS region. The system name is the CICS generic APPLID.
>
> **Image**   MVS Image where your CICS regions run. The system name is usually the MVS SMF ID but it can be a unique arbitrary name.
>
> **DB2**   DB2 subsystem that services your CICS regions. The system name is the DB2 subsystem ID.
>
> **MQ**   WebSphere MQ subsystem that services your CICS regions. The system name is the MQ subsystem ID.
>
> **Logger**   MVS System Logger used by your CICS regions. The system name is an arbitrary name that represents the MVS System Logger.

Image   Optionally, CICS, DB2, MQ and Logger systems can be further qualified by specifying the Image (MVS SMF ID) where they run.

CICS System

CICS systems define the CICS regions that you wish to report against. They are identified by their CICS generic APPLID and optionally qualified by the MVS Image where they run.

CICS system names can be specified as patterns containing masking characters. For example, if your CICS development regions are called CICSD1, CICSD2, CICSD3, and their CMF data is on the same file, then you can define them once as a system called CICSD*. Then at report run-time, you can request that all CICSD* systems are processed, or any individual system matching the pattern can be requested. For example, CICSD1.

You can define SMF files to CICS systems. These files contain the CICS CMF performance class, exception class, and transaction resource class (SMF 110) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define CICS systems to Groups. This allows you to connect systems for consolidated cross-system style reporting. See "Groups" on page 57 for more information.

Image System

Image systems define the MVS systems where your CICS and other related systems run. They are usually identified by their MVS SMF ID but you can assign a unique arbitrary name to identify Images.

You can define SMF files to Image systems. These files contain the data for the CICS, DB2, MQ and Logger systems that belong to this Image. When an Image is selected for report processing, all systems with data on the Image's SMF files are reported.

Image systems have some special characteristics:

1. Images can be used to further qualify CICS, DB2, MQ and Logger systems. For example, CICS region CICSD1 runs on Image DEV1. Using Image to qualify your systems allows you to:

   - Distinguish between systems with same name but run on different images.
   - Specify your SMF files once only. When SMF files are defined to an Image, other systems that belong to the Image use these files if they don't have their own specified. This saves the duplication of assigning files to every system that needs them.

2. Images implicitly define all the systems that run on them. This allows you to just define the Image without defining the CICS and other systems that run on it. You can request reporting for any CICS system qualified by the Image but not explicitly defined in your System Definitions. CICS PA assumes that the report data for the CICS system is contained in the Image's files.

   For example, CICS regions CICSP1, CICSP2 and CICSP3 run on MVS Image MVS1. You can decide to only define Image MVS1 to CICS PA and not the CICS regions. The regions are still eligible for reporting. When you request reporting for CICS system CICSP1 qualified by Image MVS1, report requests for APPLID CICSP1 will be generated and CICS PA will assume that the data for CICSP1 is contained in the SMF Files defined to Image MVS1.

DB2 System

DB2 systems define the DB2 subsystems used by your CICS regions. They are identified by their DB2 subsystem ID and optionally qualified by the MVS Image where they run.

Defining your DB2 subsystems allows you to run the DB2 report which presents a consolidated picture of DB2 resource usage by your CICS transactions.

You can define SMF files to DB2 systems. These files contain the DB2 accounting (SMF 101) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define DB2 systems to Groups. This allows you to connect a DB2 system to the CICS systems it services. See "Groups" on page 57 for more information.

MQ System

MQ systems define the WebSphere MQ subsystems used by your CICS regions. They are identified by their MQ subsystem ID and optionally qualified by the MVS Image where they run.

Defining your MQ subsystems allows you to run the MQ report which presents a consolidated picture of MQ resource usage by your CICS transactions.

You can define SMF files to MQ systems. These files contain the MQ accounting (SMF 116) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define MQ systems to Groups. This allows you to connect an MQ subsystem to the CICS systems it services. See "Groups" on page 57 for more information.

Logger System

Logger systems define the MVS System Loggers used by your CICS regions that you wish to report against. They are identified by an arbitrary name and optionally qualified by the MVS Image where they run. The Logger system name is not a formal name associated with any aspect of your CICS System Logger set-up such as Logstream name, but simply a name you choose to identify this system by.

Defining Logger systems allows you to run the Logger report which presents a detailed analysis of the Logstreams and coupling facilities used by your CICS regions.

You can define SMF files to Logger systems. These files contain the System Logger (SMF 88) data for that system. When this system is requested for reporting, CICS PA builds JCL that includes DD statements for these files.

You can also define Logger systems to Groups. This allows you to connect a Logger system to the CICS systems it services. See "Groups" on page 57 for more information.

SMF Files

SMF Files are data sets that contain the SMF records for your systems. See "Systems" on page 54 for the type of records expected in the SMF file for each system type.

You define your SMF Files to the system(s) that they have data for. If your SMF File contains data for all systems running on an MVS Image, then define the file once to the Image system. Then all systems that run on that Image (CICS, DB2, MQ and Logger) will use the Image's file specification.

System Definitions has an SMF File maintenance facility that allows you to view all the SMF files you have defined and the systems that use each file. See "Maintaining Personal SMF Files" on page 83 for more information.

If you choose not to specify your SMF files in System Definitions initially, CICS PA will give you the opportunity to specify them at Report Set run time. Depending on your run-time options, you can either:
- Link to System Definitions to specify the required files, or

- Request that CICS PA generate report JCL with the SMF file data set names unresolved. Before submitting, you can specify the data set names directly in the JCL.

Groups

A Group is a collection of systems that require consolidated reporting. Instead of running a report against a particular System, you can run the report against a Group. This provides a facility for consolidated cross-system style reporting.

Some practical uses for Groups include:
- CICS systems that are connected by IRC/MRO or ISC/APPC — specify your TOR, AOR, FOR and DOR regions in a Group for cross-system reporting.
- CICS systems that use DB2 — specify your CICS DOR region and DB2 subsystem in a Group for DB2 reporting.
- CICS systems that use WebSphere MQ — specify your CICS region and MQ subsystem in a Group for MQ reporting.
- CICS systems that require System Logger reporting — specify your CICS region and Logger systems in a Group for Logger reporting.

Systems can belong to more than one Group.

System Definitions has a Group maintenance facility that allows you to view all the Groups that you have defined and the systems that belong to each Group. See "Maintaining Personal Groups" on page 90 for more information.

Take-up

You can use the take-up facility to fast-track the process of defining your systems and files. By specifying an SMF file that contains your CMF data, CICS PA will build your system definitions for you based on the CICS systems that have CMF records in the file. See "Personal Take-Up from SMF File" on page 95 for more information.

Mass Updating Personal CICS System Definitions

Suppose that, some time ago, you created CICS System Definitions in CICS PA, and specified their CICS VRM as 630 (CICS Transaction Server Version 2.3), matching the current system environment at the time. Perhaps you also specified version-specific data set names for the MCT and SDFHLOAD libraries. Now you have upgraded to a later version of CICS TS, and you want to upgrade your CICS System Definitions in CICS PA to match this change in your system environment. Rather than selecting and then editing each CICS System Definition individually, you can upgrade several (or all of them) together.

1. On the list panel of System Definitions:
   - Type line action **U** next to each of the CICS System Definitions that you want to upgrade together, and then press Enter.

     or
   - On the command line, enter: **S** *prefix** **U**

     where *prefix* matches the leading characters of the names of the CICS System Definitions that you want to upgrade together. To select all CICS System Definitions, omit the prefix: enter **S** * **U**

     This command inserts line action **U** next to every selected CICS System Definition, including any above or below the current view of the list panel. If you want to upgrade all of the selected CICS System Definitions together,

press Enter. Otherwise, selectively remove the line action **U** from the System Definitions that you do not want to upgrade, and then press Enter. (As described below in a later step, even if you select all CICS System Definitions, the upgrade only affects those CICS System Definitions that match the particular existing "from" values that you specify.)

Note: You can only enter line action **U** next to System Definitions of type CICS.

The Mass Update CICS Systems panel appears:

```
  File  Options  Help
 --------------------------------------------------------------------------
                           Upgrade CICS Systems
 Command ===> _____

 Specify CICS sytems upgrade criteria and execution option.
 Execution option  . . 1  1. Report only
                          2. Perform update and report
                          3. Populate From and To with first system details
 Definition changes:
 MVS Image         From . . _____   To . . _____

 Description       From . . _____
                   To . . . _____

 CICS Version (VRM) From . . ___  +   To . . ___  +

 MCT Suffix        From . . __       To . . __

 MCT Load Library  From . . _____
                   To . . . _____

 SDFHLOAD Library  From . . _____
                   To . . . _____

 Dictionary DSN    From . . _____
                   To . . . _____
 Upgrade options:
 _   Update CICS VRM based on SDFHLOAD
 _   Populate dictionary DSN with new dictionary record
 _   Auto save after successful update
```

Figure 15. System Definitions: Mass Update CICS Systems

2. In the "From" fields, enter the old values that you want to upgrade. In the matching "To" fields, enter the new values.

   The CICS VRM "From" field can specify any CICS version; however, the "To" field can only specify one of the CICS versions supported by CICS PA

   The "From" fields for Description and data set names (MCT Library, SDFHLOAD Library, and Dictionary DSN) can specify an asterisk (*) as a wildcard to indicate zero or more characters, or the percent symbol (%) as a wildcard to indicate any single character.

3. To view a report of the changes that your "From" and "To" field values would have on each of the selected CICS System Definitions, select the "Report only" option. To perform the changes and then view a report of the changes, select "Perform update and report".

Migrating System Definitions from CICS PA V1R1

If you are migrating from CICS PA V1R1, and this is the first time you have invoked System Definitions, you will immediately be prompted to upgrade your System and File specifications.

```
                CICS PA V2R1 Upgrade


Your system definitions are about to be upgraded to the
current CICS PA level.

This allows you to take advantage of the following new
features:
o   New views to better manage your CICS systems and SMF files
o   DB2 reporting
o   WebSphere MQ reporting
o   MVS System Logger reporting

Press ENTER to proceed with the upgrade.
Press EXIT or CANCEL to proceed without upgrading.
```

Figure 16. System Definitions: Migrating from CICS PA V1R1

This facility allows you to automatically upgrade your CICS PA V1R1 APPLID and SMF File definitions to the current CICS PA level.

If you proceed with the upgrade, your definitions will be immediately available to you.

If you bypass the upgrade, you will be starting with no system definitions.

Note: Any changes to your system definitions in CICS PA V2R1 will not be available to you in CICS PA V1R1.

Personal System Definitions Menu

The first time that you invoke System Definitions, you will be presented with a menu. You can choose to bypass this in the future.

```
  File  Confirm  Options  Help
  --------------------------------------------------------
              Personal System Definitions Menu
Command ===> _____

Select an option then press Enter.

1  1. Define Systems, SMF Files and Groups
_   2. Maintain SMF Files
    3. Maintain Group definitions
    4. Take-up from SMF File

Enter "/" to select option
_   Always go directly to Systems View
```

Figure 17. Personal System Definitions: Menu

The System Definitions Menu displays the options available for specifying and maintaining Systems, SMF Files, and Groups. These are the three primary views of your System Definitions. For each of these views, there is a hierarchy of panels for maintaining their relationships:

- For a System, you can specify the SMF Files it uses and the Groups it belongs to.

Personal System Definitions

- For an SMF File, you can specify the Systems that use it.
- For a Group, you can specify the Systems that belong to it.

This menu also provides a Data Take-up facility to extract details of Systems from an SMF File for automatic take-up into your System Definitions.

You can bypass the System Definitions Menu by selecting **Always go directly to Systems View.** Then option 1 from the Primary Option Menu will always go directly to the System Definitions panel.

To access the Systems, SMF Files, and Groups panels without using the menu, select from **View** in the action bar or enter one of the commands **VIEW SYSTEMS, VIEW FILES,** or **VIEW GROUPS.**

To redisplay the menu, select **View->Menu** in the action bar or enter the **MENU** command.

Regardless of your bypass choice, if you have Automatic Save on Exit set to **PROMPT** in your Profile Settings, the menu will always be displayed when you attempt to exit System Definitions. This allows you to enter **SAVE** or **CANCEL** before exit.

Primary Commands: The following primary commands are available:

SAVE   This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

CONFIRM ON|OFF

CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from System Definitions when there are changes. With **CONFIRM OFF,** Cancel requests are actioned immediately, discarding any changes.

The CONFIRM command changes the setting only for the current invocation of System Definitions. On exit, it reverts to the default set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

Notes:

1. The **SAVE** command is available only at the four possible "exit points" of System Definitions: the Menu, and the Systems, SMF Files, and Groups views. All System Definitions changes are saved upon issuing a **SAVE** command from any of these panels.

2. Updates to the current view are saved when you change views (**VIEW SYSTEMS|FILES|GROUPS** command) or display the menu (**MENU** command).

3. **CANCEL** (F12) discards all updates.

4. **EXIT** (F3) saves your System Definitions as follows:
   - If the System Definitions Menu is *not* being bypassed, your System Definitions are not saved until Exit from the Menu.
   - If the System Definitions Menu *is* being bypassed, your System Definitions are saved on Exit from any view (Systems, Files, or Groups).

Maintaining Personal System Definitions

The System Definitions panel is displayed when you select option 1 **Define Systems, SMF Files and Groups** from the System Definitions Menu. However, if you opted to bypass the menu and go straight to the Systems view, then selecting option 1 **System Definitions** on the Primary Option Menu displays the System Definitions panel immediately. You can also change to the Systems view from the Files or Groups view by selecting from **View** in the action bar or by entering the **VIEW SYSTEMS** command.

The System Definitions panel is the primary panel for maintaining your system definitions. When the list of Systems is displayed:

- To define a new system, enter the **NEW** command and it will be added at the top of the list. Alternatively, you can enter the line action **I** (Insert) on the row above where you want the new entry to be added.
- To update or view details of a system including its related files and groups, enter the **S** line action against the system where it appears in the list.
- To delete a system that is no longer required, enter the **D** line action against the system where it appears in the list.
- You can also use **C** or **R** to copy or repeat a system entry together with its associated files and groups. Note however that an MVS Image must have a unique name.
- **FIND** and **SORT** commands are available to help you locate entries in the list.
- You can select **Filter->Set Filter** in the action bar to reduce the volume of the display to only the systems that match your specified criteria.

```
   File  Edit  Filter  View  Options  Help
  -----------------------------------------------------------------------------
                          System Definitions                   Row 1 from 9
  Command ===> _____    Scroll ===> ____

  Select a System to edit its definition, SMF Files and Groups.
                                                              SMF Files
  /   System   Type    Image            Description           System
  _   CICSP001 CICS    MVS1     CICS APPLID CICSP001/MVS1_____  MVS1
  _   MVS1     Image            MVS System MVS1_____   MVS1
  _   DB2P     DB2     MVS1     DB2 Subsystem DB2P/MVS1_____  MVS1
  _   CICSD001 CICS             CICS APPLID CICSD001_____  CICSD001
  _   DB2D     DB2     MVS1     DB2 Subsystem DB2D/MVS1_____  DB2D
  _   DB2E     DB2              DB2 Subsystem DB2E_____   DB2E
  _   DB2F     DB2              DB2 Subsystem DB2F_____
  _   CICSP001 Logger  MVS1     System Log for CICSPLOG/MVS1_____  MVS1
  _   CICSP*   CICS             CICSAPPLIDs CICSP*_____   CICSP*
  ****************************** End of list ******************************
```

Figure 18. System Definitions

This panel lists the Systems that are available for Report Set processing.

A System is identified by the combination of:
- System ID
- Type of System (CICS, Image, DB2, MQ, Logger)
- MVS (SMF) Image ID

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Each row shows System, Type, Image, Description, and the SMF Files System. The fields are display-only except for Description and are described below.

System

The system name is one of the following depending on the type:
- CICS generic APPLID
- MVS (SMF) Image ID
- DB2 Subsystem ID
- WebSphere MQ Subsystem ID
- MVS System Logger ID

Enter the **I** line action or the **NEW** command to define a new System. Enter the **S** line action against a System to specify its details and related SMF Files and Groups.

CICS PA automatically inserts an Image definition when a System is added or updated with a new Image. The Image is inserted in the list immediately below the System that created it.

The purpose of Image definitions is two-fold:

1. To allow you to report against all systems running on an MVS Image without having to explicitly specify the system names.

2. To allow you to specify the SMF data set names once. Simply define your SMF files for an MVS Image, and all systems running on that Image (with no files of their own) will use these files.

If they are uniquely defined, the order of the system definitions is not relevant to CICS PA. You can list them on this panel in the order that is convenient for you. Line action **M** (Move) or the **SORT** command is available for this purpose.

Type   The type of system is one of the following:

1. **CICS System.** CICS System, identified by its generic APPLID. CICS PA matches this name against the generic APPLID specified in the CMF records.

2. **MVS Image.** MVS System, identified by its MVS SMF ID (SID parameter in SMFPRMnn) or any name that uniquely identifies your system. The name need not match any formal MVS definition.

3. **DB2 Subsystem.** DB2 Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the DB2 accounting records.

4. **MQ Subsystem.** MQ Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the MQ accounting records.

5. **System Logger.** MVS System Logger, identified by the CICS or MVS system it services or any name that identifies the Logger system. The name need not match any formal MVS definition.

Image Image is the SMF identifier of the MVS System which collects the SMF data and executes the CICS System, DB2 Subsystem, MQ Subsystem, or System Logger. Image is blank when the System is an Image because the System name is the Image name.

Description

Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

SMF Files System

>The SMF Files System identifies where you have defined the files for this system. These are the files that CICS PA will use for Report Set JCL generation.

>CICS PA allows systems to share files. So if an MVS Image is running a number of CICS, DB2 or MQ systems, you need only specify the files once for the Image.

>If this indicator is blank, the system (and its associated Image) have no files defined or they are all Excluded. If your Report Set requests this system, the JCL generation process will invoke the "Missing SMF Files Option".

>Enter the **S** line action to view or modify the SMF File specifications (and Groups) for the system.

Line Actions: The valid line actions for the list of systems are:

/	Display the menu of line actions
S	Select (edit) the System
I	Insert a row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

Note: A line action on this panel applies to the System definition and all its associated information. For example, copying a row copies the System details and all its File and Group relationships. Deleting a row deletes the System and its relationships, but not the Files and Groups themselves.

Primary Commands: The following primary commands are available:

NEW name CICS|IMAGE|DB2|MQ|LOGGER

>This command creates a new System. If all required parameters are specified, the Definition panel for the system is displayed. Otherwise, the New System window is displayed to allow you to specify the name and type of the new System.

>Also available from **File** in the action bar.

>See "New System" on page 65 for information on how to proceed.

SAVE This command saves any changes you have made during this invocation of System Definitions.

>Also available from **File** in the action bar.

FIND string

>This command (or **F**) looks for the specified character string in all columns of displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

>If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** or **RFIND** to search from the top.

If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

Also available from **Edit** in the action bar.

SORT SYSTEM|TYPE|IMAGE|DESCription
This command sorts the list of Systems on the specified column. The default is SYSTEM (then TYPE and IMAGE). The order is retained on exit.

Also available from **Edit** in the action bar.

RESET
This command (or **RES**) removes all outstanding line actions.

Also available from **Edit** in the action bar.

VIEW FILES|GROUPS
This command takes you to the Files or Groups view. Updates are saved when you change views.

Also available from **View** in the action bar.

MENU This command takes you to the System Definitions Menu. Updates are saved when you go to the menu.

Also available from **View** in the action bar.

Notes:
1. The **SAVE** command is available only at the four possible "exit points" of System Definitions: the Menu, Systems view, SMF Files view, and Groups view. All System Definitions updates are saved on issuing a **SAVE** command from any of these panels.
2. Updates are saved when you change views (**VIEW SYSTEMS|FILES|GROUPS** command) or display the menu (**MENU** command).
3. **CANCEL** (F12) discards all updates.
4. **EXIT** (F3) saves changes as follows:
   - If the System Definitions Menu is *not* being bypassed, the System Definitions are not saved until Exit from the Menu.
   - If the System Definitions Menu *is* being bypassed, the System Definitions are saved on Exit from any view (Systems, Files, or Groups).

Set Filter (Systems)

The following panel is displayed when you select **Filter->Set Filter** in the action bar of the System Definitions panel.

```
-------------------- Set Filter --------------------------
  Command ===> _____

  Specify or revise filtering criteria then press Enter.

  System ID . . . . . C*_____   (Blank or pattern)
  MVS Image . . . . . _____    (Blank or pattern)

  /  Include CICS Systems
  /  Include MVS Images
  /  Include DB2 Subsystems
  /  Include MQ Subsystems
  /  Include System Logger
```
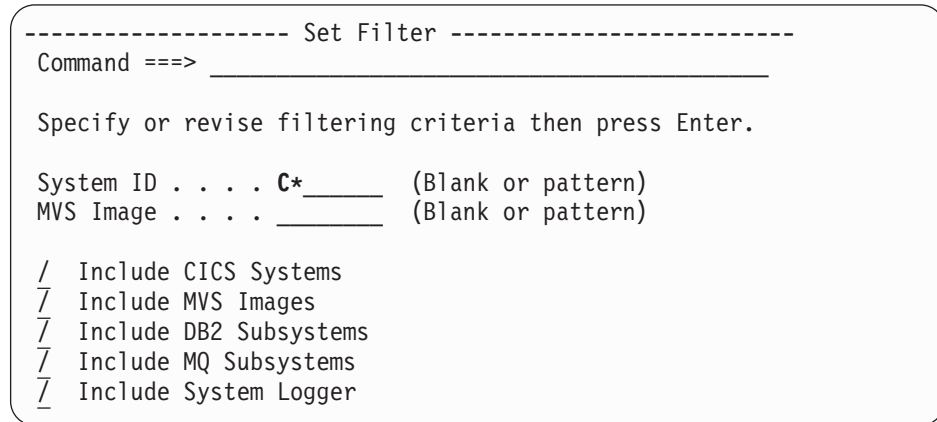
Figure 19. System Definitions: Set Filter (Systems)

This facility allows you to filter the amount of information displayed in the current view.

Specify any combination of the following filtering criteria:

System ID, MVS Image
> Specify a name or pattern for one or both. Masking characters **%** and ***** are allowed. Only systems that match the pattern are eligible for display. For example, CIC*1 will display CICPROD1 and CICST1 but not CICST1A.

Include CICS Systems, MVS Images, DB2, MQ, System Logger
> Type **/** against the type of systems you want displayed. Only those selected are eligible for display.

Press Enter to set the filter.

A system will only be displayed in the filtered view when all the specified filtering options are matched. All others are hidden (they are not deleted). Exit, Save, or Cancel processing applies to the entire list of systems, regardless of whether they are displayed or filtered out.

When filtering is in effect **Filter Mode - More:** is displayed in the top right corner of the panel. On initial entry to the Systems view, no filtering is in effect.

To reset the filter and redisplay all systems, select **Filter->Clear Filter** in the action bar. The row count will redisplay in the top right corner of the panel. The filtering criteria will remain dormant in the Set Filter panel.

New System

The New System panel is displayed when you enter the **NEW** command or the line action **I** (Insert) from the System Definitions panel.

Personal System Definitions

```
                New System
  Command ===> _____

  Specify the name and type of system.

  System Name  . . CICSGP2_

  System Type  . . _    1. CICS System
                       2. MVS Image
                       3. DB2 Subsystem
                       4. MQ Subsystem
                       5. System Logger
```

Figure 20. System Definitions: Specifying a New System

This panel allows you to create a new system definition. You must specify the system name and type.

You can bypass this panel by entering the command
NEW name CICS|IMAGE|DB2|MQ|LOGGER in full.

The options are:

System Name

Specify the name of the new system. Names can contain only alphanumeric (A-Z,0-9) or special (@,#,$) characters. For a CICS APPLID, DB2 or MQ SSID, or Logger name you can also specify a pattern using the **%** and ***** masking characters.

A CICS APPLID, Image, or Logger name has a maximum length of 8 characters, whereas for a DB2 or MQ SSID it is 4 characters.

Type   Select the type of system:

1. **CICS System.** CICS System, identified by its generic APPLID. CICS PA matches this name against the generic APPLID specified in the CMF records.
2. **MVS Image.** MVS System, identified by its MVS SMF ID (SID parameter in SMFPRMnn) or any name that uniquely identifies your system. The name need not match any formal MVS definition.
3. **DB2 Subsystem.** DB2 Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the DB2 accounting records.
4. **MQ Subsystem.** WebSphere MQ Subsystem, identified by its SSID. CICS PA matches this name against the SSID specified in the MQ accounting records.
5. **System Logger.** MVS System Logger, identified by the CICS or MVS system it services or any name that identifies the Logger system. The name need not match any formal MVS definition.

CICS System (APPLID) definition

The CICS System panel is displayed when:

- You enter the **S** line action against a CICS System listed on the System Definitions panel.

- You enter the **NEW** command with a type of **CICS.**

```
  File  Edit  Dictionary  View  Options  Help
 ----------------------------------------------------------------------
                            CICS System              Row 1 of 3  More: >
 Command ===> _____  Scroll ===> ____

 CICS System definition:
  APPLID . . . . . . . . CICSP1__  MVS Image . . MVS1____
  Description  . . . . . CICS system CICSP1 on MVS MVS1_____
  CICS Version (VRM) . . 650
  MCT Suffix . . . . . . U1
  MCT Load Library . . . 'CICS.PROD.MCTLOAD'_____
  SDFHLOAD Library . . . 'CICS.PROD.SDFHLOAD'_____
  Dictionary DSN . . . . 'USER.CICSPA.CICSP1.DICT'_____

 / Exc          SMF Data Set Name +              UNIT +  SEQ VOLSER +
  _  *  'CICSPAOR.CMF1'_____ CART____  1__ 000010 +
  _     'CICSPAOR.CMF2'_____ 3390____  ___ _____
  _  *  'CICSPAOR.CMF3'_____  _____  ___ _____
 ******************************* End of list ****************************

  F1=Help       F3=Exit       F4=Prompt     F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 21. System Definitions: CICS System (with Files)

```
  File  Edit  Dictionary  View  Options  Help
 ----------------------------------------------------------------------
                            CICS System              Row 1 of 2  More: >
 Command ===> _____  Scroll ===> ____

 CICS System definition:
  APPLID . . . . . . . . CICSP1__  MVS Image . . MVS1____
  Description  . . . . . CICS system CICSP1 on MVS MVS1_____
  CICS Version (VRM) . . 650
  MCT Suffix . . . . . . U1
  MCT Load Library . . . 'CICS.PROD.MCTLOAD'_____
  SDFHLOAD Library . . . 'CICS.PROD.SDFHLOAD'_____
  Dictionary DSN . . . . 'USER.CICSPA.CICSP1.DICT'_____

 /   Group +              Description
  _  CICSPROD    Production CICS_____
  _  DB2PROD_    Production DB2_____
 ******************************* End of list ****************************

  F1=Help       F3=Exit       F4=Prompt     F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 22. System Definitions: CICS System (with Groups)

Personal CICS System definition

This panel is used to define a CICS system to CICS PA. The definition includes:
- CICS Generic APPLID which must be specified
- MVS (SMF) ID where the CICS system runs
- CICS Version (VRM)
- Suffix of the Monitoring Control Table (MCT)
- Load Library containing the MCT load module
- SDFHLOAD Library containing the CICS utility program DFHMNDUP which CICS PA uses to generate CMF Dictionary records
- Name of a sequential data set which contains the Dictionary record for this CICS system
- Files used by the CICS system
- Groups the CICS system belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The CICS system details are:

APPLID
> The CICS Generic APPLID. An APPLID is up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters, and must be specified. You can also specify a pattern using the **%** and ***** masking characters.

Image
> The SMF identifier of the MVS system where the CICS system runs. An Image ID is up to 8 alphanumeric (A-Z,0-9) or special (@,#,$) characters.

Description
> Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

CICS Version (VRM)
> The version, release, and modification level of the CICS system, specified in the same format as the VRM setting in DFHSIT. The supported releases are:
> | | |
> |---|---|
> | **530** | CICS Transaction Server for OS/390 Version 1 Release 3 |
> | **610** | CICS Transaction Server for z/OS Version 2 Release 1 |
> | **620** | CICS Transaction Server for z/OS Version 2 Release 2 |
> | **630** | CICS Transaction Server for z/OS Version 2 Release 3 |
> | **640** | CICS Transaction Server for z/OS Version 3 Release 1 |
> | **650** | CICS Transaction Server for z/OS Version 3 Release 2 |
>
> CICS PA uses the version to:
> - Perform release-dependent batch report processing
> - Determine which performance dictionary fields are available, if the MCT is not available.
>
> If VRM is not specified, CICS PA determines it from the version of the SDFHLOAD Library.

MCT Suffix
> The suffix of the CICS Monitoring Control Table (MCT), which should be the same as the MCT= parameter in DFHSIT. The suffix is one or two alphanumeric (A-Z,0-9) or special (@,#,$) characters. If not specified,

CICS PA uses the system default MCT. If specified, the MCT Load Library must also be specified. The MCT is needed to include user fields in your reporting.

MCT Load Library

The name of the load library containing the MCT load module. If not specified, CICS PA cannot use the MCT to determine the user fields defined in the MCT.

SDFHLOAD Library

The name of the library containing the CICS utility program DFHMNDUP which CICS PA uses to generate a Dictionary record. CICS PA uses the Dictionary record to interpret the CMF performance data records processed from the SMF files. If not specified, CICS PA cannot determine the CICS VRM or report user fields defined in the MCT.

Dictionary DSN

The name of the data set that contains the Dictionary record for this CICS system. It can be either the name of a data set with Variable record format (RECFM=V) or the name of a member of a partitioned data set (PDS).

You only need to specify this if you want to report the user fields defined in the MCT. If you are not reporting user fields, then you can let CICS PA use the default Dictionary record for your release of CICS.

If you want CICS PA to generate the Dictionary record for this CICS system, do the following:

1. Specify the Dictionary DSN.
2. Specify the SDFHLOAD Library so that CICS PA can use the DFHMNDUP utility to generate the Dictionary record.
3. Select **Dictionary** in the action bar. CICS PA immediately populates the specified data set with the Dictionary record for this CICS system. If the data set is not cataloged, CICS PA will allocate it before writing the record. If the data set is cataloged, CICS PA will overwrite its contents with the new Dictionary record.

At JCL generation time, CICS PA inserts the Dictionary DSN (if cataloged) in the **CPADICTR DD** statement.

Dictionary records describe the format of CMF performance records and are required for CICS PA reporting. Usually the SMF data set contains a Dictionary record to describe the format of its records. If it is missing, CICS PA uses the record in the CPADICTR data set if present, otherwise it uses the default Dictionary record for the release of the CICS system being processed.

Primary Commands: The following primary commands are valid for this panel:

FIND string

This command (or **F**) looks for the specified character string in SMF Data Set and Group columns of displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is

displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

Also available from **Edit** in the action bar.

SORT GROUP|DESCription

This command sorts the list of Groups by name (the default) or description. The order is retained on exit.

Also available from **Edit** in the action bar.

Note: The SORT command is not available for Files since it is important that the data set names are specified in time sequence.

RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

Files the System uses

See Figure 21 on page 67 for a view of the CICS System panel where you can list all the files that the system uses.

Each listed data set has the following attributes:

Exc The data set is marked by an asterisk ***** if it is to be Excluded from reporting. Excluded data sets are not eligible for Report Set JCL generation.

Enter the **X** line action to reverse the status (Exclude/Include) of the data set.

SMF Data Set Name

The name of an SMF data set containing data for Report Set processing:
- CMF performance class, exception class, and transaction resource class data (SMF 110 records)
- DB2 accounting data (SMF 101 records)
- WebSphere MQ accounting data (SMF 116 records)
- System Logger data (SMF 88 records)

You can select data set names from a list of available data sets by using **Prompt** (F4) or the **S** line action.

Normal ISPF data set conventions apply. Fully qualified data set names must be enclosed in quotes, except if **PROFILE NOPREFIX** is set.

The data sets, if not Excluded, are processed by CICS PA JCL generation in the order in which they are specified on the panel. For reporting to span more than one data set, specify the data sets in time sequence (earliest first).

If the data set is not cataloged, then specify UNIT, SEQ, or VOLSER.

UNIT

The generic or esoteric device type of the data set, such as 3390, SYSDA, or CART. This must represent a device type that is defined in the Eligible Device Table of the current processor as either TAPE or DASD. To select one from a list of possible Units, position the

cursor on the UNIT field and press **Prompt** (F4). See Figure 24 on page 72 for an example of the Unit selection list.

UNIT can be specified without a VOLSER, in which case CICS PA will use the explicitly specified device type when generating JCL but will not include the UNIT parameter in the generated JCL. In this way the JCL generation process can be made aware of the device type of a data set that is yet to be cataloged, or is cataloged on another system. CICS PA uses the device type to determine tape unit affinity when generating JCL.

SEQ

The File Sequence Number is only required for uncataloged tape data sets. It identifies the relative position of the data set on a tape volume. Omit, or code 0 or 1 to indicate the first data set on the tape volume.

VOLSER

The volume serial number of the data set. It is only required for uncataloged data sets. If a VOLSER is specified, then a UNIT must also be specified.

CICS PA appends a **+** sign to the VOLSER to indicate that the data set spans multiple volumes.

To display the VOLSER List of up to 16 volumes, do one of the following:
- Enter the **V** line action.
- Place the cursor on the + sign and press **Enter.**
- Place the cursor on the VOLSER field and press **Prompt** (F4).

See Figure 25 on page 73 for an example of the VOLSER List.

Line Actions: The valid line actions for the System Files view are:

/	Display the menu of line actions
S	Select File(s) from a list
I	Insert a blank row for entry of a related file
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row
U	Select Unit from a list
V	Display the VOLSER List for up to 16 volumes
X	Reverse the Exclude indicator (Include/Exclude)

Select SMF Files

The Select SMF Files panel is displayed when you enter the line action **S** or press **Prompt** (F4) from an SMF Data Set Name field on a system definition panel (CICS System, MVS Image, DB2 Subsystem, MQ Subsystem, System Logger). It displays the list of files not already defined to the system. This list is a subset of the files maintained in the Files view (see Figure 35 on page 83).

Personal CICS System definition

```
                        Select SMF Files           Row 1 to 6 of 6
Command ===> _____  Scroll ===> ____


Select one or more Files then press EXIT.

              SMF Data Set Name                 UNIT    SEQ VOLSER
.  'CICSPAOR.CMF1'                              SYSALLDA 1   000010
.  'CICSPAOR.CMF2'                              3390
.  'CICSPAOR.CMF3'
.  'CICSPTOR.CMF1'                              SYSALLDA 1   00110
.  'CICSPTOR.CMF2'                              3390
.  'CICSPTOR.CMF3'
***************************** End of list ***************************
```

Figure 23. System Definitions: Select SMF Files

This is a list of SMF Files that are available for selection.

Enter a **/** or **S** line action to select one or more files from the list.

Press **Exit** (F3) to complete your selection.

Select a Unit

The Select a Unit panel is displayed when you press **Prompt** (F4) from the UNIT field when specifying a data set:

- For a System (CICS System, MVS Image, DB2 Subsystem, MQ Subsystem, System Logger)
- In the Files view
- On the Data Take-Up panel

It displays the list of valid units for the processor CICS PA is running on.

```
---------- Select a Unit --------
             Row 1 to 14 of 22
 Command ===> _____


 Select a Unit then press Enter.
 .   CART
 .   DASD
 .   DISK
 .   SYSALLDA
 .   SYSDA
 .   SYS348XR
 .   SYS3480R
 .   TAPE
 .   VIO
 .   3380
 .   3390
 .   3400
 .   3410
 .   3420
```

Figure 24. System Definitions: Select a Unit

This is a list of unit device types that are defined as either TAPE or DASD in the Eligible Device Table of the current processor.

Enter a **/** or **S** line action (or point-and-shoot) to select a unit device type from the list.

VOLSER list

The list of Volsers is displayed when you press **Prompt** (F4) from the VOLSER field when specifying a data set:

- For a System (CICS System, MVS Image, DB2 Subsystem, MQ Subsystem, System Logger)
- In the Files view
- On the Data Take-Up panel

```
------------ Volser List ---------

 Command ===> _____

 Specify or revise Volser list.

                        More:    +
 Volser 1 . . . _____
 Volser 2 . . . _____
 Volser 3 . . . _____
 Volser 4 . . . _____
 Volser 5 . . . _____
 Volser 6 . . . _____
 Volser 7 . . . _____
 Volser 8 . . . _____
 Volser 9 . . . _____
```

Figure 25. System Definitions: VOLSER List

The VOLSER List is used to specify up to 16 volume serial numbers when the SMF data set spans more than one volume. The VOLSERs are listed in the JCL in the same order as they are specified here.

Groups the System belongs to

See Figure 22 on page 67 for a view of the CICS System panel where you can list all the groups that the system belongs to.

Each group in the list has the following attributes:

Group The name of a Group that this system belongs to. A system can belong to any number of groups. A group name need not be a formal CICS definition, but any name you choose to identify a group of related systems. You can select one or more from a list of available groups by using **Prompt** (F4).

By specifying a Group name, you can group related systems for reporting purposes, such as cross-system reporting for CICS systems that connect via IRC/MRO, ISC/APPC, or transaction grouping.

Description
Description is free format text up to 36 characters to describe the group.

Line Actions: The valid line actions for the System Groups view are:
/   Display the menu of line actions
S   Select Group(s) from a list
I   Insert a row

R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

Select Groups

The Select Groups panel is displayed when you enter the line action **S** or press **Prompt** (F4) from a Group field on a system definition panel (CICS System, MVS Image, DB2 Subsystem, MQ Subsystem, System Logger). It displays the list of groups that the system does not already belong to. This list is a subset of the groups maintained in the Groups view (see "Maintaining Personal Groups" on page 90).

```
-------------------- Select Groups --------------------
                                          Row 1 to 4 of 4
Command ===> _____ Scroll ===> ____

Select one or more Groups then press EXIT.

    Group                 Description
.   PRODMRO1  Production MRO
.   WEEKLY    Weekly SMF data
.   MONTHLY   Monthly SMF data
.   YEARLY    Yearly SMF data
******************** End of list *********************
```

Figure 26. System Definitions: Select Groups

This is a list of groups that are available for selection.

Enter a **/** or **S** line action to select one or more groups from the list.

Press **Exit** (F3) to complete your selection.

MVS Image definition

The MVS Image panel is displayed when:

- You enter line action **S** against an MVS Image listed on the System Definitions panel.
- You enter the **NEW** command with a type of **IMAGE.**

```
   File  Edit  View  Options  Help
 ---------------------------------------------------------------------------
                              MVS Image              Row 1 of 2  More: >
 Command ===> _____ Scroll ===> ____

 MVS Image definition:
  MVS Image  . . . . . MVS1____
  Description  . . . . MVS system MVS1_____

 / Exc            SMF Data Set Name +                 UNIT +  SEQ VOLSER +
 _      'MVS1.CMF.FILEA'_____ _____ ___ _____
 _  *   'MVS1.CMF.FILEB'_____ _____ ___ _____
 ****************************** End of list ****************************

  F1=Help       F3=Exit       F4=Prompt     F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 27. System Definitions: MVS Image (with Files)

```
   File  Edit  View  Options  Help
 ---------------------------------------------------------------------------
                              MVS Image              Row 1 of 2  More: >
 Command ===> _____ Scroll ===> ____

 MVS Image definition:
  MVS Image  . . . . . MVS1____
  Description  . . . . MVS system MVS1_____

 /   Group +                 Description
 _   PLEXPROD    Production CICS_____
 _   PRODSHAR    Production data sharing_____
 ****************************** End of list ****************************

  F1=Help       F3=Exit       F4=Prompt     F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 28. System Definitions: MVS Image (with Groups)

This panel is used to define an MVS Image to CICS PA. The definition includes:

- MVS (SMF) ID of the MVS Image where CICS APPLIDs, DB2 SSIDs, MQ SSIDs, or System Loggers run
- Description of the Image
- Files the Image uses
- Groups the Image belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The Image details are:

Personal MVS Image definition

MVS Image

The name of the MVS Image. The Image name must be unique. An Image name is up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters.

Description

Description is free format text up to 36 characters to describe the MVS system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel. See page 69.

The lists of related Files and Groups work the same here as on the CICS System panel. See page 71 for the Files and page 73 for the Groups.

DB2 Subsystem definition

The DB2 Subsystem panel is displayed when:

- You enter line action **S** against a DB2 Subsystem listed on the System Definitions panel.
- You enter the **NEW** command with a type of **DB2.**

```
  File  Edit  View  Options  Help
 ------------------------------------------------------------------------
                            DB2 Subsystem              Row 1 of 2  More: >
 Command ===> _____  Scroll ===> ____

 DB2 Subsystem definition:
  DB2 SSID . . . . . . . DB2P  MVS Image . . . MVS1____
  Description  . . . . . DB2 Subsystem DB2P on MVS MVS1_____
  DB2 Version (VRM)  . . 810

 / Exc            SMF Data Set Name +                 UNIT +  SEQ VOLSER +
 _     'MVS1.DB2.FILEX'_____ _____ ___ _____
 _   * 'MVS1.DB2.FILEY'_____ _____ ___ _____
 ******************************* End of list ****************************

  F1=Help       F3=Exit       F4=Prompt     F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 29. System Definitions: DB2 Subsystem (with Files)

```
  File  Edit  View  Options  Help
 ------------------------------------------------------------------------
                            DB2 Subsystem              Row 1 of 1  More: >
 Command ===> _____  Scroll ===> ____

 DB2 Subsystem definition:
  DB2 SSID . . . . . . . DB2P  MVS Image . . . MVS1____
  Description  . . . . . DB2 Subsystem DB2P on MVS MVS1_____
  DB2 Version (VRM)  . . 810

 /   Group +                  Description
 _   DB2PROD    Production DB2_____
 ******************************* End of list ****************************

  F1=Help       F3=Exit       F4=Prompt     F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 30. System Definitions: DB2 Subsystem (with Groups)

This panel is used to define a DB2 Subsystem to CICS PA. The definition includes:

- SSID of the DB2 Subsystem
- MVS Image where the DB2 Subsystem resides
- Description of the Subsystem
- DB2 Version (VRM)
- Files used by the DB2 Subsystem
- Groups the DB2 Subsystem belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

Personal DB2 Subsystem definition

The DB2 Subsystem details are:

DB2 SSID

The DB2 Subsystem ID. A DB2 SSID can be up to four alphanumeric (A-Z,0-9) or special (@,#,$) characters. You can also specify a pattern using the **%** or ***** masking characters.

MVS Image

The SMF identifier of the MVS system where the DB2 subsystem executes. An Image ID is up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters.

Description

Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

DB2 Version (VRM)

The version, release, and modification level of the DB2 subsystem. This field is for your information only. DB2 Accounting records are release-dependent, but for reporting, CICS PA determines the DB2 version from the SMF file(s).

The supported releases are:

510	DB2 Version 5.1
610	DB2 Version 6.1
710	DB2 Version 7.1
810	DB2 Version 8.1

The primary commands are the same as on the CICS System panel. See page 69.

The lists of related Files and Groups work the same here as on the CICS System panel. See page 71 for the Files and page 73 for the Groups.

Note: Usually, you only need to specify files for DB2 subsystems when the DB2 Accounting records reside in a different data set to the CICS CMF records.

MQ Subsystem definition

The WebSphere MQ Subsystem panel is displayed when:

- You enter line action **S** against an MQ Subsystem listed on the System Definitions panel.
- You enter the **NEW** command with a type of **MQ.**

```
   File  Edit  View  Options  Help
 --------------------------------------------------------------------------
                             MQ Subsystem              Row 1 of 2  More: >
 Command ===> _____  Scroll ===> ____

 MQ Subsystem definition:
  MQ SSID . . . . . MQSP  MVS Image . . . MVS1____
  Description  . . .MQ Subsystem MQSP on MVS MVS1_____

 / Exc            SMF Data Set Name +                UNIT +  SEQ VOLSER +
 _      'MVS1.MQS.FILEX'_____ _____ ___ _____
 _   *  'MVS1.MQS.FILEY'_____ _____ ___ _____
 ****************************** End of list ****************************
 
  F1=Help       F3=Exit       F4=Prompt      F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions    F11=Right     F12=Cancel
```

Figure 31. System Definitions: MQ Subsystem (with Files)

```
   File  Edit  View  Options  Help
 --------------------------------------------------------------------------
                             MQ Subsystem              Row 1 of 2  More: >
 Command ===> _____  Scroll ===> ____

 MQ Subsystem definition:
  MQ SSID . . . . . MQSP  MVS Image . . . MVS1____
  Description  . . .MQ Subsystem MQSP on MVS MVS1_____

    Group +                Description
 _  MQSPROD     Production MQ_____
 ****************************** End of list ****************************
 
  F1=Help       F3=Exit       F4=Prompt      F5=Rfind      F6=Resize
  F7=Backward   F8=Forward    F10=Actions    F11=Right     F12=Cancel
```

Figure 32. System Definitions: MQ Subsystem (with Groups)

This panel is used to define an WebSphere MQ Subsystem to CICS PA. The definition includes:

- SSID of the WebSphere MQ Subsystem
- MVS Image where the WebSphere MQ Subsystem resides
- Description of the Subsystem
- Files used by the WebSphere MQ Subsystem
- Groups the WebSphere MQ Subsystem belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The WebSphere MQ Subsystem details are:

Personal MQ Subsystem definition

WebSphere MQ ID
The WebSphere MQ Subsystem ID. A WebSphere MQ SSID can be up to four alphanumeric (A-Z,0-9) or special (@,#,$) characters. You can also specify a pattern using the **%** or ***** masking characters.

MVS Image
The SMF identifier of the MVS system where the WebSphere MQ subsystem executes. An Image ID is up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters.

Description
Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel. See page 69.

The lists of related Files and Groups work the same here as on the CICS System panel. See page 71 for the Files and page 73 for the Groups.

System Logger definition

The System Logger panel is displayed when:

- You enter line action **S** against a System Logger listed on the System Definitions panel.
- You enter the **NEW** command with a type of **LOGGER.**

```
  File  Edit  View  Options  Help
 --------------------------------------------------------------------------
                              System Logger             Row 1 of 1  More: >
 Command ===> _____  Scroll ===> ____

 System Logger definition:
  Logger  . . . . . CICSP001  MVS Image . . . MVS1____
  Description . . . System Logger - CICS system CICSP001

 / Exc            SMF Data Set Name +                   UNIT +  SEQ VOLSER +
 _  _____  _____  ___  _____
 ******************************* End of list ****************************

  F1=Help        F3=Exit        F4=Prompt      F5=Rfind       F6=Resize
  F7=Backward    F8=Forward     F10=Actions    F11=Right      F12=Cancel
```

Figure 33. System Definitions: System Logger (with Files)

```
  File  Edit  View  Options  Help
 --------------------------------------------------------------------------
                              System Logger             Row 1 of 1  More: >
 Command ===> _____  Scroll ===> ____

 System Logger definition:
  Logger  . . . . . CICSP001  MVS Image . . . MVS1____
  Description . . . System Logger - CICS system CICSP001

 /   Group +                 Description
 _   CICSPROD   Production CICS systems_____
 ******************************* End of list ****************************

  F1=Help        F3=Exit        F4=Prompt      F5=Rfind       F6=Resize
  F7=Backward    F8=Forward     F10=Actions    F11=Right      F12=Cancel
```

Figure 34. System Definitions: System Logger (with Groups)

This panel is used to define a System Logger to CICS PA. The definition includes:

- ID of the System Logger
- ID of the MVS Image the System Logger services
- Description of the Logger
- Files used by the Logger
- Groups the Logger belongs to

Scroll **Right** (F11) to switch between Files and Groups. Files is the initial view. However, for each system, CICS PA remembers its last view and returns there next time.

The System Logger details are:

Personal System Logger definition

Logger

The name of the System Logger. This is not a formal MVS or CICS definition but any name you choose to identify the System Logger for your CICS systems. The name contains up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters. You can also specify a pattern using the **%** and ***** masking characters.

MVS Image

The SMF identifier of the MVS system where the System Logger executes. An Image ID is up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters.

Description

Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

The primary commands are the same as on the CICS System panel. See page 69.

The lists of related Files and Groups work the same here as on the CICS System panel. See page 71 for the Files and page 73 for the Groups.

Maintaining Personal SMF Files

The SMF Files view is displayed when you select option 2 **Maintain SMF Files** from the System Definitions Menu. However, if you opted to bypass the menu and go straight to System Definitions, you can change from the Systems view by selecting **View->Files** in the action bar or by entering the **VIEW FILES** command.

The SMF Files panel is the primary panel for maintaining your file definitions. When the list of SMF Files is displayed:

- To define a new data set, enter the line action **I** (Insert). This inserts a blank row on the next line ready for entry of the data set details.
- To update or view the systems that use the data set, enter line action **S** against the data set.
- To delete files that are no longer required, enter line action **D** against the data set.
- You can also use **C** or **R** to copy or repeat a file entry together with its associated systems.
- **FIND** and **SORT** commands are available to help you locate entries in the list.
- You can use **Filter->Set Filter** in the action bar to reduce the volume of the display to only the files that match your specified criteria.

```
   File  Edit  Filter  View  Options  Help
 -------------------------------------------------------------------------------
                                   SMF Files                       Row 1 from 6
 Command ===> _____      Scroll ===> ____

 Select to review the Systems that use the SMF data set.

 /   Use            SMF Data Set Name                     UNIT +  SEQ VOLSER +
 _   123  'CICSPAOR.CMF1'_____  SYSALLDA 1__  000010 +
 _   745  'CICSPAOR.CMF2'_____  3390____ ___  _____
 _    12  'CICSPAOR.CMF3'_____  _____ ___  _____
 _     1  'CICSPTOR.CMF1'_____  SYSALLDA 1__  00110_
 _     0  'CICSPTOR.CMF2'_____  3390____ ___  _____
 _    23  'CICSPTOR.CMF3'_____  _____ ___  _____
 ******************************* End of list ********************************


   F1=Help      F3=Exit      F4=Prompt    F5=Rfind    F7=Backward  F8=Forward
   F10=Actions  F12=Cancel
```

Figure 35. System Definitions: SMF Files

This panel is used to maintain SMF data sets that you want to run your Report Sets against. The SMF data sets contain the CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class data, DB2 accounting records, MQ accounting, and MVS System Logger records.

Through the related Systems (and their Groups), CICS PA uses the specified SMF data sets in the generation of Report Set JCL. The Use count shows the number of Systems that use this File. The count ignores Exclude indicators.

Enter the line action **I** to insert a new data set.
Enter the line action **S** against a data set to specify the Systems that use it.

Each listed data set has the following attributes:

Maintaining Personal SMF Files

Use   The File Use count. This indicates the number of Systems that use this File. The count ignores the Exclude indicator.

SMF Data Set Name

The name of an SMF data set containing data for Report Set processing:

- CMF performance class, exception class, and transaction resource class data (SMF 110 records)
- DB2 accounting data (SMF 101 records)
- WebSphere MQ accounting data (SMF 116 records)
- System Logger data (SMF 88 records)

Normal ISPF data set conventions apply. Fully qualified data set names must be enclosed in quotes, except if **PROFILE NOPREFIX** is set.

If the data set is not cataloged, then specify UNIT, SEQ, or VOLSER

UNIT

The generic or esoteric device type of the data set, such as 3390, SYSDA, or CART. This must represent a device type that is defined in the Eligible Device Table of the current processor as either TAPE or DASD. To select one from a list of possible Units, position the cursor on the UNIT field and press **Prompt** (F4). See Figure 24 on page 72 for an example of the Unit selection list.

UNIT can be specified without a VOLSER, in which case CICS PA will use the explicitly specified device type when generating JCL but will not include the UNIT parameter in the generated JCL. In this way the JCL generation process can be made aware of the device type of a data set that is yet to be cataloged, or is cataloged on another system. CICS PA uses the device type to determine tape unit affinity when generating JCL.

SEQ

The File Sequence Number is only required for uncataloged tape data sets. It identifies the relative position of the data set on a tape volume. Omit, or code 0 or 1 to indicate the first data set on the tape volume.

VOLSER

The volume serial number of the data set. It is only required for uncataloged data sets. If a VOLSER is specified, then a UNIT must also be specified.

CICS PA appends a **+** sign to the VOLSER to indicate that the data set spans multiple volumes.

To display the VOLSER List of up to 16 volumes, do one of the following:
- Enter the **V** line action.
- Place the cursor on the **+** sign and press Enter.
- Place the cursor on the VOLSER field and press **Prompt** (F4).

See Figure 25 on page 73 for an example of the VOLSER List.

Line Actions: The following line actions are valid against any data set in the list:

/	Display the menu of line actions
S	Specify related Systems
I	Insert a blank row after this row to specify a new DSN

R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row
U	Select Unit from a list
V	Display the VOLSER List for up to 16 volumes

Note: A row command on this panel applies to the SMF File specification and all its associated information. For example, copying a row copies all details of the data set (name, unit, file sequence number, up to 16 volume serial numbers) and all its System relationships. Deleting a row deletes the SMF File specification and its System relationships, but not the Systems themselves.

Primary Commands: The following primary commands are available:

SAVE This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** or **RFIND** to search from the top.

If there is no match in the entire list, the screen does not change and a `String not found` message is displayed

Also available from **Edit** in the action bar

SORT DSN

This command sorts the list of Files on data set name. The order is retained on exit.

Also available from **Edit** in the action bar.

RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows

Also available from **Edit** in the action bar.

VIEW SYSTEMS|GROUPS

This command takes you to the Systems or Groups view. Updates are saved when you change views.

Also available from **View** in the action bar.
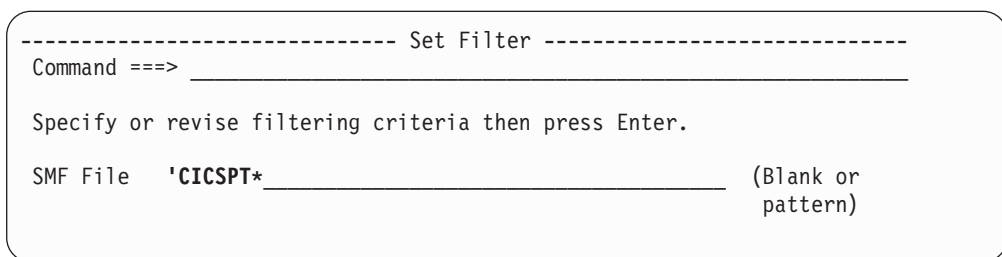
MENU

This command takes you to the System Definitions Menu. Updates are saved.

Also available from **View** in the action bar.

Set Filter (Files)

The Set Filter panel is displayed when you select **Filter->Set Filter** in the action bar of the SMF Files panel.

```
------------------------------ Set Filter ------------------------------
 Command ===> _____

 Specify or revise filtering criteria then press Enter.

 SMF File    'CICSPT*_____       (Blank or
                                                              pattern)
```

Figure 36. System Definitions: Set Filter (Files)

This facility allows you to filter the amount of information displayed in the current view.

Specify a name or pattern for **SMF File** then press **Enter** to set the filter on. Masking characters **%** and ***** are allowed.

A file will only be displayed in the filtered view if the data set name and any enclosing quotes match the pattern. For example, 'CMF* will display 'CMFPERF.DATA' but not CMFEXCPT.DATA.

Files that are not displayed are not deleted. Exit, Save, or Cancel processing applies to the entire list of files, regardless of whether they are displayed or filtered out.

When filtering is in effect **Filter Mode - More:** is displayed in the top right corner of the panel. On initial entry to the Files view, no filtering is in effect.

To reset the filter and redisplay all files, select **Filter->Clear Filter** in the action bar. The row count will redisplay in the top right corner of the panel. The filtering criteria will remain dormant in the Set Filter panel.

Systems that use this File

To display the panel for maintaining the Systems that use a File, enter the line action **S** against the File listed in the Files view.

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------------
                         Systems with this File              Row 1 to 5 of 5
  Command ===> _____  Scroll ===> ____

  Data Set Name . . : CICSPAOR.CMF1

  / Exc  System + Type     Image              Description
  _   *  CICSP001 CICS     MVS1     CICS system CICSP001/MVS1_____
  _   *  CICSD001 CICS              CICS system CICSD001_____
  _      DB2P____ DB2      MVS1     DB2 subsystem DB2P/MVS1_____
  _      MVS1____ Image             MVS system MVS1_____
  S      _____                   _____
  ****************************** End of list ***************************

   F1=Help       F3=Exit       F4=Prompt     F5=Rfind       F6=Resize
   F7=Backward   F8=Forward    F10=Actions   F12=Cancel
```

Figure 37. System Definitions: Systems that use this File

This panel allows you to specify the systems that use the SMF data set. To select one or more from a list of available systems, enter the line action **S** or position the cursor on the System field and press **Prompt** (F4).

Note: When a system is specified here, the file is added at the bottom of the list of files for that system. For example, see Figure 21 on page 67. You may need to adjust the order of the files into the correct time sequence.

Each system in the list has the following attributes:

Exc   The system is marked by an asterisk ***** if the file is to be Excluded from reporting for this system. Excluded data sets are not eligible for Report Set JCL generation.

Enter the line action **X** to reverse the status (Exclude/Include).

System, Type, Image
A System is identified by the combination of:
- System name which is one of the following depending on the type:
    - CICS generic APPLID
    - MVS (SMF) Image ID
    - DB2 Subsystem ID
    - MQ Subsystem ID
    - MVS System Logger
- Type of System: CICS, Image, DB2, MQ, or Logger
- MVS (SMF) Image ID

You can enter a system name directly. Alternatively, to select one or more from a list, enter the line action **S** or press **Prompt** (F4) from the System field.

Description
Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

Line Actions: The following line actions can be entered against any row in the list of related Systems:
/   Display the menu of line actions.
S   Select System(s) from a list.

I	Insert a blank row after this row to specify a related System. You can only specify known Systems; you cannot define new Systems from this panel.
R	Repeat this row.
C	Copy this row.
M	Move this row.
A	Move/Copy after this row.
B	Move/Copy before this row.
D	Delete this row. Only the relationship is deleted, not the System itself.

Primary Commands: The following primary commands are available:

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** or **RFIND** to search from the top.

If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

Also available from **Edit** in the action bar

SORT SYSTEM|TYPE|IMAGE|DESCription

This command sorts the list of Systems on the specified column. The default is SYSTEM (then TYPE and IMAGE). The order is retained only until exit or another SORT command is issued.

Also available from **Edit** in the action bar.

RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

Select Systems

The Select Systems panel is displayed when you press **Prompt** (F4) from a System field or enter line action **S** on the Systems with this File panel.

It displays the systems that are not already defined to the File. This list is a subset of the systems maintained in the System Definitions view (see Figure 18 on page 61).

```
                              Systems                         Row 1 to 5 of 5
  Command ===> _____ Scroll ===> ____

  Select one or more Systems then press EXIT.

     System    Type     Image                  Description
 .  CICSP001  CICS      MVS1      CICS system CICSP001/MVS1
 .  CICSD001  CICS                CICS system CICSD001
 .  DB2P      DB2       MVS1      DB2 subsystem DB2P/MVS1
 .  MQSP      MQ        MVS1      MQ subsystem MQSP/MVS1
 .  MVS1      Logger              MVS system MVS1
 *************************** End of List *********************************
```

Figure 38. System Definitions: Select Systems (for a File)

This panel displays a list of systems that are available for selection.

Enter a **/** or **S** line action to select one or more systems from the list.

Press **Exit** (F3) to complete your selection.

Maintaining Personal Groups

Use Groups to group systems for reporting purposes.

The Groups view is displayed when you select option 3 **Maintain Group definitions** from the System Definitions Menu. However, if you opted to bypass the menu and go straight to System Definitions, you can change from the Systems view by selecting **View->Groups** in the action bar or by entering the **VIEW GROUPS** command.

This is the primary panel for maintaining your group definitions. When the list of Groups is displayed:

- To define a new group, use the **NEW** command. Alternatively, enter the line action **I** (Insert) on the row above where you want the new entry to be added.
- To update or view the systems that belong to the group, enter line action **S** against the group where it appears in the list.
- To delete a group that is no longer required, enter line action **D** against the group.
- You can also use **C** or **R** to copy or repeat a group entry together with its associated systems.
- **FIND** and **SORT** commands are available to help you locate entries in the list.
- You can use **Filter->Set Filter** in the action bar to reduce the volume of the display to only the groups that match your specified criteria.

```
   File  Edit  Filter  View  Options  Help
 --------------------------------------------------------------------------------
                                  Groups                           Row 1 from 4
 Command ===> _____ Scroll ===> ____

 Select to review the Systems in the Group.

 /   Use  Group                 Description
 _    13  PRODMRO1  Production MRO_____
 _    34  WEEKLY    Weekly SMF data_____
 _     8  MONTHLY   Monthly SMF data_____
 S     2  YEARLY    Yearly SMF data_____
 ******************************* End of list *********************************

   F1=Help      F3=Exit      F5=Rfind     F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```
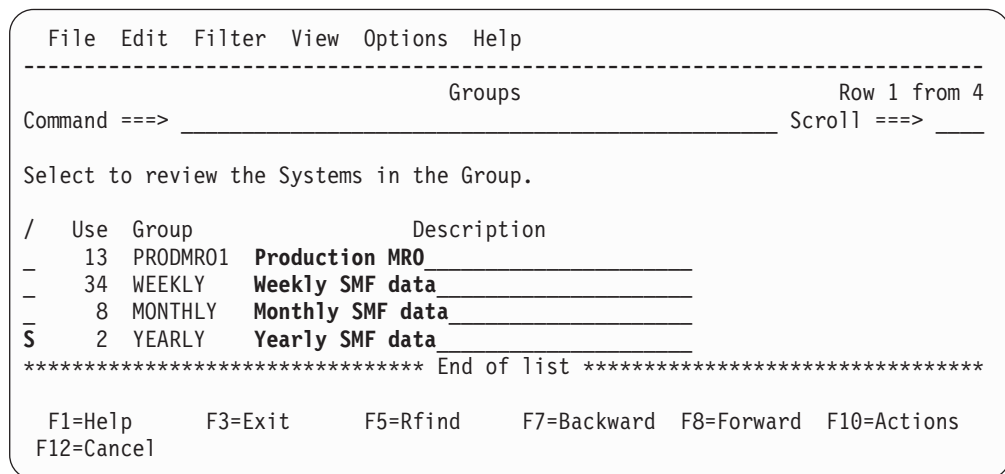
Figure 39. System Definitions: Groups

This panel is used to maintain Groups. CICS PA uses the related Systems (and their SMF Files) in the generation of Report Set JCL. The Use count shows the number of Systems that are defined to each Group.

Note: The order of the Systems defined to the Group determine the file sequence in the generated JCL. You may need to adjust the order so the files are in the correct time sequence.

Enter the line action **I** or the **NEW** command to define a new Group.
Enter the line action **S** against a Group to specify the Systems that belong to it.

Each listed group has the following attributes:

Use The Group Use count. This indicates the number of Systems defined to the Group.

Group

The name of a Group. The name can be up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters.

A Group name is an arbitrary name used to identify a group of related Systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, or transaction grouping.

Description

Description is free format text up to 36 characters to describe the group.

Line Actions: The following line actions can be entered against any row in the Groups list:
/ Display the menu of line actions
S Specify a Group and its related System(s)
I Insert a new Group
R Repeat this row
C Copy this row
M Move this row
A Move/Copy after this row
B Move/Copy before this row
D Delete this row

Notes:

1. Group name must be unique.

2. A row command on this panel applies to the Group definition and all its associated information. For example, copying a row copies the Group details and all its System relationships. Deleting a row deletes the Group and its relationships, but not the Systems themselves.

Primary Commands: The following primary commands are available:

NEW name

This command creates a new Group.

Also available from **File** in the action bar.

See Figure 41 on page 93.

SAVE This command saves any changes you have made during this invocation of System Definitions.

Also available from **File** in the action bar.

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** or **RFIND** to search from the top.

If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

Also available from **Edit** in the action bar.

SORT GROUP|DESCription

This command sorts the list of Groups by name (the default) or description. The order is retained on exit.

Also available from **Edit** in the action bar.

RESET

This command (or **RES**) removes all outstanding line actions.

Also available from **Edit** in the action bar.

VIEW SYSTEMS|FILES

This command takes you to the Systems or Files view. Updates are saved when you change views.
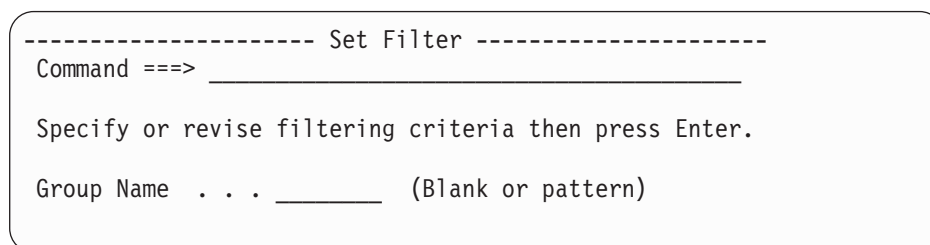
Also available from **View** in the action bar.

MENU

This command takes you to the System Definitions Menu. Updates are saved when you go to the menu.

Also available from **View** in the action bar.

Set Filter (Groups)

The Set Filter panel is displayed when you select **Filter->Set Filter** in the action bar of the Groups panel.

```
--------------------- Set Filter ---------------------
 Command ===> _____

 Specify or revise filtering criteria then press Enter.

 Group Name  . . . _____    (Blank or pattern)
```

Figure 40. System Definitions: Set Filter (Groups)

This facility allows you to filter the amount of information displayed in the current view.

Specify a name or pattern for **Group Name** then press **Enter** to set the filter on. Masking characters **%** and ***** are allowed.

A group will only be displayed in the filtered view if the group name matches the pattern. For example, MRO% will display MRO1 but not MRO nor MRO999. MRO* will display all three.

Groups not displayed are not deleted. Exit, Save, or Cancel processing applies to the entire list of groups, regardless of whether they are displayed or filtered out.

When filtering is in effect **Filter Mode - More:** is displayed in the top right corner of the panel. On initial entry to the Groups view, no filtering is in effect.

To reset the filter and redisplay all groups, select **Filter->Clear Filter** in the action bar. The row count will redisplay in the top right corner of the panel. The filtering criteria will remain dormant in the Set Filter panel.

Systems in this Group

To display the panel for maintaining Systems that belong to a Group, enter the line action **S** (Select an existing Group) or **I** (Insert a new Group) from the Groups view.

```
   File  Edit  Options  Help
  -----------------------------------------------------------------------------
                        Systems in this Group                Row 1 to 4 of 4
  Command ===> _____     Scroll ===> ____

  Group . . . . . . : PRODMRO1
  Description . . . : Production MRO_____

  /  System +  Type     Image               Description
  _  CICSP1__  CICS     SYSA     Production AOR System 1_____
  _  CICSP2__  CICS     SYSA     Production AOR System 2_____
  _  CICSP3__  CICS     SYSA     Production FOR System_____
  _  DB2P____  DB2      SYSA     Production DB2 System_____
  ******************************* End of list *******************************


  F1=Help        F3=Exit        F4=Prompt      F5=Rfind       F6=Resize
  F7=Backward    F8=Forward     F10=Actions    F12=Cancel
```

Figure 41. System Definitions: Systems in this Group

This panel allows you to specify the systems that belong to the Group. To select one or more from a list of available systems, position the cursor on the System field and press **Prompt** (F4) or enter the **S** line action.

A group is identified by its name and description:

Group

The name of a Group to uniquely identify a group of systems. The name can be up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters.

A Group name is an arbitrary name used to identify a group of related CICS systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, or transaction grouping.

Description

Description is free format text up to 36 characters to describe the group.

Each system in the list has the following attributes:

System, Type, Image

A System is identified by the combination of:

- System name which is one of the following depending on the type:
    - CICS generic APPLID
    - MVS (SMF) Image ID
    - DB2 Subsystem ID
    - WebSphere MQ Subsystem ID
    - MVS System Logger
- Type of System: CICS, Image, DB2, MQ, or Logger
- MVS (SMF) Image ID

You can enter a system name directly. Alternatively, to select one or more from a list, enter the line action **S** or press **Prompt** (F4) from the System field.

Description

Description is free format text up to 36 characters to describe the system. This is for your reference only, although CICS PA will insert it as a comment in your Report Set JCL.

Line Actions: The following line actions can be entered against any row in the list of related Systems:

/ Display the menu of line actions.
S Select System(s) from a list.
I Insert a blank row after this row to specify a related System.
R Repeat this row.
C Copy this row.
M Move this row.
A Move/Copy after this row.
B Move/Copy before this row.
D Delete this row. Only the relationship is deleted, not the System itself.

Note: You can only specify known Systems; you cannot define new Systems from this panel.

Primary Commands: The following primary commands are valid for this panel:

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string need only be enclosed in quotes if there are embedded spaces. The search is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data. To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** or **RFIND** to search from the top.

If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

Also available from **Edit** in the action bar.

SORT SYSTEM|TYPE|IMAGE|DESCription

This command sorts the list of Systems on the specified column. The default is SYSTEM (then TYPE and IMAGE). The order is retained on exit.

Also available from **Edit** in the action bar.

RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar

Select Systems

The Select Systems panel is displayed when you press **Prompt** (F4) from a System field or enter line action **S** on the Systems in this Group panel.

It displays the systems that are not already defined to the Group. This list is a subset of the systems maintained in the System Definitions view (see Figure 18 on page 61).

```
                             Systems                     Row 1 to 4 of 4
   Command ===> _____ Scroll ===> ____

   Select one or more Systems then press EXIT.

      System +  Type     Image               Description
   .  CICSP001  CICS     MVS1      CICS system CICSP001/MVS1
   .  CICSD001  CICS               CICS system CICSD001
   .  DB2P      DB2      MVS1      DB2 subsystem DB2P/MVS1
   .  MVS1      Logger             MVS system MVS1
   ************************** End of List *********************************
```

Figure 42. System Definitions: Select Systems (for a Group)

This panel displays a list of systems that are available for selection.

Enter a **/** or **S** line action to select one or more systems from the list.

Press **Exit** (F3) to complete your selection.

Personal Take-Up from SMF File

The Data Take-up panel is displayed when you select option 4 **Take-Up from SMF File** from the System Definitions Menu. However, if you opted to bypass the menu and go straight to System Definitions, you can redisplay the Menu by selecting **View->Menu** in the action bar or by entering the **MENU** command.

```
   File  Options  Help
  ----------------------------------------------------------------
                      Data Take-Up from SMF
   Command ===> _____

   Specify the SMF File for data take-up.

   Data Set Name . . . 'CICSPA.LOGGER.SMFDATA1'_____

   Specify details if data set is not cataloged:
    UNIT  . . . . . _____  +       VOLSER  . . . _____   +
    SEQ Number  . . ___  (1 to 255)

   Execution Mode:
   1  1. Submit Batch JCL
      2. Edit Batch JCL


    F1=Help    F3=Exit    F4=Prompt  F6=Resize  F10=Actions
   F12=Cancel
```

Figure 43. Personal System Definitions: Take-Up from SMF File

CICS PA can automatically populate your System Definitions with details extracted from SMF Files. This panel allows you to specify details of an SMF File for data take-up.

Specify the data set name and if not cataloged, the unit, sequence number, and up to 16 volume serial numbers.

A batch job is generated to extract the take-up details from the SMF data set. You can choose to submit the job immediately or first edit the JCL. See "Take-Up JCL" on page 96.

Personal Take-Up from SMF File

The options are:

Data Set Name

The name of an SMF data set from which you want CICS PA to extract System details for automatic take-up into your System Definitions.

Normal ISPF data set conventions apply. Fully qualified data set names must be enclosed in quotes, except if **PROFILE NOPREFIX** is set.

If the data set is not cataloged, then specify UNIT, SEQ, or VOLSER

UNIT The generic or esoteric device type of the data set, such as 3390, SYSDA, or CART. This must be a device type that is defined as either TAPE or DASD in the Eligible Device Table of the current processor. To select one from a list of possible Units, position the cursor on the UNIT field and press **Prompt** (F4). See Figure 24 on page 72 for an example of the Unit selection list.

SEQ The File Sequence Number is only required for uncataloged tape data sets. It identifies the relative position of the data set on a tape volume. Omit, or code 0 or 1 to indicate the first data set on the tape volume.

VOLSER

The volume serial number of the data set. It is only required for uncataloged data sets. If a VOLSER is specified, then a UNIT must also be specified.

If the data set spans multiple volumes, only the first one is displayed on this panel. To specify up to 16 volumes, position the cursor on the VOLSER field and press **Prompt** (F4) to display the VOLSER List. See Figure 25 on page 73 for an example of the VOLSER List.

Execution Mode

Specify **1** to submit the batch job immediately.

Specify **2** to edit the JCL. From the edit panel, then enter the **SUBMIT** (or **SUB**) command to run the job.

Check the results of the batch job. See "Job output" on page 97.

When you next invoke System Definitions, you will be prompted to update your System Definitions with the results of the batch job. See "Applying Take-Up details" on page 97.

Take-Up JCL

Figure 44 on page 97 is an example of the JCL that is generated to extract the take-up details from the SMF file.

```
  File  Edit  Confirm  Menu  Utilities  Compilers  Test  Help
 ------------------------------------------------------------------------------
 EDIT       user.SPFTEMP1.CNTL                          Columns 00001 00072
 Command ===> SUB_____ Scroll ===> PAGE
 ****** ************************** Top of Data *****************************
 000001 //CICSPA JOB (ACCOUNT),'NAME',REGION=4M
 000002 //* CICS PA V2R1 Take-Up JCL
 000003 //CICSPA   EXEC PGM=CPASIDTU
 000004 //STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,
 000005 //             DISP=SHR
 000006 //CPATABL  DD  DSN=user.CICSPA.TABL,
 000007 //             DISP=SHR
 000008 //SYSPRINT DD  SYSOUT=*
 000009 //SMFIN001 DD  DSN=CICSPA.LOGGER.SMFDATA1,
 000010 //             DISP=SHR
 ****** ************************** Bottom of Data **************************
```

Figure 44. Personal System Definitions: JCL for data take-up

Job output

Review the take-up job output to see the systems detected by CICS PA in the SMF file.

```
V2R1M0    17:29:39  1/13/2005    CICS Performance Analyzer    Page  1
                              Personal Systems Take-up from SMF

CPA2012I  Processing started for SMF file SMFIN001
CPA2017I  SMF records for System MVS1 start at 1/13/2005 15:41:38.39
CPA2014I  CMF record for CICS system found, APPLID=CICPTOR1 Release=6.5.0
CPA2014I  CMF record for CICS system found, APPLID=CICPAOR1 Release=6.5.0
CPA2014I  CMF record for CICS system found, APPLID=CICPAOR2 Release=6.5.0
CPA2014I  CMF record for CICS system found, APPLID=CICPDOR1 Release=6.5.0
CPA2015I  DB2 Accounting record found, DB2 SSID=DB2P Release=8.1
CPA2016I  MVS System Logger record found, System=MVS1LOGR
CPA2013I  Processing ended for SMF file SMFIN001 - 6 systems found
CPA2000I  Take-up processing has completed, RC=0
```

Figure 45. Personal System Definitions: Take-up job output

Once the take-up job has completed, you can then apply the results of the Take-up. Next time you enter System Definitions, you will be prompted to apply the results of Take-up.

Applying Take-Up details

The following panel is displayed on entry to System Definitions when you have not yet processed the results of completed batch take-up jobs.

Personal Take-Up from SMF File

```
                      Data Take-Up from SMF
Command ===> _____


        *********************************************
        *              Take-Up from SMF             *
        *********************************************

CICS PA has completed extracting systems from the following
SMF File:

Data Set . . :'CICSPA.LOGGER.SMFDATA1'

Instructions:
  Press ENTER to continue adding the systems.
  Enter DEFER command to defer adding the systems.
  Enter END or CANCEL command to cancel adding the systems.
```

Figure 46. Personal System Definitions: Take-up (apply results)

You have three choices:

- Press **Enter** to proceed with the take-up. CICS PA merges the results of the take-up into your System Definitions. Only systems and files not already defined are added.
- Enter the **DEFER** command to defer the take-up but proceed with System Definitions as normal. Next time you invoke System Definitions you will again be prompted to process the results of the take-up.
- Enter **END** (F3) or **CANCEL** (F12) to discard the results of the take-up and continue with System Definitions as normal.

Example: Working with Personal Systems

The System Definitions facility in the CICS PA dialog requires some planning to ensure that you are able to best meet your reporting requirements. CICS PA has some powerful features that will help you to define your System Definitions. This section provides some useful tips on how to use these features.

As you work through this example, if you do not understand some points, please refer to Chapter 5, "Personal System Definitions," on page 53 for clarification.

1. **The System Definitions menu.**

   From the Primary Option Menu, option 1 **System Definitions** takes you to the System Definitions menu. From this menu, you are able to define your CICS systems, and maintain your SMF Files and Groups.

2. **Using Take-up to define your CICS systems.**

   You can explicitly define you CICS systems, but an easier way to define your systems is by using option 4 **Take-up from SMF File.** Take-up populates your System Definitions with systems found in your SMF File.

```
   File  Options  Help
 ----------------------------------------------------------------
                      Data Take-Up from SMF
 Command ===> _____

 Specify the SMF File for data take-up.

 Data Set Name . . . 'MVS1.SMFDATA'_____

 Specify details if data set is not cataloged:
 UNIT  . . . . .  _____  +       VOLSER  . . .  _____  +
 SEQ Number  . .  ___  (1 to 255)

 Execution Mode:
 1  1. Submit Batch JCL
    2. Edit Batch JCL
```

Specify the SMF File that contains your CMF records then press Enter to submit the Take-up job.

Review the Take-up job output to see the systems detected by CICS PA in the File.

```
V2R1M0    17:29:39  1/13/2005    CICS Performance Analyzer    Page  1
                                 Take-up from SMF

CPA2012I  Processing started for SMF file SMFIN001
CPA2017I  SMF records for System MVS1 start at 1/13/2005 15:41:38.39
CPA2014I  CMF record for CICS system found, APPLID=CICPTOR1 Release=6.5.0
CPA2014I  CMF record for CICS system found, APPLID=CICPAOR1 Release=6.5.0
CPA2014I  CMF record for CICS system found, APPLID=CICPAOR2 Release=6.5.0
CPA2014I  CMF record for CICS system found, APPLID=CICPDOR1 Release=6.5.0
CPA2015I  DB2 Accounting record found, DB2 SSID=DB2P Release=8.1
CPA2016I  MVS System Logger record found, System=MVS1LOGR
CPA2013I  Processing ended for SMF file SMFIN001 - 6 systems found
CPA2000I  Take-up processing has completed, RC=0
```

Once the take-up job has completed, you can then apply the results of the Take-up. Next time you enter System Definitions, you will be prompted to apply the results of Take-up.

```
                      Data Take-Up from SMF
 Command ===> _____
        *********************************************
        *              Take-Up from SMF             *
        *********************************************

 CICS PA has completed extracting systems from the following
 SMF File:

 Data Set . . : 'MVS1.SMFDATA'

 Instructions:
   Press ENTER to continue adding the systems.
   Enter DEFER command to defer adding the systems.
   Enter END or CANCEL command to cancel adding the systems.
```

Press Enter to complete the Take-up process.

3. **Updating your System Definitions.**

Example: Working with Personal Systems

You can now update your System Definitions by using option 1 **Define Systems, SMF Files and Groups.**

```
                          System Definitions              Row 1 from 7
Command ===> _____ Scroll ===> PAGE

Select a System to edit its definition, SMF Files and Groups.
                                                            SMF Files
/   System   Type     Image           Description          System
_   MVS1     Image                    Production MVS Image is MVS1    MVS1
_   CICPAOR1 CICS     MVS1     Production AOR #1            MVS1
_   CICPAOR2 CICS     MVS1     Production AOR #2            MVS1
_   CICPDOR1 CICS     MVS1     Production DOR #1            MVS1
_   CICPTOR1 CICS     MVS1     Production TOR #1            MVS1
_   DB2P     DB2      MVS1     Production DB2 subsystem     MVS1
_   MVS1LOGR Logger   MVS1     System Logger for Image MVS1    MVS1
******************************* End of list *******************************
```

You will notice that your CICS (and possibly DB2, MQ and System Logger) systems will be defined. Update the System descriptions for easier identification.

Note the SMF Files indicators. Image MVS1 "owns" the SMF File, MVS1.SMFDATA. All other systems can use Image MVS1's file because their definitions specify the same Image name of MVS1, that is, these systems execute on Image MVS1.

The systems are now ready for immediate reporting, however we will assign the systems to a Group to demonstrate Cross-System style reporting.

4. **Defining a Group.**

   You can group your systems together by defining them to a Group by using option 3 **Maintain Group definitions.** Use the **NEW** command to define a new Group.

```
                          Systems in this Group           Row 1 to 1 of 1
Command ===> _____ Scroll ===> PAGE

Group . . . . . . PROD
Description . . . Production CICS MRO Group

/   System +  Type  Image                Description
S   _____                     _____
******************************* End of list **************************
```

Use the **S** line action to select systems for Group PROD.

```
                         Systems                    Row 1 to 11 of 11
Command ===> _____      Scroll ===> PAGE

Select one or more Systems then press EXIT.

   System   Type     Image                 Description
S  CICPAOR1 CICS     MVS1      Production AOR #1
S  CICPAOR2 CICS     MVS1      Production AOR #2
S  CICPDOR1 CICS     MVS1      Production DOR #1
S  CICPTOR1 CICS     MVS1      Production TOR #1
S  DB2P     DB2      MVS1      Production DB2 subsystem
_  MVS1     Image              Production MVS Image is MVS1
S  MVS1LOGR Logger   MVS1      System Logger for Image MVS1
************************** End of List **************************
```

All CICS systems, the DB2 subsystem and the System Logger are selected.
Exit to insert these systems into Group PROD.

```
                      Systems in this Group                Row 1 to 6
Command ===> _____      Scroll ===> PAGE

Group . . . . . . PROD
Description . . . Production CICS MRO Group

/  System +  Type     Image                 Description
_  CICPAOR1  CICS     MVS1      Production AOR #1
_  CICPAOR2  CICS     MVS1      Production AOR #2
_  CICPDOR1  CICS     MVS1      Production DOR #1
_  CICPTOR1  CICS     MVS1      Production TOR #1
_  DB2P      DB2      MVS1      Production DB2 subsystem
_  MVS1LOGR  Logger   MVS1      System Logger for Image MVS1
****************************** End of list ****************************
```

Group PROD is now ready for immediate reporting.

5. **Running a Report Set.**

   Select Primary Option Menu option 2 **Report Sets** to invoke the Report Sets
   facility.

   This section will not go into the detail of specifying reports in a Report Set, but
   rather give examples of how to specify System Selection at run time. Note that
   you can specify the System(s) to be reported by defining them explicitly in the
   Report Set, but we will specify them at run time.

```
                         Report Sets                    Row 1 to 4 of 4
Command ===> _____      Scroll ===> PAGE

Report Sets Data Set  . . : user.CICSPA.RSET

 /    Name          Description              Changed        ID
___. CROSSSYS Cross-System reporting       2005/01/13 16:08 CICSPA
___   DAILY    Daily CICS Performance reports 2005/01/13 16:08 CICSPA
RUN   DB2      DB2 reporting                2005/01/13 16:08 CICSPA
___   WEEKLY   Weekly CICS Performance reports 2005/01/13 16:09 CICSPA
****************************** End of list ****************************
```

Example: Working with Personal Systems

Enter the **RUN** command to run Report Set DB2. This displays the Run Report Set panel from where you are able to specify the Systems to be reported.

6. **Running a Report Set against an individual System.**

To run a Report Set against an individual System, specify the CICS APPLID, DB2 SSID, MQ SSID, or Logger system name. In this example, we will run the DB2 Report Set against CICS APPLID CICPDOR1 that uses DB2 SSID DB2P.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                            Run Report Set DB2
  Command ===> _____

  Specify run Report Set submission options then press Enter to continue submit.

  System Selection:
   CICS APPLID . . CICPDOR1  +  Image . . MVS1____  +  Group . . _____  +
   DB2 SSID  . . . DB2P  +      Image . . MVS1____  +  Group . . _____  +
   MQ SSID   . . . ____  +      Image . . _____  +  Group . . _____  +
   Logger  . . . . _____  +  Image . . _____  +  Group . . _____  +

    _  Override System Selections specified in Report Set


                                      ------ Report Interval -----
 Missing SMF Files Option:                 YYYY/MM/DD  HH:MM:SS.TH
 2  1. Issue error message            From 2004/12/08  09:00:00.00
    2. Leave DSN unresolved in JCL    To   2004/12/08  16:00:00.00
    3. Disregard offending reports

 Enter "/" to select option
 /  Edit JCL before submit

   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

The generated JCL will request the DB2 report to be run against the specified CICS APPLID CICPDOR1 using DB2 SSID DB2P:

```
//JOBNAME JOB (ACCOUNT),'NAME'
//* CICS PA V2R1 Report JCL
//CICSPA    EXEC PGM=CPAMAIN
//STEPLIB   DD DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DSN=MVS1.SMFDATA,DISP=SHR
  . . .
//* Command Input
//SYSIN DD *
* Report Set =DB2
* Description=DB2 reporting
        CICSPA SMFSTART(2004/12/08,09:00:00.00),
               SMFSTOP(2004/12/08,16:00:00.00)
* Reports for System=CICPDOR1
*          Image =MVS1
*          Description=Production DOR #1
        CICSPA IN(SMFIN001),
               APPLID(CICPDOR1),
             DB2(OUTPUT(DB2R0001),
                 SSID(DB2P),
                 LONGSUM)
        /*
```

Notice that the APPLID and SSID operands specify the CICS generic APPLID and DB2 Subsystem ID that were requested for reporting.

7. **Running a Report Set against a Group of Systems.**

   To run a Report Set against a Group, specify the Group name. In this example, we will run the CROSSSYS Report Set against Group PROD.

```
                       Run Report Set CROSSSYS
 Command ===> _____

 Specify run Report Set submission options then press Enter to continue submit.

 System Selection:
  CICS APPLID . . _____  +  Image . . _____  +  Group . . PROD____  +
  DB2 SSID  . . . ____  +       Image . . _____  +  Group . . _____  +
  MQ SSID   . . . ____  +       Image . . _____  +  Group . . _____  +
  Logger  . . . . _____  +  Image . . _____  +  Group . . _____  +

  _   Override System Selections specified in Report Set


                                      ------ Report Interval -----
 Missing SMF Files Option:                YYYY/MM/DD  HH:MM:SS.TH
 2  1. Issue error message          From 2004/12/08  09:00:00.00
    2. Leave DSN unresolved in JCL   To   2004/12/08  16:00:00.00
    3. Disregard offending reports

 Enter "/" to select option
 /   Edit JCL before submit

  F1=Help      F3=Exit      F4=Prompt   F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

The generated JCL will request the Cross-System report to be run against the specified Group PROD:

```
//JOBNAME JOB (ACCOUNT),'NAME'
//* CICS PA V2R1 Report JCL
//CICSPA   EXEC PGM=CPAMAIN
//STEPLIB  DD DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DSN=MVS1.SMFDATA,DISP=SHR
  . . .
//* Command Input
//SYSIN DD *
* Report Set =CROSSSYS
* Description=CICS PA Report Set
        CICSPA SMFSTART(2004/12/08,09:00:00.00),
               SMFSTOP(2004/12/08,16:00:00.00)
* Reports for Group=PROD
*            Description=Production CICS MRO Group
        CICSPA IN(SMFIN001),
              APPLID(CICPAOR1,
                     CICPAOR2,
                     CICPTOR1,
                     CICPDOR1),
          CROSS(OUTPUT(CROS0001),
              EXTERNAL(CPAXW001),
              PRINTMULTIPLE,NOPRINTSINGLE,NOWRITE)
/*
```

Example: Working with Personal Systems

Notice that the APPLID operand specifies all CICS generic APPLIDs belonging to group PROD which was the Group requested for reporting.

8. **Running a Report Set against all Systems on an MVS Image.**

   To run a Report Set against an Image, specify the Image name. In this example, we will run the DAILY Report Set against Image MVS1.

```
                          Run Report Set DAILY
 Command ===> _____

 Specify run Report Set submission options then press Enter to continue submit.

 System Selection:
  CICS APPLID . . _____    +  Image . . MVS1____  +  Group . . _____  +
  DB2 SSID  . . . ____   +       Image . . _____  +  Group . . _____  +
  MQ SSID   . . . ____   +       Image . . _____  +  Group . . _____  +
  Logger  . . . . _____   +  Image . . _____   +  Group . . _____  +

  _   Override System Selections specified in Report Set


                                  ------ Report Interval -----
 Missing SMF Files Option:              YYYY/MM/DD  HH:MM:SS.TH
 2  1. Issue error message         From 2004/12/08  09:00:00.00
    2. Leave DSN unresolved in JCL  To   2004/12/08  16:00:00.00
    3. Disregard offending reports

 Enter "/" to select option
 /  Edit JCL before submit

   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

The generated JCL will request the Performance Summary report to be run against the specified Image MVS1:

```
//JOBNAME JOB (ACCOUNT),'NAME'
//* CICS PA V2R1 Report JCL
//CICSPA   EXEC PGM=CPAMAIN
//STEPLIB  DD DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DSN=MVS1.SMFDATA,DISP=SHR
 . . .
//* Command Input
//SYSIN DD *
* Report Set =DAILY
* Description=Daily CICS Performance reports
        CICSPA SMFSTART(2004/12/08,09:00:00.00),
               SMFSTOP(2004/12/08,16:00:00.00)
* Reports for Image=MVS1
*          Description=Production MVS Image is MVS1
        CICSPA IN(SMFIN001),
               NOAPPLID,
           SUMMARY(OUTPUT(SUMM0001),
               INTERVAL(00:15:00),
               BY(STOP,
                  TRAN),
               FIELDS(STOP(TIMES),
                      TRAN,
                      TASKCNT,
                      RESPONSE(AVE),
                      RESPONSE(MAX),
                      DISPATCH(TIME(AVE)),
                      CPU(TIME(AVE)),
                      SUSPEND(TIME(AVE)),
                      DISPWAIT(TIME(AVE)),
                      FCWAIT(TIME(AVE)),
                      FCAMCT(AVE),
                      IRWAIT(TIME(AVE)),
                      SC24UHWM(AVE),
                      SC31UHWM(AVE)),
               TITLE1(
 'Transaction Summary by Time-of-Day                       '))
/*
```

Notice that the NOAPPLID operand specifies that all CICS systems will be reported.

Example: Working with Personal Systems

Chapter 6. Shared System Definitions

CICS PA Shared System Definitions define the CICS and other related systems to be reported via Report Sets or HDB. Shared System Definitions are saved in the HDB Repository, and can be referenced by everyone who shares the same HDB Repository.

Use Shared or Personal?

Shared System Definitions offer an alternative to using personal System Definitions, option 1 from the Primary Option Menu (see Chapter 5, "Personal System Definitions," on page 53). The advantages of using Shared System Definitions include:

- All CICS PA users can share the same definitions, avoiding duplication.
- SMF File selection for batch reporting requests is automated.
- One or more Personal System Definitions can be consolidated in to a single Shared System Definition repository by using Take-up.

At Report Set or HDB run time, you can choose to use either Personal or Shared System Definitions to select the SMF input data sets. Use **Systems** in the action bar to switch between Personal and Shared System Definitions.
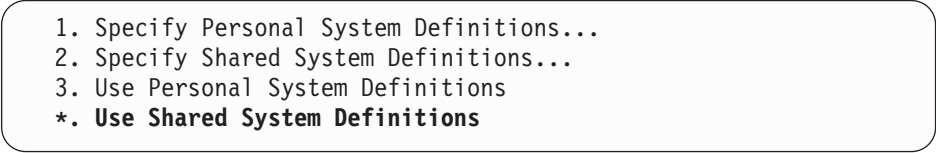
```
1. Specify Personal System Definitions...
2. Specify Shared System Definitions...
3. Use Personal System Definitions
*. Use Shared System Definitions
```

Figure 47. Systems action bar: Use Personal or Shared System Definitions

Shared SMF File definitions

Shared SMF File definitions provide automatic SMF file selection when you generate Report Set or HDB load JCL. There are two types of SMF File definitions, Daily and Cyclic:

Daily files

Daily SMF files span a period of time for the current day (today). They are used when you request reporting for today.

Daily SMF files are typically GDGs, one generation created by each SMF dump (IFASMFDP) job. They can only be defined by the **Take-up from SMF File** facility.

A daily SMF file remains available for reporting until you uncatalog or delete its data set. When a daily SMF data set is uncataloged or deleted, CICS PA marks its SMF file definition as "expired" (no longer available for reporting). To delete expired daily SMF file definitions, run the HDB housekeeping utility.

Cyclic files

There are two types of cyclic SMF file:

Cyclic files with an origin

These files cover a known period of time, according to the origin, interval, and DISP values that you specify. CICS PA uses these values to determine which data sets to select for a requested

reporting period. These cyclic SMF files are typically GDGs. For example, a weekly SMF GDG where the most recent cycle (generation 0) spans the current week, -1 is last week, and so on. CICS PA supports various intervals, including daily, weekly, monthly, yearly and fixed (number of days) cycles.

Cyclic files with no origin

Cyclic SMF files with an origin value of NONE (no origin) cover an undetermined period of time. Specify an origin of NONE when you want to explicitly select a particular SMF data set for reporting, regardless of the reporting period.

You cannot report on a mix of cyclic SMF files with and without origins. If a system contains definitions for cyclic SMF files with and without origins, then you must either exclude the files with no origin, or exclude all of the others.

You specify one or more cyclic SMF file definitions that match the way you collect and manage long-term SMF data at your installation.

File selection at run time

When Shared System Definitions are used, all batch requests (that require SMF input) will have their SMF file DD statements generated automatically from either the Daily or Cyclic definitions. Specify the required reporting interval, and CICS PA will automatically select the required SMF files for your job.

If reporting is required for today, then CICS PA will use the Daily SMF Files (if available). Otherwise, CICS PA will use the Cyclic SMF File definitions to satisfy your request. If no SMF file definitions cover the required reporting interval, then CICS PA will honor the "Missing SMF Files Option" on the run panel.

Shared System Definitions Menu

Shared System Definitions are maintained from the CICS PA Primary Option Menu and saved in the HDB Register.

```
   File   Options   Help
 -------------------------------------------------------------------------------
 V2R1M0            CICS Performance Analyzer — Primary Option Menu
 Option ===> 6_____

 0  CICS PA Profile       Customize your CICS PA dialog profile
 1  Personal Systems      Specify personal CICS Systems, SMF Files and Groups
 2  Report Sets           Request and submit reports and extracts
 3  Report Forms          Define Report Forms
 4  Object Lists          Define Object Lists
 5  Historical Database   Collect and process historical data
 6  Shared Systems        Specify shared CICS Systems, SMF Files and Groups
 7  Statistics            Report CICS Statistics
 X  Exit                  Terminate CICS PA
```

Figure 48. Primary Option Menu: Select Shared Systems

To maintain Shared System Definitions, select option 6 **Shared Systems** from the Primary Option Menu. Alternatively, you can select **Systems** in the action bar of reporting panels (see Figure 47 on page 107). The Shared System Definitions Menu

panel is shown in Figure 49.

```
   File  Options  Help
 ------------------------------------------------------------------------------
                      Shared System Definitions Menu
Command ===> _____

Select an option then press Enter

1  1. Define Systems and their SMF Files
_     2. Maintain Group definitions
      3. Take-up from personal System Definitions
      4. Take-up from SMF File

Enter "/" to select option
_  Always go directly to Systems View

HDB Register . . . 'CICSPA.HDB.REGISTER'_____    +

 F1=Help     F3=Exit     F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 49. Shared System Definitions Menu

Maintaining Shared System Definitions

Select option 1 **Define Systems and their SMF Files** from the Shared System
Definitions Menu.

The list of shared System Definitions is similar to personal System Definitions.

```
   File  Edit  Filter  View   Options  Help
 ------------------------------------------------------------------------------
                      Shared System Definitions              Row 1 from 44
Command ===> new dynamic cics_____ Scroll ===> CSR_

Select a System to edit its definition and SMF Files.
                                                            SMF Files
/   System   Type     Image    Description                  System
    IYK2Z1V2 CICS     MV2CCICS SELUOW Testing               IYK2Z1V2
_   MV2CCICS Image             Image inserted by System IYK2Z1V2
_   A630     CICS     630      CICS TS 2.3 Support testing  A630
_   A@$2     Image             System added by take-up      A@$2
_   A@$2LOGR Logger   A@$2     System added by take-up      A@$2
_   CICS     Image             System added by take-up      CICS
_   SCSCPJA6 CICS     SC66     System added by take-up      SCSCPJA6
_   CICS53A1 CICS     P390     copy from previous one       CICS53A1
_   CICS53T1 CICS     P390     System added by take-up      P390
```

Figure 50. Shared System Definitions: List of systems

Enter the **NEW** command or press **F6** to define a new system, or enter line action **S**
to select a system from the list.

CICS PA supports the following types of system definitions:
• CICS (APPLID)
• MVS Image
• DB2
• MQ
• System Logger

Shared System Definitions

Shared System Definitions differ slightly from personal System Definitions because the file definitions are different.

CICS System (APPLID) definition

The CICS System details are presented across three views:
1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

Press **Next** (F11) or **Prev** (F10) to move between the views.

View 1. System Definition attributes

The first view displays all the System Definition attributes.

```
   File  Dictionary  Options  Help
 ------------------------------------------------------------------------
 EDIT                          CICS System
 Command ===> _____

 CICS System definition:
  APPLID  . . . . . . . . DYNAMIC_  MVS Image . . . _____
  Description . . . . . . ** New CICS system **_____

 System View:
  1  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files

 Specify CICS System Definition:
  CICS Version (VRM)  . . ___
  MCT Suffix  . . . . . . __
  MCT Load Library  . . . _____
  SDFHLOAD Library  . . . _____
  Dictionary DSN  . . . . _____


  F1=Help      F3=Exit      F7=Backward  F8=Forward  F10=Prev      F11=Next
 F12=Cancel
```

Figure 51. Shared CICS System attributes

View 2. Cyclic SMF Files

The second view displays Cyclic SMF File definitions.

Cyclic SMF files are the definitions of SMF Files that cover a continuously recurring period of time, and consistently contain data for this system.

Cyclic SMF files are typically GDGs. For example, a weekly SMF GDG where the most recent cycle (generation 0) spans the current week, -1 is last week, and so on.

You specify one or more Cyclic SMF file definitions that match the way you collect and manage long-term SMF data at your installation. CICS PA supports the many ways you can setup your SMF environment, including daily, weekly, monthly, yearly and fixed (number of days) cycles.

The Cyclic SMF File definitions are used at report request time. Cyclic SMF Files are automatically inserted into your Report request JCL when you request reporting

for a time period that is spanned by an active generation of a cycle, and Shared System Definitions are active (not Personal. Refer to **Systems** in the action bar when submitting a Report request).

For systems that share SMF Files, it is recommended that Cyclic SMF Files be defined to the associated MVS Image (rather than each System repetitively). CICS PA will detect this and use the SMF Files defined to the Image.

```
   File  Edit  Options  Help
 -------------------------------------------------------------------------------
 EDIT                            CICS System               Row 1 of 1 More: < >
 Command ===> _____ Scroll ===> PAGE

 CICS System definition:
  APPLID  . . . . . . . . DYNAMIC_  MVS Image . . . _____
  Description . . . . . . ** New CICS system **_____

 System View:
  2  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files

 / Exc Cyclic SMF File GDG Base or Data Set Name       Origin      Interval DISP
 _   _____ _____ _____   ___
 ****************************** Bottom of data ********************************



  F1=Help      F3=Exit      F5=Rfind     F7=Backward  F8=Forward  F10=Prev
 F11=Next      F12=Cancel
```

Figure 52. Shared CICS System Cyclic SMF Files

The Cyclic File details are:

Cyclic SMF File GDG Base or Data Set Name
The SMF File GDG Base name, or the SMF File data set name. For example:

```
'SMF.MVS1.DAILY'
'CICSPROD.SMF.WEEKLY'
```

You can use the following symbolic variables in an SMF File data set name:
&YYYY   4-digit year
&YY   2-digit year (20*yy*)
&MM   Month (01–12)
&DD   Day of the month (01–31)
&DDD   Day of the year (001–366)

For example:

```
'CICSPROD.SMF.D&YY&MM&DD'
'CICSPROD.SMF.D&YY.&MM.&DD'
```

You can optionally terminate a variable name with a period. This period will not appear in the resolved data set name (the two examples above resolve to the same name). If you want a period to appear after a variable value in the resolved name, insert a second period:

```
'CICSPROD.SMF.Y&YYYY..D&DDD'
```

If you use symbolic variables:
• In the Origin field, use asterisks to represent the digits of the origin date that are determined by symbolic variables.

- The origin date and the interval must be compatible with the symbolic variables. For example, if you use the variable &DDD, then the origin date must be in Julian format.

Origin The starting point of each new interval, defining the point in time when the SMF file was created. Origin can be:

Day A new cycle starts every day, defining a daily cycle.

Day of the week
A new cycle starts on the specified day, defining the start of a weekly cycle. Allowed values are the seven days of the week: MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY.

Date The first cycle starts on the specified date, and continues cycling forwards from that point in time. Cycles that commence on a date are monthly, yearly or fixed number of days cycles.

If the SMF data set name does not include symbolic variables, then the allowed values are:
    yyyy-mm-dd
    ****-mm-dd
    yyyy-ddd
    ****-ddd

where **** specifies the current year, indicating that the cycle restarts from this point every year.

If the SMF data set name includes symbolic variables, then there are many more allowed values: you use asterisks in the origin value to match the symbolic variables in the data set name. For some examples, see "How CICS PA selects cyclic SMF files for reporting" on page 114.

CDATE
A new cycle starts on the file creation date. The SMF file contains data starting from the date the file was created.

Note: If you specify CDATE, CDATE+*nnn*, or CDATE-*nnn*, and the value resolves to a date earlier than 2000/01/01 (January 1, 2000), then the date is treated as if you had specified 2000/01/01.

CDATE+*nnn*
A new cycle starts *nnn* number of days after the file creation date. That is, the SMF file contains data starting *nnn* number of days after the file was created. For example, CDATE+1 specifies a file that is created before midnight to contain tomorrow's data.

CDATE-*nnn*
A new cycle starts *nnn* number of days before the file creation date. That is, the SMF file contains data starting *nnn* number of days before the file was created. For example, CDATE-5 specifies a file that is created and then filled with data starting from five days ago.

NONE No origin. Specify NONE when you want to explicitly select a particular SMF file for ad-hoc reporting, rather than CICS PA selecting appropriate SMF files for a requested reporting period. You cannot report on a mix of files with and without origins. If a system contains cyclic SMF file definitions with an origin of NONE

and cyclic SMF file definitions with other origin values, then you must either exclude the files with an origin of NONE, or exclude all of the others.

Interval

The time duration of one cycle of data. Interval can be a number of days (0 indicating an indefinite interval) or DAY, WEEK, MONTH, YEAR.

The allowed interval values depend on the Origin specification:

Origin	Interval
DAY	1 (day)
Day of the week	WEEK
Date	All allowed values

DISP Specifies whether the SMF file accumulates (DISP=MOD) data or does not accumulate (DISP=OLD) data over the interval.

DISP=MOD

New cycles commence at the start of an interval, and continuously append new data to the SMF file until the end of the interval. For example, a daily SMF file is created at the start of the day and is continuously updated during the day by the SMF dump process. The most recent generation of the SMF file contains data for the current interval (today). DISP=MOD cycles cover the current interval (up until today).

DISP=OLD

New cycles are created at the end of the interval. For example, a weekly SMF file that is created at the end of the week from the daily SMF files for that week. The most recent generation contains data for the previous interval (last week), not the current interval (this week). Note that a weekly SMF file could also be defined as DISP=MOD if it is being built on a daily basis. DISP=OLD cycles do not cover the current interval. Other cyclic (or Daily) SMF Files are required in this case.

Line Actions: The valid line actions for the Cyclic SMF Files view are:

/	Display the selection list of line actions
I	Insert a blank row for entry of a related file
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row
X	Reverse Exclude Status (CICS PA omits excluded files from report requests)
S	Show a list of the data sets that belong to the GDG base or that match the data set name for this SMF file

Methods of managing SMF data sets

Cyclic file definitions support several methods of managing SMF data sets. Select one (or more) of the following methods that best suits your environment:

GDG SMF files

Generation Data Group data sets span a regular interval: for example, daily, weekly, monthly, yearly, and fixed (number of days) cycles. Define GDG cyclic files by specifying the GDG base name. CICS PA will use this definition when one or more of the generations cover the required reporting period.

SMF files with symbolic date variables

SMF files with symbolic date variables have data set names that change according to the date they were created. For example, `CICSPROD.D&YY&MM&DD..SMF` defines an SMF file that is created daily to contain today's SMF data. In this case, `CICSPROD.D060331.SMF` contains data for March 31, 2006.

SMF files with fixed data set names

SMF files with fixed data set names cover a period of time determined by the interval that you specify. For example, `CICSPROD.JULY.SMF` contains SMF data for the month of July.

Ad-hoc SMF files

Ad-hoc SMF files have fixed data set names, cover an undetermined period of time (an origin value of NONE), and are used for every report request regardless of the requested reporting period. For example, `CICSPROD.SMF` has SMF data that covers a recent time period that you want to use for every report request. Ad-hoc SMF files are selected in the same way as SMF files defined in personal system definitions; that is, they are always selected if not excluded. Ad-hoc SMF files cannot be specified with other cyclic SMF file types as they are incompatible.

How CICS PA selects cyclic SMF files for reporting

You cannot report on a mix of cyclic SMF files with and without origins. If a system contains some cyclic SMF file definitions with origins and some without, then you must either exclude the files with no origin, or exclude all of the others. CICS PA does not select excluded files for reporting.

If you exclude the files with origin values, then CICS PA selects all of the files with no origin, regardless of the requested reporting period.

Otherwise, CICS PA calculates a "from" date and a "to" date for each file, indicating the date range of its SMF records. If this range overlaps or falls entirely within the requested reporting period, then CICS PA may use this file, depending on whether or not other files also meet this requirement. If a sequence of several files covers the same required date range, without gaps, as a single file, then CICS PA uses the sequence of files instead of the single file. CICS PA selects the combination of files that result in the least gap in data, without any overlaps. This ensures that, while a report may contain gaps, it will never contain duplicate data.

CICS PA calculates "from" and "to" dates based on the origin, interval, and DISP values for each cyclic SMF file. The table below shows the allowed combinations of origin, interval, and DISP, and the resulting "from" and "to" dates.

Tip: To view the "from" and "to" date for a cyclic SMF file, enter line action S next to the file definition. To view the "from" and "to" dates for all cyclic SMF files for the system, enter SHOW on the command line.

Table 2. Allowed combinations of origin, interval, and DISP for cyclic SMF files

Origin	Interval	DISP	From date	To date
DAY	1	MOD	Today	
		OLD	Yesterday	
day of week	WEEK	MOD	If *day of week* is today, then the from date is today. Otherwise, the from date is the previous occurrence of that day of the week.	From date + (interval - 1 day) For example, for an interval of WEEK: From date + 6 days
		OLD	As above, but one week prior. For example, if *day of week* is Saturday, and today is Monday, then the from date is not the Saturday just passed, but the Saturday before that.	
yyyy-mm-dd *yyyy-ddd*	DAY WEEK MONTH YEAR *number of days*	MOD	If the range of dates from the origin to "origin + interval" includes today, then the from date is the origin. Otherwise, step the date range forwards one interval at a time until the date range includes today. The from date is the start of that date range.	
		OLD	As above, but one interval prior.	
	0	Not applicable	Origin	Today
****-mm-dd* ****-ddd* See note below for other allowed values.	Any	MOD	Origin (with current year in place of ****)	From date + (interval - 1 day)
		OLD	One interval before the origin	
CDATE CDATE+*nnn* CDATE-*nnn*	DAY WEEK MONTH YEAR *number of days*	Not applicable	File creation date (plus or minus *nnn* days)	From date + (interval - 1 day) For a GDG, only the to date of the latest generation is calculated as above. For earlier generations, the to date is determined by the from date of the next generation.
NONE	Not applicable			

Note: The table above shows the origin values with asterisks that are allowed if you do not use symbolic variables to specify the data set name of the SMF file. If you use symbolic variables, then there are many more allowed combinations of origin values with asterisks: you use asterisks in the origin value to match the symbolic variables in the data set name. For example (this is not a comprehensive list of the combinations):

Table 3. Example SMF data set names with symbolic variables, and their allowed origin values

Data set name	Origin
SMF.DAILY.D&YY.&MM.&DD..SAVE	20**-**-**
SMF.DAILY.D&MM&DD	****-**-**
SMF.DAILY.J&DDD	****-***
SMF.DAILY.D&DD	****-**-**
SMF.MONTHLY.M&YY&MM	20**-**-*dd*
SMF.MONTHLY.M&MM	****-**-*dd*
SMF.A&YYYY	****-*ddd*
SMF.A&YY	****-*mm-dd*
SMF.D&YYYY&DDD	****-***

Verifying that you have correctly defined your cyclic SMF files

CICS PA uses cyclic SMF file definitions to determine which SMF data sets to use for a report request. Except for SMF files with no origin, CICS PA uses the origin, interval, and DISP values in these definitions to calculate the "from" and "to" date range for each SMF file, and uses this range to determine whether to use the file for a particular reporting period.

To verify that you have correctly defined a cyclic SMF file, so that its data sets covers the expected date range, enter line action S next to the file definition.

To show the date ranges for all SMF files for the system, enter SHOW on the command line.

For details on how CICS PA determines these dates, see "How CICS PA selects cyclic SMF files for reporting" on page 114.

```
VIEW      JCH.SPFTEMP1.CNTL                              Columns 00001 00072
Command ===> _____      Scroll ===> PAGE
****** *************************** Top of Data ****************************
000001 //*
000002 //* APPLID  . . . . . . . . DYNAMIC
000003 //* MVS Image . . . . . . .
000004 //* Description . . . . . . ** New CICS system **
000005 //*
000006 //* 1. DSN=CPPX.SMF1.DAILY
000007 //SMFIN001 DD DSN=CPPX.SMF1.DAILY(-11),
000008 //         DISP=SHR  From: 2006/03/25          To: 2006/03/25
000009 //SMFIN002 DD DSN=CPPX.SMF1.DAILY(-10),
000010 //         DISP=SHR  From: 2006/03/26          To: 2006/03/26
000011 //SMFIN003 DD DSN=CPPX.SMF1.DAILY(-9),
000012 //         DISP=SHR  From: 2006/03/27          To: 2006/03/27
000013 //SMFIN004 DD DSN=CPPX.SMF1.DAILY(-8),
000014 //         DISP=SHR  From: 2006/03/28          To: 2006/03/28
000015 //SMFIN005 DD DSN=CPPX.SMF1.DAILY(-7),
000016 //         DISP=SHR  From: 2006/03/29          To: 2006/03/29
000017 //SMFIN006 DD DSN=CPPX.SMF1.DAILY(-6),
```

Figure 53. Showing the available cyclic SMF data sets, and their from and to dates

Cyclic GDG examples

Here are some examples of Cyclic SMF File GDGs.

One day cycle for each day of the week

SMF.DAILY(0) contains data for today, SMF.DAILY(-1) contains data for yesterday, and so on.

```
GDG Base: SMF.DAILY       Origin: DAY       Interval: DAY     DISP: MOD
```

Weekly cycle

Each cycle contains data for a whole week, from Monday to Sunday inclusive. SMF.WEEKLY(0) contains data for previous week starting on Monday, SMF.WEEKLY(-1) contains data for two weeks ago, and so on. Data for this week (starting on Sunday) can only be obtained from the SMF.DAILY cycle.

```
GDG Base: SMF.WEEKLY      Origin: MONDAY     Interval: WEEK    DISP: OLD
```

Monthly cycle

Each cycle contains data for a whole calendar month, from the first of the month to the end. SMF.MONTH(0) contains data for previous calendar month, SMF.MONTH(-1) contains data for two months ago, and so on.

```
GDG Base: SMF.MONTH       Origin: ****-001   Interval: MONTH   DISP: OLD
```

Fixed number of Days cycle

Each cycle contains data for a 28 day period. The oldest cycle starts on 2004-03-07.

```
GDG Base: SMF.DAYS28      Origin: 2004-03-07 Interval: 28      DISP: OLD
```

Yearly cycle

Each cycle contains data for a whole calendar year, from January to December inclusive. SMF.YEAR (0) contains data for last year, SMF.YEAR(-1) contains data for two years ago, and so on..

```
GDG Base: SMF.YEAR        Origin: ****-001   Interval: YEAR    DISP: OLD
```

Cyclic SMF File Data Set Name examples

Here are some examples of Cyclic SMF File data set names.

Today SMF.TODAY contains data for the current day (today).

```
DSN: SMF.TODAY            Origin: DAY        Interval: DAY     DISP: MOD
```

Current week

SMF.WEEK contains data for this week, starting on Monday.

```
DSN: SMF.WEEK             Origin: MONDAY     Interval: WEEK    DISP: MOD
```

Monthly cycle

Each data set contains data the specified calendar month. If the current month is June, then SMF.JUN contains data for this month, SMF.MAY for the previous month, SMF.JUL for last July for example.

```
DSN: SMF.JAN             Origin: ****-01-01  Interval: MONTH   DISP: MOD
DSN: SMF.FEB             Origin: ****-02-01  Interval: MONTH   DISP: MOD
. . .
DSN: SMF.DEC             Origin: ****-12-01  Interval: MONTH   DISP: MOD
```

View 3. Daily SMF Files

Daily SMF Files are the definitions of SMF Files created today that contain data for this system.

```
   File  Options  Help
 --------------------------------------------------------------------------
 EDIT                            CICS System           Row 1 of 67 More: >
 Command ===> _____  Scroll ===> PAGE

 CICS System definition:
  APPLID  . . . . . . . . DYNAMIC_  MVS Image . . . _____
  Description . . . . . . ** New CICS system **_____

 System View:
  3  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files

    SMF Data Set Name                         ------ Start ------ - Stop -
    CICPRO.SMF.G1499V00                       2005-03-17 20.10.05 00.00.00
    CICPRO.SMF.G1496V00                       2005-03-17 16.09.57 *EXPIRED
    CICPRO.SMF.G1494V00                       2005-03-17 12.06.36 *EXPIRED
    CICPRO.SMF.G1493V00                       2005-03-17 10.28.31 *EXPIRED
    CICPRO.SMF.G1491V00                       2005-03-17 08.05.42 *EXPIRED
    CICPRO.SMF.G1489V00                       2005-03-17 04.11.35 *EXPIRED
    CICPRO.SMF.G1487V00                       2005-03-17 00.15.28 *EXPIRED
    CICPRO.SMF.G1485V00                       2005-03-16 20.03.20 *EXPIRED
    CICPRO.SMF.G1483V00                       2005-03-16 16.09.13 *EXPIRED
    CICPRO.SMF.G1481V00                       2005-03-16 14.13.09 *EXPIRED
    CICPRO.SMF.G1479V00                       2005-03-16 11.01.03 *EXPIRED
    CICPRO.SMF.G1478V00                       2005-03-16 08.10.58 *EXPIRED
    CICPRO.SMF.G1476V00                       2005-03-16 04.06.50 *EXPIRED
    CICPRO.SMF.G1474V00                       2005-03-16 00.12.43 *EXPIRED
    CICPRO.SMF.G1472V00                       2005-03-15 20.18.09 *EXPIRED
    CICPRO.SMF.G1471V00                       2005-03-15 17.34.31 *EXPIRED

  F1=Help      F3=Exit     F5=Rfind    F7=Backward  F8=Forward  F10=Prev
 F11=Next      F12=Cancel
```

Figure 54. Shared CICS System Daily SMF Files

The **Take-up from SMF File** process manages the list of SMF Files automatically. Manual updating of Daily SMF File definitions is not required.

JCL to run Take-up is generated from option **4** from the Shared System Definitions Menu. Take-up typically runs as a second step to the SMF Dump process, to keep track of data sets (usually GDGs) created during the day. Refer to SCPASAMP(CPAHDB) for an example of how to run take-up in conjunction with the SMF Dump process.

The Daily SMF File definitions are used at report request time. Daily SMF Files are automatically inserted into your Report request JCL when you request reporting for a time period spanning today and Shared System Definitions are active (not Personal. Refer to **Systems** in the action bar when submitting a Report request).

Use **HDB Housekeeping** to remove expired Daily SMF File definitions from the list.

Image definition

Like CICS System details, Image details are presented across three views:
1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

Press **Next** (F11) or **Prev** (F10) to move between the views.

The first view displays the System Definition attributes.

```
   File  Options  Help
 ------------------------------------------------------------------------
 EDIT                         MVS Image
 Command ===> _____

 MVS Image System definition:
  MVS Image . . . . MVS2____
  Description . . . . . . ** New Image system **_____

 System View:
  1  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files
```

Figure 55. Shared Image attributes

Cyclic and Daily SMF File views for an Image are the same as for a CICS System. Refer to "View 2. Cyclic SMF Files" on page 110 and "View 3. Daily SMF Files" on page 118.

DB2 System definition

Like CICS System details, DB2 System details are presented across three views:
1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

Press **Next** (F11) or **Prev** (F10) to move between the views.

The first view displays the System Definition attributes.

```
   File  Options  Help
 ------------------------------------------------------------------------
 EDIT                         DB2 Subsystem
 Command ===> _____

 DB2 System definition:
  DB2 SSID  . . . . . . . DB2_   MVS Image . . . _____
  Description . . . . . . ** New DB2 system **_____

 System View:
  1  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files

 Specify DB2 Subsystem Definition:
  DB2 Version (VRM) . . . ___
```

Figure 56. Shared DB2 Subsystem attributes

Cyclic and Daily SMF File views for a DB2 System are the same as for a CICS System. Refer to "View 2. Cyclic SMF Files" on page 110 and "View 3. Daily SMF Files" on page 118.

MQ System definition

Like CICS System details, MQ System details are presented across three views:
1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

Press **Next** (F11) or **Prev** (F10) to move between the views.

The first view displays the System Definition attributes.

```
   File   Options   Help
  --------------------------------------------------------------------------
  EDIT                           MQ Subsystem
  Command ===> _____

  MQ System definition:
   MQ SSID . . . . . . . . MQ2_    MVS Image . . . _____
   Description . . . . . . ** New MQ system **_____

  System View:
   1  1. Definition    2. Cyclic SMF Files   3. Daily SMF Files

```

Figure 57. Shared MQ Subsystem attributes

Cyclic and Daily SMF File views for an MQ System are the same as for a CICS System. Refer to "View 2. Cyclic SMF Files" on page 110 and "View 3. Daily SMF Files" on page 118.

Logger System definition

Like CICS System details, Logger details are presented across three views:
1. System Definition attributes
2. Cyclic SMF Files
3. Daily SMF Files

Press **Next** (F11) or **Prev** (F10) to move between the views.

The first view displays the System Definition attributes.

```
  File  Options  Help
 -------------------------------------------------------------------------
EDIT                              System Logger
Command ===> _____

System Logger definition:
 Logger  . . . . . . . . MVSLOG2_  Image . . . _____
 Description . . . . . . ** New LOGGER system **_____

System View:
 1  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files
```

Figure 58. Shared System Logger attributes

Cyclic and Daily SMF File views for a Logger System are the same as for a CICS System. Refer to "View 2. Cyclic SMF Files" on page 110 and "View 3. Daily SMF Files" on page 118.

Maintaining Shared Group Definitions

Select option 2 **Maintain Group definitions** from the Shared System Definitions Menu.

This facility allows you to define groups of systems for reporting purposes.

```
  File  Edit  View  Options  Help
 --------------------------------------------------------------------------------
                              Shared Groups                      Row 1 from 4
Command ===> _____ Scroll ===> ____

Select to review the Systems in the Group.

/   Use  Group                 Description
_    13  PRODMRO1  Production MRO
_    34  WEEKLY    Weekly SMF data
_     8  MONTHLY   Monthly SMF data
S     2  YEARLY    Yearly SMF data
****************************** End of list ******************************

  F1=Help      F3=Exit     F5=Rfind     F6=New      F7=Backward  F8=Forward
F10=Actions  F12=Cancel
```

Figure 59. Shared Group Definitions

Shared Group Definitions operate in a similar way to personal Group Definitions. For more information, refer to "Maintaining Personal Groups" on page 90.

Mass Updating Shared CICS System Definitions

Suppose that, some time ago, you created CICS System Definitions in CICS PA, and specified their CICS VRM as 630 (CICS Transaction Server Version 2.3), matching the current system environment at the time. Perhaps you also specified version-specific data set names for the MCT and SDFHLOAD libraries. Now you have upgraded to a later version of CICS TS, and you want to upgrade your CICS System Definitions in CICS PA to match this change in your system environment. Rather than selecting and then editing each CICS System Definition individually, you can upgrade several (or all of them) together.

Shared System Definitions

For details, see "Mass Updating Personal CICS System Definitions" on page 57.

Take-up from Personal System Definitions

Select option 3 **Take-up from personal System Definitions** from the Shared System Definitions Menu.

Before proceeding with loading your personal systems into the shared definition repository, a confirmation pop-up is displayed.

```
          Take-Up from Personal System Definitions
Command ===> _____

Select the types of definition that you want to copy from
your personal profile library to the HDB register. This does
not replace definitions that already exist in the HDB
register.

Required Definitions:
_   Systems and groups
_   Files

Instructions:
  Press ENTER to continue.
  Enter END or CANCEL to cancel Take-Up.
```

Figure 60. Shared System Definitions: Take-up from personal definitions

This take-up copies the personal system definitions from your personal profile library to the shared system definitions in an HDB register. This makes the definitions available to all users of the HDB register.

You can select the types of definition to copy:

Systems and groups, but not files
> If a group in your personal system definitions already exists in the HDB register, then take-up adds the systems to the group in the HDB register.

Files, but not systems or groups
> Only copies files belonging to systems that already exist in the HDB register.

Systems, groups, and files
> All definitions.

Before performing take-up, delete any personal system definitions that you do not want copied to the HDB register. Consider making a backup copy of your personal profile library and the HDB register.

Take-up does not replace definitions with the same name in the HDB register. If a file with the same data set name exists in both your personal system definitions and the HDB register, then take-up does not affect the file definition in the HDB register.

Take-up copies files to the HDB register as cyclic files with an Origin value of NONE. If the file has an origin, then, after take-up, edit the file definition in the HDB register.

Take-up from SMF File

Select option 4 **Take-up from SMF File** from the Shared System Definitions Menu.

Take-up of Shared Systems from an SMF File optionally performs the following functions:

1. Defines new shared systems, including CICS, DB2, MQ, Logger, and Images
2. Defines Daily SMF Files, and associates them to either Systems with data on the file or its MVS Image

```
   File  Options  Help
 -----------------------------------------------------------------
                        Data Take-Up from SMF
 Command ===> _____

 Specify the SMF File for data take-up.

 Data Set Name . . . 'CICSPA.LOGGER.SMFDATA1'_____

 Required Definitions:      Connect files to:
 /  Systems                 2  1. System
 /  Files                      2. Image

 Recap Report:
   DDname . . . SDTU0001

 Enter "/" to select option
 /  Edit JCL before submit


  F1=Help    F3=Exit    F6=Resize F12=Cancel
```

Figure 61. Shared System Definitions: Take-Up from SMF File

Take-up options

The take-up command is:

```
CICSPA  HDB(TAKEUP,              analyze SMF file contents
       [SYSTEMS,]                load systems
       [FILEIMAGE|FILESYSTEM,]   load files, connect to either image or system
       [OUTPUT(ddname)])         DDname for Recap report output
```

The take-up options are:

SYSTEMS
> CICS, DB2, MQ, Logger systems with data on the SMF File are defined to shared System Definitions. Existing systems are not replaced.

FILESYSTEM
> The SMF file is defined as a daily SMF file for each system that has data in the file.
>
> The advantage of FILESYSTEM is that while the daily SMF file is defined to multiple systems, only SMF files that actually contain data for that system are defined to that system.

FILEIMAGE
> The SMF file is defined as a daily SMF file for the MVS Image.
>
> The advantage of FILEIMAGE is the daily SMF file is defined to a single definition only. Each system (with no SMF files defined) that belongs to this MVS Image use this SMF file.

Example

Consider the following example to help you choose between FILESYSTEM and FILEIMAGE.

Take-up is run against two daily SMF files for Image MVS1:
1. DAILY.SMF(0) contains data for CICS systems CICS1 and CICS2
2. DAILY.SMF(-1) contains data for CICS systems CICS2 and CICS3

The **SYSTEMS** option will define the three CICS systems: CICS1, CICS2 and CICS3, and one image MVS1.

FILEIMAGE defines both SMF files to image MVS1. All three CICS systems are eligible to use both files because each system belongs to image MVS1. The drawback is that CICS3 has no data on generation 0, and CICS1 has no data on generation –1. But at report submission time, CICS PA has no way of knowing which image file has data for the selected system, so both files are selected. For example, reporting against CICS1 will select both files, even though generation –1 contains no relevant data.

FILESYSTEM defines the SMF file to image MVS1, and also defines it to each CICS system that has data on the file. CICS1 has one daily SMF file definition only, generation 0. Now at report submission time, CICS PA will select only generation 0. The drawback is that the file is defined to multiple systems. But this is not really a problem because daily SMF file maintenance is handled automatically by HDB housekeeping which deletes expired daily SMF file definitions, and the dialog itself which ignores expired daily SMF files.

Take-up JCL

Take-up JCL can be generated from the dialog. It is recommended that the take-up JCL is incorporated into your SMF Dump process. Sample job CPAHDB in library SCPASAMP provides an example of how to do this. Refer also to "Example: Working with Shared Systems" on page 128.

Shared System Definitions

```
//CPAHDB   JOB ,CLASS=A,NOTIFY=&SYSUID
//* SMF Dump
//SMFDUMP  EXEC PGM=IFASMFDP
//INDD     DD   DSN=SYS1.MAN1,DISP=SHR
//OUTDD1   DD   DISP=(NEW,CATLG),DSN=CICSPROD.SMFDAILY(+1)
//SYSPRINT DD   SYSOUT=A
//SYSIN    DD   *
  INDD(INDD,OPTIONS(ALL))
  OUTDD(OUTDD1,TYPE(110))
/*
//*
//* CICS PA Take-up, HDB Load, and selected reports
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=(SHR,KEEP),DSN=CICSPROD.SMFDAILY(+1)
//* HDB Register
//CPAHDBRG DD  DISP=SHR,DSN=<CPA.HDB.Register>
//*
//* CICS PA command requests
//SYSIN    DD  *
  CICSPA IN(SMFIN001),
         APPLID(*),

*   Take-up from SMF into Shared System Definitions
    HDB(TAKEUP,SYSTEMS,FILESYSTEM,OUTPUT(TAKEUP)),

*   HDB Load requests
    HDB(LOAD(WEEKLY),OUTPUT(WEEKLY)),
    HDB(LOAD(DAILY),OUTPUT(DAILY)),
    HDB(LOAD(STATS),OUTPUT(STATS)),

*   CMF Performance report requests
    SUMMARY(BY(TRAN),OUTPUT(SUMM0001)),
    WAITANAL(BY(TRAN),OUTPUT(WAIT0001))
/*
```

Figure 62. Sample JCL CPAHDB - SMF Dump, Take-up, HDB Load, then reports

Step 1 is the SMF Dump process that reads online SMF MANx data sets (or other SMF data) and creates an extract data set of SMF records to be used for reporting purposes.

Step 2 is the CICS PA batch process that can perform the following tasks in parallel:

1. Take-up to define the systems and SMF file to shared System Definitions.
2. HDB Load requests to load performance data into Historical Databases.
3. CICS PA Performance reporting to produce one of more reports for performance analysis.

Note that by combining take-up, HDB load and reporting into a single job step, all CICS PA functions can be performed by a single pass of the SMF data.

Take-up Recap report

The following example shows part of the Recap report that is generated at the end of file processing.

The Recap report provides a list of all the Systems with data on the SMF file together with a count of all SMF 110 records on the file.

With this information you can elect to take-up Systems or Files or both, and specify whether to connect the Files to the System or the Image.

Note that the Recap report is showing what is available for take-up from the SMF files, it is *not* showing the results of take-up. Review the Shared System Definitions in the dialog to see the results of take-up.

```
V2R1M0                                    CICS Performance Analyzer
                                 Shared System Take-up Recap Report By Data Set

HDB00001 Printed at 15:54:54  3/14/2005    Data from 16:30:00 03/13/2005 to 12:00:11 03/14/2005              Page    1
                                            -------Start-------  --------Stop-------  -------System-------    Record
 DDname   Data Set Name                        Date     Time       Date     Time      Name    Type   Imag    Count
SMFIN001 CICPRO.SMF.G1443V00                2005-03-13 20.30.00  2005-03-14 12.00.00  SCLOG   Logger FTS2       64
                                                                                      FTS2    Image             64
         CICPRO.SMF.G1442V00                2005-03-14 11.10.38  2005-03-14 12.00.11  CCVT22T CICS   FTS1     3030
                                                                                      FTS1    Image           29390
                                                                                      CCVT31M CICS   FTS1       68
                                                                                      CCVT22C CICS   FTS1    12122
                                                                                      CCVT31T CICS   FTS1      122
                                                                                      CCVT31C CICS   FTS1      323
                                                                                      CCVT23C CICS   FTS1     6426
                                                                                      CCVT13C CICS   FTS1      432
                                                                                      CCVT23T CICS   FTS1     3747
                                                                                      CCVT31CX CICS  FTS1       51
                                                                                      CCVT23CX CICS  FTS1       72
                                                                                      CCVT13CX CICS  FTS1       72
                                                                                      CCVT22CX CICS  FTS1      228
                                                                                      CCVT22M CICS   FTS1      201
                                                                                      CCVT13M CICS   FTS1       72
                                                                                      SCLOG   Logger FTS1      102
         CICPRO.SMF.G1441V00                2005-03-14 10.02.16  2005-03-14 11.10.13  CCVT22T CICS   FTS1     8470
                                                                                      FTS1    Image           34229
                                                                                      CCVT31M CICS   FTS1      272
                                                                                      CCVT22C CICS   FTS1     4655
                                                                                      CCVT31T CICS   FTS1      375
                                                                                      CCVT31C CICS   FTS1      374
                                                                                      CCVT23C CICS   FTS1    12852
                                                                                      CCVT13C CICS   FTS1      360
                                                                                      CCVT23T CICS   FTS1     3600

 V2R1M0                                    CICS Performance Analyzer
                                 Shared System Take-up Recap Report By System

HDB00001 Printed at 15:54:54  3/14/2005    Data from 16:30:00 03/13/2005 to 12:00:11 03/14/2005              Page    3
 -------System-------                                             -------Start-------  --------Stop-------    Record
 Name    Type   Imag  DDname   Data Set Name                        Date     Time       Date     Time        Count
SCLOG   Logger FTS2 SMFIN001 CICPRO.SMF.G1443V00                 2005-03-13 20.30.00  2005-03-14 12.00.00      64
                             CICPRO.SMF.G1437V00                 2005-03-13 16.30.00  2005-03-13 20.00.00      16
FTS2    Image        SMFIN001 CICPRO.SMF.G1443V00                2005-03-13 20.30.00  2005-03-14 12.00.00      64
                             CICPRO.SMF.G1437V00                 2005-03-13 16.30.00  2005-03-13 20.00.00      16
CCVT22T CICS   FTS1         CICPRO.SMF.G1442V00                  2005-03-14 11.10.38  2005-03-14 11.53.40    3030
                             CICPRO.SMF.G1441V00                 2005-03-14 10.02.51  2005-03-14 11.09.00    8470
                             CICPRO.SMF.G1440V00                 2005-03-14 08.21.37  2005-03-14 09.57.37   12685
                             CICPRO.SMF.G1439V00                 2005-03-14 06.25.38  2005-03-14 08.16.59    8544
                             CICPRO.SMF.G1438V00                 2005-03-13 20.09.11  2005-03-14 00.00.00     266
FTS1    Image               CICPRO.SMF.G1442V00                  2005-03-14 11.10.38  2005-03-14 12.00.11   29390
                             CICPRO.SMF.G1441V00                 2005-03-14 10.02.16  2005-03-14 11.10.13   34229
                             CICPRO.SMF.G1440V00                 2005-03-14 08.19.31  2005-03-14 10.02.14   50835
                             CICPRO.SMF.G1439V00                 2005-03-14 06.25.38  2005-03-14 08.18.08   39768
                             CICPRO.SMF.G1438V00                 2005-03-13 20.00.51  2005-03-14 00.00.00    8720
```

Figure 63. Shared System Take-up Recap report

Example: Working with Shared Systems

Consider an MVS Image MVS1 that runs our production CICS regions. We will implement Daily and Cyclic SMF File definitions to help us run our report requests against the SMF data collected for this system.

The first (optional) step is to implement Take-up for Daily SMF Files.

Daily SMF files are recommended when your SMFDUMP process creates extract GDG data sets whenever SMF is switched throughout the day. Daily files allow you to run report requests against today's SMF data without having to explicitly specify the data set names.

It is recommended that you append the take-up step to the end of your SMFDUMP job so that daily data sets are defined automatically. See "Take-up from SMF File" on page 124 for more information.

```
//SMFDUMP  JOB ,CLASS=A,NOTIFY=&SYSUID
//* SMF Dump for MVS Image MVS1
//SMFDUMP  EXEC PGM=IFASMFDP
//INDD     DD   DSN=SYS1.MAN1,DISP=SHR
//OUTDD1   DD   DISP=(NEW,CATLG),DSN=MVS1.SMF(+1)
//SYSPRINT DD   SYSOUT=A
//SYSIN    DD   *
  INDD(INDD,OPTIONS(ALL))
  OUTDD(OUTDD1,TYPE(110))
/*
//* CICS PA Shared System Definitions Take-up
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M
//STEPLIB  DD   DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//SMFIN001 DD   DISP=(SHR,KEEP),DSN=MVS1.SMF(+1)
. . .
//SYSIN    DD   *
 CICSPA IN(SMFIN001),
    HDB(TAKEUP,SYSTEMS,FILEIMAGE,OUTPUT(TAKEUP))
/*
```

Figure 64. SMFDUMP job

CICS PA Take-up will define Image MVS1 if it is not already defined, and attach the new daily SMF file MVS1.SMF(+1) to the system.

The result when you view the daily SMF files for system MVS1 (System View 3) is the list of daily data sets definitions created by take-up, and the time interval they span.

```
  File  Edit  Options  Help
 ------------------------------------------------------------------------------
 EDIT                            MVS Image                    Row 1 of 8 More: >
 Command ===> _____ Scroll ===> CSR_

 MVS Image System definition:
  MVS Image . . . . MVS1____
  Description . . . Image MVS1 that runs CICS Production

 System View:
  3  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files

    SMF Data Set Name                          ------ Start ------ - Stop -
    MVS1.SMF.G1493V00                          2005-03-17 10.38.02 11.57.03
    MVS1.SMF.G1491V00                          2005-03-17 08.00.44 10.20.25
    MVS1.SMF.G1489V00                          2005-03-17 04.01.04 07.56.54
    MVS1.SMF.G1487V00                          2005-03-17 00.01.33 03.57.04
    MVS1.SMF.G1485V00                          2005-03-16 20.03.12 00.00.00
    MVS1.SMF.G1483V00                          2005-03-16 15.52.42 *EXPIRED
    MVS1.SMF.G1481V00                          2005-03-16 14.09.02 *EXPIRED
    MVS1.SMF.G1479V00                          2005-03-16 10.52.18 *EXPIRED
 ***************************** Bottom of data ********************************
```

Figure 65. Shared MQ Subsystem Daily SMF Files

Now when you report against system MVS1 or any of its CICS systems, the daily files will be used when required.

Scroll Left (F10) to view the Cyclic SMF file definitions (System View 2).

In our example below, we have set up a typical SMF configuration:

1. Weekly SMF file GDG where one generation contains data for one week, is built at end of the day from the daily SMF files (defined previously), and is rolled over every Sunday.
2. Monthly SMF file GDG where one generation contains data for one calendar month, and is rolled over on the first day of each month.

```
  File  Edit  Options  Help
 ------------------------------------------------------------------------------
 EDIT                            MVS Image                    Row 1 of 2 More: >
 Command ===> _____ Scroll ===> CSR_

 MVS Image System definition:
  MVS Image . . . . MVS1____
  Description . . . Image MVS1 that runs CICS Production

 System View:
  2  1. Definition   2. Cyclic SMF Files   3. Daily SMF Files

 /  SMF Data Set Name (or GDG Base)             Origin     Interval DISP
 _   'MVS1.SMF.WEEKLY'_____  SUNDAY      WEEK    MOD
 _   'MVS1.SMF.MONTHLY'_____  ****-01-01  MONTH   MOD
 ***************************** Bottom of data ********************************
```

Figure 66. Shared MQ Subsystem Cyclic SMF Files

To use shared System Definitions in preference to personal System Definitions, you need to change your personal profile. The **Systems** action bar is available on all run-time panels, for example Run Report Set. Select option 4 **Use Shared System**

Example: Working with Shared Systems

Definitions.

```
   1. Specify Personal System Definitions...
   2. Specify Shared System Definitions...
   3. Use Personal System Definitions
   *. Use Shared System Definitions
```

Figure 67. Systems action bar: Use Personal or Shared System Definitions

You can now use the shared system definitions and their SMF Files.

Shared SMF File selection is controlled by the Report Interval you specify at run time.

File Selection example 1

In this example, we specify a relative date of 0 (zero) to signify today, say March 17, 2005 (2005-03-17).

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------
                           Run Report Set MYREPS
 Command ===> _____

 Specify run options then press Enter to continue submit.

 System Selection:
  CICS APPLID . . CICSP1__  +  Image . . MVS1____  +  Group . . _____  +
  DB2 SSID  . . . ____   +     Image . . _____  +  Group . . _____  +
  MQ SSID . . . . ____   +     Image . . _____  +  Group . . _____  +
  Logger  . . . . _____  +  Image . . _____  +  Group . . _____  +

  /  Override System Selections specified in Report Set


                                      ----- Report Interval ------
 Missing SMF Files Option:               YYYY/MM/DD  HH:MM:SS.TH
 1  1. Issue error message            From 0_____    06:00:00.00
    2. Leave DSN unresolved in JCL    To   0_____    09:00:00.00
    3. Disregard offending reports

 Enter "/" to select option
 /  Edit JCL before submit
```

Figure 68. Run Report Set: specify relative dates

CICS PA will automatically generate the JCL that includes the daily SMF files that cover this period.

```
//* SMF Files for Image=MVS1
//SMFIN001 DD DSN=MVS1.SMF.G1489V00,DISP=SHR      2005-03-17 04.01.04 07.56.54
//SMFIN002 DD DSN=MVS1.SMF.G1491V00,DISP=SHR      2005-03-17 08.00.44 10.20.25
```

Figure 69. File selection

File Selection example 2

In this example, we specify a date range covering one working week from Monday March 7 to Friday March 11, 2005.

```
   File  Systems  Options  Help
  --------------------------------------------------------------------
                       Run Report Set MYREPS
  Command ===> _____

  Specify run options then press Enter to continue submit.


  System Selection:
   CICS APPLID . . CICSP1__  +  Image . . MVS1____  +  Group . . _____  +
   DB2 SSID . . . ____   +      Image . . _____  +  Group . . _____  +
   MQ SSID . . . . ____   +     Image . . _____  +  Group . . _____  +
   Logger  . . . . _____   +  Image . . _____  +  Group . . _____  +

   /  Override System Selections specified in Report Set


                                      ----- Report Interval ------
  Missing SMF Files Option:                 YYYY/MM/DD  HH:MM:SS.TH
  1  1. Issue error message          From 2005/03/07  _____
     2. Leave DSN unresolved in JCL  To   2005/03/11  _____
     3. Disregard offending reports

  Enter "/" to select option
  /  Edit JCL before submit
```

Figure 70. Run Report Set: specify relative dates

CICS PA will automatically generate the JCL that includes the cyclic SMF files that cover the specified reporting interval.

```
//* SMF Files for Image=MVS1
//SMFIN001 DD DSN=MVS1.SMF.WEEKLY(-1)
```

Figure 71. File selection

CICS PA always chooses the smallest cyclic SMF file that covers the entire reporting period. This explains why, in the previous example, the weekly SMF GDG was chosen ahead of the monthly GDG.

CICS PA also knows the number of generations (GDG LIMIT) for each cycle. Therefore if only four generations of the weekly file are available, a reporting request for 5 weeks ago would be satisfied by the monthly GDG cycle, MVS1.SMF.MONTHLY(-1).

Part 3. Requesting reports using the dialog

The chapters in this part tell you how to use the CICS PA dialog to request reports and extracts and submit them for batch processing.

Chapter 7. Guided Tour: Report Sets reporting

The CICS PA dialog provides you with many features that allow you to request the reports that are specific to your needs. But first, take this guided tour to get you started using the dialog for Report Sets reporting. You will:
- Define the CICS systems to be reported
- Assign the systems to a Group for consolidated reporting
- Request reports to run against SMF data for the defined systems
- Tailor the report output using Report Forms
- Submit your report request to run in batch
- View the report output

After completing the guided tour, you will be ready to take advantage of the many other features of CICS PA and gain an insight into the performance of your CICS systems.

1. Upon entry to the CICS PA dialog, you will be presented with the CICS PA Primary Option Menu. If you are using CICS PA for the first time, you can select option 0 to review or modify your default profile settings, or bypass this option to use the CICS PA defaults.

   Note that if you don't review and complete the profile settings yourself, then CICS PA will allocate new data sets on your behalf when it needs them to save your report requests.

```
  File  Options  Help
 ------------------------------------------------------------------------------
 V2R1M0           CICS Performance Analyzer — Primary Option Menu
 Option ===> 0_____

 0  CICS PA Profile      Customize your CICS PA dialog profile
 1  Personal Systems     Specify personal CICS Systems, SMF Files and Groups
 2  Report Sets          Request and submit reports and extracts
 3  Report Forms         Define Report Forms
 4  Object Lists         Define Object Lists
 5  Historical Database  Collect and process historical data
 6  Shared Systems       Specify shared CICS Systems, SMF Files and Groups
 7  Statistics           Report CICS Statistics
 X  Exit                 Terminate CICS PA
```

2. Before requesting CICS PA reports, you must first define the CICS systems (generic APPLIDs) that you wish to report against. Option 1 from the Primary Option Menu allows you to define your CICS APPLIDs, DB2 Subsystems, and MVS System Logger, group them for reporting purposes, and specify their associated SMF Files. The first time that you select option 1 (System Definitions), you will be presented with a menu. You can choose to bypass this in the future.

Guided Tour: Report Sets reporting

```
  File  Confirm  Options  Help
------------------------------------------------------------
              Personal System Definitions Menu
Command ===> _____

Select an option then press Enter.
 1  1. Define Systems, SMF Files and Groups
    2. Maintain SMF Files
    3. Maintain Group definitions
    4. Take-up from SMF File

Enter "/" to select option
_   Always go directly to Systems View
```

> You can use Take-Up to automatically populate your System and File definitions with details extracted from your SMF Files.
>
> However, we will select option 1 to enter the details manually.

3. The initial System Definitions list will be empty. Enter the **NEW** command to add a new system definition. If systems had already been defined, you could use the **I** line action to insert a new system.

```
  File  Edit  Filter  View  Options  Help
-----------------------------------------------------------------------------
                      Personal System Definitions
Command ===> NEW_____ Scroll ===> ____

Select a System to edit its definition, SMF Files and Groups.
                                                              SMF Files
/   System   Type    Image                   Description      System
******************************** End of list ********************************


System list is empty. Enter the NEW command to add a new System definition.
```

> Now enter the name and type of the new system. We will define system CICSPAOR, our production application owning region. Note that this panel could have been bypassed by entering the NEW command in full. For example, **NEW CICSPAOR CICS**

```
               New System
 Command ===> _____

 Select the name and type of system.


 System Name  . . CICSPAOR


 System Type  . . 1  1. CICS System
                     2. MVS Image
                     3. DB2 Subsystem
                     4. MQ Subsystem
                     5. System Logger
```

4. You only need to specify the APPLID to start reporting, but we will also specify the MVS Image (SMF ID). This will demonstrate how CICS PA allows you to share SMF Files that contain data for more than one system.

```
  File  Edit  Dictionary  View  Options  Help
 ------------------------------------------------------------------------
                            CICS System           Row 1 of 1  More: >
 Command ===> _____ Scroll ===> ____

 CICS System definition:
  APPLID . . . . . . . . CICSPAOR  MVS Image . . MVS1____
  Description  . . . . . Production AOR Region_____
  CICS Version (VRM) . . ___
  MCT Suffix . . . . . . __
  MCT Load Library . . . _____
  SDFHLOAD Library . . . _____
  Dictionary DSN . . . . _____

 / Exc            SMF Data Set Name +              UNIT +  SEQ VOLSER +
 _ _____ _____ ___ _____
 ****************************** End of list ****************************

  F1=Help        F3=Exit        F4=Prompt      F5=Rfind       F6=Resize
  F7=Backward    F8=Forward     F10=Actions    F11=Right      F12=Cancel
```

Because there are a number of fields of possible importance on this panel, we'll pause here to explain some points:

- Context-sensitive help is available throughout the CICS PA dialog on every panel and every entry field. For example, position the cursor on the MCT Suffix field, and press **Help** (F1).

- You must specify the MCT Suffix and MCT Load Library if you want to include User Fields in your reporting. Otherwise, CICS PA will use the system default MCT for the particular CICS version. This is sufficient for our purpose now.

- Input fields with a **+** sign to the right signify that Prompt is available. Simply position the cursor on the input field and press **Prompt** (F4) to select from a list of allowable values. For example, Prompt on SMF Data Set Name will present the list of SMF data sets that you have previously defined.

Guided Tour: Report Sets reporting

Exit to save the CICS system. Note that CICS PA has automatically defined the MVS Image, MVS1. MVS Image entries are identifiable by "Image" in the Type column and the Image column is blank. Your APPLID is listed with a type of CICS and Image MVS1.

5. Now that some systems are defined, you can commence specifying their SMF Files.

   Note that specifying SMF Files is optional. If you don't specify them here, then when it comes time to run your report request, CICS PA will generate JCL with the SMF File data set names unresolved.

   You have a choice as to where you define your SMF Files, depending on whether the files contain data for a single system or multiple systems.

   Define the SMF File to either:

   - The CICS system CICSPAOR if the file contains data for that system only.
   - The Image MVS1 if the file contains data for multiple CICS systems that run on that Image. The file will then be available to all systems defined to that Image. That is, you need only specify the SMF File once to the Image, and all systems defined to that Image will automatically use that File.

   Use the **S** line action to specify the SMF Files. In this case, we have decided to define the SMF Files to the CICS system CICSPAOR.

```
   File  Edit  Filter  View  Options  Help
 ------------------------------------------------------------------------------
                         Personal System Definitions            Row 1 from 2
 Command ===> _____ Scroll ===> ____

 Select a System to edit its definition, SMF Files and Groups.
                                                                 SMF Files
 /   System   Type    Image                 Description          System
 S   CICSPAOR CICS    MVS1       Production AOR Region_____
 _   MVS1     Image              Image inserted by System CICSPAOR___
 ******************************* End of list ********************************
```

6. Now specify the SMF Files for APPLID CICSPAOR. You can specify as many files as you want. CICS PA will process them all (unless they are excluded). It is recommended that the files are specified in time sequence (earliest first), as CICS PA will process them in the order that they are specified. Various line actions are available to help you do this: **I** (Insert), **R** (Repeat), **C** (Copy), **M** (Move), **D** (Delete). Also, you can use the **X** line action to exclude an SMF File from report processing. We will exclude the second file in the list.

```
   File  Edit  Dictionary  View  Options  Help
 ------------------------------------------------------------------------
                             CICS System           Row 1 of 2  More: >
 Command ===> _____ Scroll ===> ____

 CICS System definition:
  APPLID . . . . . . . . CICSPAOR  MVS Image . . MVS1____
  Description  . . . . . Production AOR Region_____
  CICS Version (VRM) . . ___
  MCT Suffix . . . . . . __
  MCT Load Library . . . _____
  SDFHLOAD Library . . . _____
  Dictionary DSN . . . . _____

 / Exc          SMF Data Set Name +              UNIT +  SEQ VOLSER +
 _     'CICSPAOR.CMF.FILE1'_____ _____ ___ _____
 _   * 'CICSPAOR.CMF.FILE2'_____ _____ ___ _____
 ****************************** End of list *****************************

   F1=Help       F3=Exit       F4=Prompt      F5=Rfind      F6=Resize
   F7=Backward   F8=Forward    F10=Actions    F11=Right     F12=Cancel
```

When you become more familiar with the CICS PA dialog, you will probably want to define your systems to Groups. Groups enable you to connect systems together for consolidated reporting. This is especially useful for MRO, APPC or other systems that share workloads.

Scroll **Right** (F11), to specify the Groups that this System belongs to. **More: >** is displayed in the top right corner to remind you. We will define system CICSPAOR to a Group called PRODMRO.

```
   File  Edit  Dictionary  View  Options  Help
 ------------------------------------------------------------------------
                             CICS System           Row 1 of 1  More: >
 Command ===> _____ Scroll ===> ____

 CICS System definition:
  APPLID . . . . . . . . CICSPAOR  MVS Image . . MVS1____
  Description  . . . . . Production AOR Region_____
  CICS Version (VRM) . . ___
  MCT Suffix . . . . . . __
  MCT Load Library . . . _____
  SDFHLOAD Library . . . _____
  Dictionary DSN . . . . _____

 /   Group +              Description
 _   PRODMRO    Production MRO regions_____
 ****************************** End of list *****************************

   F1=Help       F3=Exit       F4=Prompt      F5=Rfind      F6=Resize
   F7=Backward   F8=Forward    F10=Actions    F11=Right     F12=Cancel
```

In the future when you define additional systems, you can also add them to Group PRODMRO. For example, CICSPFOR, the production file-owning region for CICSPAOR.

Exit to update your SMF File and Group specification.

7. System CICSPAOR is now eligible for report processing. You will notice on the right hand side of the panel that the **SMF Files System** indicator is set to

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CICSPAOR. However, if you defined the SMF File to Image MVS1 instead, then the **SMF Files System** indicators for both systems would be set to MVS1, that is, system CICSPAOR will use the SMF Files defined to Image MVS1.

See Chapter 5, "Personal System Definitions," on page 53 and "Report Set JCL generation" on page 282 for more information.

```
   File  Edit  Filter  View  Options  Help
 ------------------------------------------------------------------------------
                          Personal System Definitions            Row 1 from 2
 Command ===> _____ Scroll ===> ____

 Select a System to edit its definition, SMF Files and Groups.

                                                                  SMF Files
 /   System  Type   Image              Description              System
 _   CICSPAOR CICS   MVS1      Production AOR Region_____ CICSPAOR
 _   MVS1     Image            Image inserted by System CICSPAOR___
 ******************************** End of list ********************************
```

System Definitions has two advanced options that you may consider using:

a. System names can specify a masked pattern, for example, CICSP*. All CICS systems matching this pattern will share the system definition, SMF Files, and so on.

b. CICS systems that are not defined here can still be reported, but only if their Image is defined. For example, if CICSPFOR (our production file owning region) also runs on Image MVS1, then at report run-time you can request reporting for this system by specifying a System Selection of CICSPFOR and MVS1, even though CICSPFOR is not defined.

Exit to save your updated System definitions. The initial system definition is complete and you can now move on to requesting reports.

8. To build report requests, specify option 2 from the Primary Option Menu. You will be prompted to create the Report Sets data set. CICS PA saves your report requests in the Report Sets data set.

```
 -------------------- Confirm Create --------------------

 Command ===> _____

  The Report Sets Data Set is not cataloged.

  xxxx.CICSPA.RSET

 Press ENTER to create the data set using default
 allocation settings.

 Press EXIT or CANCEL to return without creating the
 data set.
```

Press Enter to create the Report Sets data set. Otherwise, cancel and go to option 0.3 from the Primary Option Menu to specify the data set name of your choice.

9. The initial Report Sets list will be empty. Use the **NEW** command to create your first Report Set. A Report Set is a member in the Report Sets data set. It contains a series of requested reports that you can run. You can define as many Report Sets as you wish.

```
   File  Systems  Confirm  Options  Help
  ----------------------------------------------------------------------------
                             Report Sets
  Command ===> NEW REPORT1_____  Scroll ===> PAGE

  Report Sets Data Set . . : xxxx.CICSPA.RSET

   /    Name             Description              Changed         ID
  ****************************** End of list ******************************
```

10. You can now start editing your Report Set. We set the Report Set description to **Demonstration Report Set** so that we can easily identify the Report Set.

    The list of available reports is displayed in a tree structure (folder style) where the reports are grouped by category. This is similar to the way in which some PC tools display folders and their contents. The categories can be expanded (to show) or collapsed (to hide) the reports contained within them. Use your mouse as a lightpen or enter line action **S** to expand or collapse the categories and select reports within them.

    Initially, we will request only the Performance List report. Although we do not need to, we will collapse all but the category we are interested in. Enter line action **S** next to **** Reports **** to collapse all categories, and line action **S** next to the **Performance Reports** category to expand it to show the reports it contains.

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```
   File  Systems  Confirm  Options  Help
 -------------------------------------------------------------------------------
 EDIT                       Report Set — REPORT1                     Row 1 of 37
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Demonstration Report Set_____

 Enter "/" to select action.

 S__           ** Reports **                          Active
     -   ___   Options                                No
         ___     Global                               No
     -   ___   Selection Criteria                     No
         ___     Performance                          No
         ___     Exception                            No
     -   S__   Performance Reports                    No
         ___     List                                 No
         ___     List Extended                        No
         ___     Summary                              No
         ___     Totals                               No
         ___     Wait Analysis                        No
         ___     Cross-System Work                    No
         ___     Transaction Group                    No
         ___     BTS                                  No
         ___     Workload Activity                    No
     -   ___   Exception Reports                      No
         ___     List                                 No
         ___     Summary                              No
     -   ___   Transaction Resource Usage Reports     No
         ___     File Usage Summary                   No
         ___     Temporary Storage Usage Summary      No
         ___     Transaction Resource Usage List      No
     -   ___   Subsystem Reports                      No
         ___     DB2                                  No
         ___     WebSphere MQ                         No
         ___     OMEGAMON                             No
     -   ___   System Reports                         No
         ___     System Logger                        No
     -   ___   Performance Graphs                     No
         ___     Transaction Rate                     No
         ___     Transaction Response Time            No
     -   ___   Extracts                               No
         ___     Cross-System Work                    No
         ___     Export                               No
         ___     Record Selection                     No
         ___     HDB Load                             No
         ___     System Logger                        No
               ** End of Reports **

   F1=Help     F3=Exit      F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

11. Use the **S** line action to select the report(s) that you want to produce. We'll select the Performance List report to get the details of every transaction that executed.

```
   File  Systems  Confirm  Options  Help
 --------------------------------------------------------------------------------
 EDIT                       Report Set — REPORT1                    Row 1 of 18
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Demonstration Report Set_____

 Enter "/" to select action.

 ___          ** Reports **                          Active
      +   ___   Options                                No
      +   ___   Selection Criteria                     No
      -   ___   Performance Reports                    No
            S__   List                                 No
            ___   List Extended                        No
            ___   Summary                              No
            ___   Totals                               No
            ___   Wait Analysis                        No
            ___   Cross-System Work                    No
            ___   Transaction Group                    No
            ___   BTS                                  No
            ___   Workload Activity                    No
      +   ___   Exception Reports                      No
      +   ___   Transaction Resource Usage Reports     No
      +   ___   Subsystem Reports                      No
      +   ___   System Reports                         No
      +   ___   Performance Graphs                     No
      +   ___   Extracts                               No
            ** End of Reports **

  F1=Help     F3=Exit      F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

12. The Performance List report options are specified here. The report will run without you specifying any additional options, but you may want to tailor the report.

```
   File  Systems  Options  Help
 --------------------------------------------------------------------------------
                     REPORT1 - Performance List Report
 Command ===> _____

 System Selection:                      Report Output:
  APPLID . . _____   +                 DDname . . . . . . . . . LIST0001
  Image  . . _____   +                 Print Lines per Page . . ___ (1-255)
  Group  . . _____   +

 Report Format:
  Form . . . _____   +
  Title  . . _____

             _____

 Selection Criteria:
  _   Performance

  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

If you want to specify a particular system that this report applies to, enter the system name (or system/image/group combination) in the System Selection.

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Otherwise, with your cursor on the APPLID field, press **Prompt** (F4). A selection list of available systems will be presented.

```
                           Systems                      Row 1 to 1 of 1
 Command ===> _____  Scroll ===> PAGE

 Select a System then press Enter.

     System    Image     Files  Description
 .   CICSPAOR  MVS1       Yes   Production AOR Region
 ******************************** End of list *****************************
```

To select a System, position the cursor on the point-and-shoot line action field and press Enter.

Select the System that you want and CICS PA will set it in System Selection.

```
   File  Systems  Options  Help
 -----------------------------------------------------------------------------
                      REPORT1 - Performance List Report
 Command ===> _____

 System Selection:                      Report Output:
  APPLID . . CICSPAOR  +                  DDname . . . . . . . . . LIST0001
  Image  . . MVS1____  +                  Print Lines per Page . . ___  (1-255)
  Group  . . PRODMRO_  +

 Report Format:
  Form . . . _____   +
  Title  . . _____
             _____

 Selection Criteria:
  _   Performance

  F1=Help     F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

If you decide not to specify the System Selection here, then CICS PA will prompt you at report run-time to specify the System or Group you wish to report against.

13. One important report option that we will discuss later is the **Report Format.** Option 3 from the Primary Option Menu allows you to define your Report Forms. They allow you to tailor the fields that appear in your reports.

   Exit to save your new Report.

14. After you Exit from the report, a list of Reports is presented. You can define as many reports of the same type in a Report Set as you like. Use line action **I** (Insert) to define a new Performance List Report.

```
  File  Filter  Edit  Systems  Options  Help
 ---------------------------------------------------------------------------
                    REPORT1 - Performance List Reports       Row 1 from 1
 Command ===> _____       Scroll ===> PAGE

       ---- System Selection ----                     Selection
 / Exc APPLID +  Image +  Group +   Output     Form +    Criteria
 _     CICSPAOR MVS1____  PRODMRO_  LIST0001   _____     NO
 ****************************** End of list ********************************
```

When you have finished defining your Performance List reports, Exit to save the reports and return to the main Report Set panel.

15. After you have completed specifying all the reports that you want in this Report Set, it is ready to submit. Optionally, you can first save the Report Set in the Report Sets data set by using Exit or issuing the **SAVE** command. Note that this is not a requirement as Report categories and individual reports can be selected for submission independently of the Report Set.

```
  File  Systems  Confirm  Options  Help
 --------------------------------------------------------------------------------
 EDIT                      Report Set — REPORT1                   Row 1 of 18
 Command ===> _____       Scroll ===> PAGE

 Description  . . . . Demonstration Report Set_____

 Enter "/" to select action.

 ___         ** Reports **                         Active
     +  ___   Options                                Yes
     +  ___   Selection Criteria                     No
     -  ___   Performance Reports                    Yes
           ___   List                                Yes
           ___   List Extended                       No
           ___   Summary                             No
           ___   Totals                              No
           ___   Wait Analysis                       No
           ___   Cross-System Work                   No
           ___   Transaction Group                   No
           ___   BTS                                 No
           ___   Workload Activity                   No
     +  ___   Exception Reports                      No
     +  ___   Transaction Resource Usage Reports     No
     +  ___   Subsystem Reports                      No
     +  ___   System Reports                         No
     +  ___   Performance Graphs                     No
     +  ___   Extracts                               No
           ** End of Reports **
```

Observe that the Performance List Report is now Active (Yes). Also observe that the Performance Reports category and the Global Options are automatically Active.

The Active status controls which reports in the Report Set are run when you submit a report request. When you **RUN** a Report Set, only active reports within active categories are selected. You can temporarily override the active status by using the **RUN** line action against required reports and categories.

16. Now you are ready to run the Report Set. We are going to use the **RUN** command. Alternative commands are **JCL** (to view the JCL before submission)

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or **SUBmit** (to submit the job immediately). The RUN command operates like your last JCL or SUB request.

```
   File  Systems  Confirm  Options  Help
 --------------------------------------------------------------------------------
 EDIT                       Report Set — REPORT1                    Row 1 of 18
 Command ===> RUN_____ Scroll ===> PAGE

 Description  . . . . Demonstration Report Set_____

 Enter "/" to select action.

 ___          ** Reports **                          Active
    +   ___   Options                                   Yes
    +   ___   Selection Criteria                        No
    -   ___   Performance Reports                       Yes
            ___   List                                  Yes
            ___   List Extended                         No
            ___   Summary                               No
            ___   Totals                                No
            ___   Wait Analysis                         No
            ___   Cross-System Work                     No
            ___   Transaction Group                     No
            ___   BTS                                   No
            ___   Workload Activity                     No
    +   ___   Exception Reports                         No
    +   ___   Transaction Resource Usage Reports        No
    +   ___   Subsystem Reports                         No
    +   ___   System Reports                            No
    +   ___   Performance Graphs                        No
    +   ___   Extracts                                  No
            ** End of Reports **
```

17. Before CICS PA generates the JCL, you are prompted to supply the following run-time options:

   a. The system(s) to be reported. CICS PA allows you to specify System Selection twice; in the Report Set and here at run time. An Override System Selection option is provided to determine which specification will take precedence in the event of both being specified:

      • When the override option *is not* selected, the run-time System Selection overrides the Report Set Global options only. It does not override any System Selections specified in the individual reports within the Report Set.

      • When the override option *is* selected, the run-time System Selection overrides all System Selections in the Report Set (Global Options and individual reports).

   b. The date and time range of the SMF data that you wish to process. If not specified, CICS PA processes the entire SMF File(s). Note that any time ranges specified in Selection Criteria in your Report Set are then processed normally against this reduced period of data.

   c. Missing SMF Files Option that specifies the remedial action to be taken if you have not defined SMF Files for the systems to be reported.

   d. Option that allows you to edit your JCL prior to submission:
      • Entering the **JCL** command in the previous step, automatically selects this option.
      • Entering the **SUB** command, does not select this option.
      • Entering the **RUN** command, leaves it unchanged from the last save.

```
   File  Systems  Options  Help
 --------------------------------------------------------------------------------
                         Run Report Set REPORT1
  Command ===> _____

  Specify run Report Set submission options then press Enter to continue submit.

  System Selection:
   CICS APPLID . . _____   +  Image . . _____   +  Group . . _____  +
   DB2 SSID  . . . ____   +      Image . . _____   +  Group . . _____  +
   MQ SSID   . . . ____   +      Image . . _____   +  Group . . _____  +
   Logger  . . . . _____   +  Image . . _____   +  Group . . _____  +

    _   Override System Selections specified in Report Set


                                      ------ Report Interval -----
  Missing SMF Files Option:                 YYYY/MM/DD   HH:MM:SS.TH
  2  1. Issue error message           From _____  _____
     2. Leave DSN unresolved in JCL   To   _____  _____
     3. Disregard offending reports

  Enter "/" to select option
  /  Edit JCL before submit

    F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
   F12=Cancel
```

Specifying System Selection at run time will have no effect for the Report Set in this Guided Tour as System Selection was made at the report level, and the override option was not selected.

18. Press Enter to generate the JCL. An ISPF Edit session with the JCL is presented.

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```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-------------------------------------------------------------------------------
EDIT       xxxx.SPFTEMP1.CNTL                            Columns 00001 00072
Command ===> SUB_____ Scroll ===> PAGE
****** **************************** Top of Data ****************************
000001 //USERID JOB (ACCOUNT),'NAME'
000002 //* CICS PA V2R1 Report JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
000005 //SYSPRINT DD SYSOUT=*
000006 //* SMF Input Files
000007 //SMFIN001 DD DSN=CICSPAOR.CMF.FILE1,
000008 //            DISP=SHR
000009 //* Command Input
000010 //SYSIN DD *
000011 * Report Set =REPORT1
000012 * Description=Demonstration Report Set
000013 * Reports for System=CICSPAOR
000014 *           Image =MVS1
000015 *           Description=Production AOR Region
000017         CICSPA IN(SMFIN001),
000018             APPLID(CICSPAOR),
000019             LINECNT(60),
000020             FORMAT(':','/'),
000021         LIST(OUTPUT(LIST0001))
000022 /*
****** ************************** Bottom of Data **************************
```

Make any necessary changes, then enter the **SUBmit** command to submit the job.

19. The output can be viewed using SDSF or ISPF option 3.8, Outlist Utility. The CICS PA dialog automatically assigns each report in the Report Set a unique DDname. This allows you to view each report separately in SDSF by using the **?** action character in the **NP** column.

```
SDSF STATUS DISPLAY ALL CLASSES
COMMAND INPUT ===>                                      SCROLL ===> CSR
NP  JOBNAME JobID    Owner    Prty Queue    C Pos SAff ASys Status PrtDest      SecLabel TGNum TGPct OrigNode
?   USERIDX JOB12345 xxxxxxxx   1 PRINT    A  113                 LOCAL                 1  0.00 LOCAL
```

Then enter the **S** action character to select your report output.

```
SDSF JOB DATA SET DISPLAY - JOB USERIDX  (JOB12345)   LINE 1-5 (5)
COMMAND INPUT ===>                                      SCROLL ===> CSR
NP  DDNAME   StepName ProcStep DSID Owner  C Dest       Rec-Cnt Page-Cnt Byte-Cnt CC  Rmt Node O-Grp-N SecLabel PrMod
    JESMSGLG JES2               2 SEC    X LOCAL         23        1,474  1        1 1            LINE
    JESJCL   JES2               3 SEC    X LOCAL         11          488  1        1 1            LINE
    JESYSMSG JES2               4 SEC    X LOCAL         17        1,034  1        1 1            LINE
    SYSPRINT CICSPA           102 SEC    X LOCAL         47        3,717  1        1 1            LINE
S   LIST0001 CICSPA           103 SEC    X LOCAL        142       17,843  1        1 1            LINE
```

20. Here is an example of the Performance List report that you might see when suitable input data is specified.

```
V2R1M0                              CICS Performance Analyzer
                                        Performance List

LIST0001 Printed at 17:20:04  12/29/2004    Data from 10:07:43  12/28/2004          APPLID CICSPAOR        Page      1

Tran SC Term Userid   RSID Program   TaskNo Stop            Response Dispatch User CPU  Suspend DispWait FC Wait   FCAMRq  IR Wait
                                            Time               Time     Time    Time      Time    Time    Time             Time
CQRY S  0004 CICSUSER       DFHQRY       26 10:09:37.011     .5971    .1371   .0341    .4600   .4553   .0000        0    .0000
CSGM S  0004 CICSUSER       DFHGMM       27 10:09:37.506     .4864    .1624   .0245    .3239   .3234   .0000        0    .0000
CEDA TO 0004 CICSUSER       DFHEDAP      28 10:10:04.867  22.3878   5.9004  1.0167  16.4873   .5643   .0674        1    .0000
CEDA TO 0004 CICSUSER       DFHEDAP      29 10:11:21.675  75.8603   2.7834   .5313  73.0770   .0599   .1231       12    .0000
CEDA TO 0004 CICSUSER       DFHEDAP      30 10:12:35.400  66.0356   1.8070   .4299  64.2286   .0160   .0650       12    .0000
CATR S       CICSUSER       DFHZATR      32 10:15:37.706     .4334    .1143   .0282    .3191   .3187   .0000        0    .0000
CEDA TO 0004 CICSUSER       DFHEDAP      31 10:21:22.924 526.216    2.8898   .3436 523.326    .0217   .0154        1    .0000
CEDA TO 0004 CICSUSER       DFHEDAP      33 10:22:15.994  39.9497   2.5449   .6930  37.4048   .0167   .1159       56    .0000
CEDA TO 0004 CICSUSER       DFHEDAP      34 10:22:26.559   4.2486   1.7076   .7248   2.5411   .0275   .0198       26    .0000
```

21. To fully exploit the wealth of information contained in the CICS Transaction Server CMF Performance record, CICS PA provides a facility called Report Forms that allows you to design your own reports. For example, if you suspect that there is a performance problem with Transient Data, you can create a Report Form that focuses on that aspect of CICS performance.

   To build Report Forms, select option 3 from the Primary Option Menu. You will be prompted to create the Report Forms data set. CICS PA saves your Report Forms in the Report Forms data set.

```
-------------------- Confirm Create --------------------

Command ===> _____

 The Report Forms Data Set is not cataloged.

 xxxx.CICSPA.FORM

Press ENTER to create the data set using default
allocation settings.

Press EXIT or CANCEL to return without creating the
data set.
```

   Press Enter to create the Report Forms data set. Otherwise, cancel and go to option 0.4 from the Primary Option Menu to specify the data set name of your choice.

22. The initial Report Forms list will be empty. You can use the **NEW** command to create your own Report Form, or you can select from the 133 samples provided.

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```
  File  Confirm  Samples  Options  Help
 ------------------------------------------------------------------------------
                               Report Forms
 Command ===> SAMPLES_____ Scroll ===> PAGE

 Report Forms Data Set  . . .  xxxx.CICSPA.FORM

 /   Name      Type             Description          Changed       ID
 ****************************** End of list ********************************

The Report Forms data set is empty. Use the NEW command to create a new
Report Form.
```

> We will use the **SAMPLES** command to select from the list of sample Report
> Forms.

23. Scroll down until you find the sample Report Forms that meet your
    requirements.

```
                     Sample Report Forms   Row 104 to 119 of 133
    Command ===> _____ Scroll ===> CSR_

    Select one or more Sample Report Forms then press EXIT.

       Name      Type             Description
     S TDLST     LIST     Transient Data Activity
     S TDSUM     SUMMARY  Transient Data Activity
     _ TRAPLSUM  SUMMARY  Transactions by Application Tran
     _ TRARTSUM  SUMMARY  Transaction Routing Analysis (3)
     _ TRATDSUM  SUMMARY  Transactions by Applid and TOD
     _ TRORGSUM  SUMMARY  Transactions by Origin Type
     _ TRPGMSUM  SUMMARY  Transactions by Program Name
     _ TRRTESUM  SUMMARY  Transaction Routing Analysis (1)
     _ TRTCLSUM  SUMMARY  Transactions by Tranclass Name
     _ TRTESUM   SUMMARY  Transaction Usage by Terminal ID
     _ TRTODSUM  SUMMARY  Transactions by Time-of-Day
     _ TRTRASUM  SUMMARY  Transaction Routing Analysis (4)
     _ TRUSRSUM  SUMMARY  Transactions by Userid
     _ TSLST     LIST     Temporary Storage Activity
     _ TSSUM     SUMMARY  Temporary Storage Activity
     _ TSWTLST   LIST     Temporary Storage Wait Analysis
```

> We have selected two Report Forms for Transient Data Analysis:
> * TDLST will list all transactions, showing their Transient Data usage.
> * TDSUM will summarize Transient Data usage for each Transaction ID.
>
> Exit to add these Report Forms to your Report Forms data set.

24. The sample Report Forms that you added to your Report Forms data set are
    now available for report processing. But before we leave, let's review Report
    Form TDSUM to familiarize ourselves with the format of the report it will
    produce and introduce some of the features.

    Select TDSUM using the **S** line action to edit/review the Form.

```
  File  Confirm  Samples  Options  Help
 ------------------------------------------------------------------------------
                                  Report Forms              2 members added
 Command ===> _____ Scroll ===> CSR_

 Report Forms Data Set  . . . xxxx.CICSPA.FORM

 /   Name    Type            Description             Changed       ID
 _   TDLST   LIST    Transient Data Activity      2004/11/24 00:00 CICSPA
 S   TDSUM   SUMMARY Transient Data Activity      2004/11/24 00:00 CICSPA
 ***************************** End of list ********************************
```

25. If the Report Form does not meet your reporting requirements, change it by inserting required CMF fields or deleting unrequired fields.

Using the **I** line action, we will insert a new field RESPONSE into the Form. If you know the field name that you wish to insert, overtype the Field Name as shown below. Otherwise you can use the **S** line action to select the field name from a list of allowable fields.

Use the **H** line action to obtain a detailed description of a field.

```
  File  Edit  Confirm  Upgrade  Options  Help
 ------------------------------------------------------------------------------
                     EDIT SUMMARY Report Form - TDSUM     Row 1 of 11 More: >
 Command ===> _____ Scroll ===> CSR_

 Description  . . . . Transient Data Activity_____   Version (VRM): 620

 Selection Criteria:
     Performance                                    Page width . . 132_

     Field    Sort
 /   Name +   K  O  Type     Fn   Description
 __  TRAN____ K  A  _____ ___    Transaction identifier
 I_  TASKCNT_       _____ ___    Total Task count
 __  RESPONSE       _____ AVE    Transaction response time
 __  TDGET___       _____ AVE    Transient data GET requests
 __  TDPURGE_       _____ AVE    Transient data PURGE requests
 __  TDPUT___       _____ AVE    Transient data PUT requests
 H_  TDTOTAL_       _____ AVE    Transient data Total requests
 __  TDWAIT__  TIME___ AVE    VSAM transient data I/O wait time
 __  TDWAIT__  COUNT__ AVE    VSAM transient data I/O wait time
 __  EOR_____       _____ ___    --------------- End of Report ----------------
 __  EOX_____       _____ ___    --------------- End of Extract ---------------
 ******************************* End of list ********************************
```

This Form indicates that:
- The report will be summarized by TRAN, the Transaction identifier.
- 9 fields will be shown in the report, from TRAN in the left-most report column to TDWAIT in the right-most column.
- Statistical averages for RESPONSE, TDGET, TDPURGE, and so on, will be reported.
- TDWAIT will be reported in two (2) columns, the first to show average I/O Wait elapsed time and the second to show the average number of times transactions waited for TD.

- **EOR** indicates where the report line ends. CICS PA automatically adjusts this for you to ensure that the fields you specify fit across the page.
- **EOX** signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. Fields above EOX are included in the extract, those below are ignored. If EOX is not specified, EOR is used.

Exit from the Report Form to save it.

Then exit Report Forms and return to the Primary Option menu.

26. To use the Report Forms in your report requests, again select option 2 from the Primary Option Menu.

Use the **S** line action to resume editing your Report Set REPORT1.

```
   File  Systems  Confirm  Options  Help
 -------------------------------------------------------------------------------
                                    Report Sets               Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Report Sets Data Set . . : xxxx.CICSPA.RSET

  /    Name              Description              Changed        ID
 S__   REPORT1  Demonstration Report Set       2005/01/13 17:59 JCHX
 ******************************* End of list *********************************
```

27. We will select the Performance List and Summary reports so that we can use our Report Forms. In addition, we will select the Performance Selection Criteria so that we can filter our reports to show only the transactions that we are interested in. If the Selection Criteria and Performance Reports categories are not expanded, use line action **S** or your mouse as a lightpen to expand them. Then use line action **S** to select the two reports and Selection Criteria.

```
  File  Systems  Confirm  Options  Help
 ------------------------------------------------------------------------------
 EDIT                      Report Set — REPORT1                   Row 1 of 21
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Demonstration Report Set_____

 Enter "/" to select action.

 ___         ** Reports **                       Active
     -  ___  Options                             Yes
        ___     Global                           Yes
     -  ___  Selection Criteria                  No
        S__    Performance                       No
        ___    Exception                         No
     -  ___  Performance Reports                 Yes
        S__    List                              Yes
        ___    List Extended                     No
        S__    Summary                           No
        ___    Totals                            No
        ___    Wait Analysis                     No
        ___    Cross-System Work                 No
        ___    Transaction Group                 No
        ___    BTS                               No
        ___    Workload Activity                 No
```

28. Selection Criteria enables you to specify report filtering options.

```
  File  Edit  Object Lists  Options  Help
 ------------------------------------------------------------------------------
             REPORT1 - Performance Select Statement     Row 1 of 2 More: >
 Command ===> _____ Scroll ===> CSR_

        Active  --------------- Report Interval ----------------
   Inc  Start   -------- From ---------  ---------- To ---------
   Exc  Stop    DD/MM/YYYY  HH:MM:SS.TH  DD/MM/YYYY  HH:MM:SS.TH

   ___  _____  _____  _____  _____  _____

 -----------------------------------------------------------------------------

   Inc  Field             ----- Value or Range -----  Object
 / Exc  Name +    Type    Value/From       To         List +
 I INC  TRAN____  _____   FIN*_____ _____  _____
 _ INC  TDWAIT__  COUNT   >0_____ _____  _____
 ****************************** End of list ******************************

  F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F11=Right    F12=Cancel
```

We have specified Selection Criteria to ensure that only our Finance transactions (Transaction IDs that start with FIN) that waited for at least one Transient Data request will be reported.

Exit to save your Select Statement.

29. More than one Select Statement can be specified.

Guided Tour: Report Sets reporting

```
  File  Filter  Edit  Options  Help
 -------------------------------------------------------------------------------
                  REPORT1 - Performance Selection Criteria        Row 1 from 1
 Command ===> _____ Scroll ===> CSR_

 / Exc Description
 I     TRAN FIN*;TDWAIT COUNT >0;
 -------------------------------------------------------------------------------
 ******************************** End of list ********************************
```

Exit to save your Selection Criteria.

30. A Report Set can include more than one report of each type. For example, you can request 2 List reports and 3 Summary reports.

    Since we have already defined one List report in our previous edit session, CICS PA presents the list of reports that you can add to or select from.

```
  File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                  REPORT1 - Performance List Reports         Row 1 from 1
 Command ===> _____ Scroll ===> CSR_

       ---- System Selection ----                     Selection
 / Exc  APPLID +  Image +  Group +   Output     Form +     Criteria
 S      CICSPAOR MVS1____ PRODMRO_  LIST0001   _____     NO
 ******************************** End of list ********************************
```

We do not require any additional List reports, so we will select the existing report to modify its options.

31. The Report Form name is specified in the Report Format Form field. You can specify the name of the Report Form, or press **Prompt** (F4) to select a Report Form from a list.

```
  File  Systems  Options  Help
 -------------------------------------------------------------------------------
                  REPORT1 - Performance List Report
 Command ===> _____

 System Selection:                     Report Output:
  APPLID . . CICSPAOR  +                 DDname . . . . . . . . . LIST0001
  Image  . . MVS1____  +                 Print Lines per Page . . ___ (1-255)
  Group  . . PRODMRO_  +

 Report Format:
  Form . . . TDLST___  +
  Title  . . _____
             _____

 Selection Criteria:
  _  Performance
```

Note that Selection Criteria can also be specified here at the report level. If specified here, then for this report only, it takes precedence over the prior global specification.

Exit to save your report request.

```
   File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                     REPORT1 - Performance List Reports        Row 1 from 1
 Command ===> _____ Scroll ===> CSR_

        ---- System Selection ----                      Selection
 /  Exc  APPLID +  Image +  Group +   Output    Form +     Criteria
 _       CICSPAOR MVS1____ PRODMRO_  LIST0001   TDLST___      NO
 ******************************* End of list ********************************
```

We have completed specifying our Performance List reports, so Exit again.

32. CICS PA continues onto the next selected report, in this case the Summary report. As for the previous List report, the Report Form name is specified in the Report Format Form field. Again, you can specify the name of the Report Form, or press **Prompt** (F4) to select a Report Form from a list.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                     REPORT1 - Performance Summary Report
 Command ===> _____

 System Selection:                      Report Output:
  APPLID . . _____  +                  DDname . . . . . . . . . SUMM0001
  Image  . . _____  +                  Print Lines per Page . . ___ (1-255)
  Group  . . _____  +

 Report Format:
  Form . . . TDSUM___  +
  Title  . . _____
             _____

 Reporting Options:
  Time Interval . . 00:01:00  (hh:mm:ss)
  Totals Level  . . 8         (blank or 0-8)

 Selection Criteria:                     Execution Option:
  _  Performance                          /  Use External Sort
```

Note that since we have not specified System Selection in this report, we will be prompted at run time to specify the desired system.

Exit to save your report request.

Guided Tour: Report Sets reporting

```
   File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                     REPORT1 - Performance Summary Reports        Row 1 from 1
 Command ===> _____ Scroll ===> CSR_

         ---- System Selection -----                        Selection
 /  Exc  APPLID +  Image +  Group +   Output     Form +    Criteria
 _       _____  _____ _____   SUMM0001   TDSUM___     NO
 ******************************** End of list ********************************
```

We have completed specifying our Performance Summary reports, so Exit again.

33. Repeat step 15 on page 145 to optionally save the Report Set and step 16 on page 145 to run the report. Note that this time, we will be prompted to specify the System to be reported.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                        Run Report Set REPORT1       System not specified
 Command ===> _____

 Specify run Report Set submission options then press Enter to continue submit.

 System Selection:
  CICS APPLID . . _____  +  Image . . _____  +  Group . . _____  +
  DB2 SSID  . . . ___   +      Image . . _____  +  Group . . _____  +
  MQ SSID   . . . ___   +      Image . . _____  +  Group . . _____  +
  Logger  . . . . _____  +  Image . . _____  +  Group . . _____  +

  _  Override System Selections specified in Report Set

                                       ------ Report Interval -----
 Missing SMF Files Option:                  YYYY/MM/DD  HH:MM:SS.TH
 2  1. Issue error message             From _____  _____
    2. Leave DSN unresolved in JCL     To   _____  _____
    3. Disregard offending reports

 Enter "/" to select option
 /  Edit JCL before submit
```

Press **Help** (F1) to display the long error message.

```
 CPA1028E  Report Set JCL generation failed. System or Group not specified
 CPA1030E  System=N/A, Report=Performance Summary, Output=SUMM0001.
```

This indicates that CICS PA needs to know which system we wish to run the Summary report against.

CICS PA will have positioned the cursor at the System Selection CICS APPLID field, so all you need do is press **Prompt** (F4).

```
                              Systems                        Row 1 to 1 of 1
 Command ===> _____     Scroll ===> CSR_

 Select a System then press Enter.

     System    Image     Files  Description
 S   CICSPAOR  MVS1        Yes  Production AOR Region
 ******************************* End of list *******************************
```

> To select the desired system, position the cursor on the point-and-shoot line action field and press Enter.
>
> CICS PA populates your System Selection and our run Report Set request can proceed.

34. The report JCL will be similar to the JCL in step 18 on page 147, except additional commands will be generated to honor the Selection Criteria and Report Forms that you specified.

```
 . . .
 ===> SUB_____     Scroll ===> CSR_
 . . .
 //* Command Input
 //SYSIN DD *
 * Report Set =REPORT1
         CICSPA IN(SMFIN001),
                 . . .
                 SELECT(PERFORMANCE(
                 INC(TRAN(FIN*)),
                 EXC(TDWAIT(COUNT(0))))),
             LIST(OUTPUT(LIST0001),
                 FIELDS(TRAN,
                         USERID,
                         TASKNO,
                         STOP(TIMET),
                         TDGET,
                         TDPURGE,
                         TDPUT,
                         TDTOTAL,
                         TDWAIT(TIME),
                         TDWAIT(COUNT)),
                 TITLE1(
   'Transaction Transient Data Activity - Detail                    ')),
             SUMMARY(OUTPUT(SUMM0001),
                 . . .
                 FIELDS(TRAN(ASCEND),
                         TASKCNT,
                         RESPONSE(AVE),
                         TDGET(AVE),
                         TDPURGE(AVE),
                         TDPUT(AVE),
                         TDTOTAL(AVE),
                         TDWAIT(TIME(AVE)),
                         TDWAIT(COUNT(AVE))),
                 TITLE1(
   'Transaction Transient Data Activity - Summary                   '))
 /*
```

Make any necessary changes, then enter the **SUBmit** command to submit the job.

Guided Tour: Report Sets reporting

You have now used the CICS PA dialog to generate reports. Please continue to review this chapter to learn about the many additional features of CICS PA. They will help you generate the reports that will meet your specific needs.

Be sure to read and understand Chapter 5, "Personal System Definitions," on page 53. To help with this, you can walk through the example given in "Example: Working with Personal Systems" on page 98.

Chapter 8. Report Sets

A Report Set is used to request a set of reports and extracts. Reporting options and record selection criteria can be specified at the global-level to apply to all the reports and extracts in the Report Set, or at the report-level to apply to the individual report or extract. Report-level specifications take precedence unless at run time you choose to override them.

When you run a Report Set, CICS PA first prompts you to specify run-time options. Then CICS PA generates a one-step JCL deck with a command stream including active reports and extracts in active report categories.

Upgrading Report Sets

CICS PA V1R3 introduced several new features to the ISPF dialog to make reporting requests easier and quicker to perform. The functionality of the Report Set menu was significantly enhanced and remains unchanged in CICS PA V2R1, but for the addition of two new reports and a new extract.

Report Set tree

The presentation of reports within a Report Set was changed in CICS PA V1R3. Reports are now displayed using a tree structure.

The report tree structure is a hierarchical representation of report categories and reports; similar to the way some PC tools display folders and their contents. Report categories act as folders that can expand (to show) and collapse (to hide) the reports contained within them. The **+** or **-** character to the left of each report category shows its current display status, expanded (-) or collapsed (+). This allows you to view only the reports that you are currently interested in. Use your mouse (see below) or line action **S** against a report category to toggle the expand/collapse status of the category.

You can also enter line action **S** at the top of the Reports tree. This will expand all categories that are not already expanded. If all categories are expanded, then it will collapse all categories.

The following example shows the Performance Reports category expanded and all other categories collapsed.

Upgrading Report Sets

```
  File  Systems  Confirm  Options  Help
 ------------------------------------------------------------------------------
 EDIT                        Report Set – MYREPS                      Row 1 of 18
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . CICS PA Report Set_____

 Enter "/" to select action.

 ___         ** Reports **                          Active
    +   ___   Options                                Yes
    +   ___   Selection Criteria                     No
    -   ___   Performance Reports                    Yes
              ___   List                             No
              ___   List Extended                    No
              ___   Summary                          Yes
              ___   Totals                           No
              ___   Wait Analysis                    No
              ___   Cross-System Work                No
              ___   Transaction Group                No
              ___   BTS                              No
              ___   Workload Activity                No
    +   ___   Exception Reports                      No
    +   ___   Transaction Resource Usage Reports     No
    +   ___   Subsystem Reports                      Yes
    +   ___   System Reports                         Yes
    +   ___   Performance Graphs                     No
    +   ___   Extracts                               No
              ** End of Reports **
```

Figure 72. Report Set tree

If your terminal emulation software permits, it is recommended that you configure your Mouse Options to activate the Lightpen function. Then you can flip the display status of Report Categories by (left button) clicking the **+** (to expand) and **-** (to collapse) characters with your mouse. Use of your mouse as a lightpen may vary depending on your terminal emulation software.

Activating reports

Activating reports within a Report Set changed in CICS PA V1R3. Prior to that you needed to select the required report to activate it (the first time). An asterisk ***** next to the report indicated whether the report was active or not. CICS PA V1R3 introduced a new **Active** status indicator, displayed to the right of each report category and report. Change the Active status to Yes to ensure the report is run.

Report categories also have an Active status indicator. When set to Yes, reports in the category with an Active status of Yes will run. When set to No, no reports in the category will run, regardless of their Active status. Note that the Report Options have their Active status set to Yes automatically if there are active reports. This is because the options must always be used. You cannot deactivate them. CICS PA will deactive them only when all reports are deactivated.

You can use line action **A** to activate a report or a report category and you can use line action **D** to deactivate.

You can use line action **AA** against a report category to activate all reports in the report category and the category itself. Line action **DD** will similarly deactivate all. These line actions entered at the top of the Reports tree will activate or deactivate *all* reports and options in the Report Set.

Running Report Sets

The **RUN** command is used to run (submit) Report Sets. It oversees the specification of run-time options and the generation of JCL. The **SUBmit** and **JCL** commands are still available and considered to be specialized RUN requests to either submit JCL immediately or edit JCL before submit.

RUN can also be entered as a line action at the report category and individual report level. The RUN line action temporarily overrides the Active status. When used in this way, the selected categories and reports are run regardless of the Active status.

Figure 73 shows how to use the **RUN** line action to request the Summary, Totals and Wait Analysis Performance reports, as well as all active reports in the Subsystem Reports category, in this case the DB2 report.

```
   File  Systems  Confirm  Options  Help
 ------------------------------------------------------------------------------
 EDIT                      Report Set — MYREPS                      Row 1 of 22
 Command ===> _____    Scroll ===> PAGE

 Description  . . . . CICS PA Report Set_____

 Enter "/" to select action.

 ___         ** Reports **                        Active
    +   ___   Options                              Yes
    +   ___   Selection Criteria                   No
    -   ___   Performance Reports                  Yes
            ___   List                             No
            ___   List Extended                    No
            RUN   Summary                          Yes
            RUN   Totals                           No
            RUN   Wait Analysis                    No
            ___   Cross-System Work                No
            ___   Transaction Group                No
            ___   BTS                              No
            ___   Workload Activity                No
    +   ___   Exception Reports                    No
    +   ___   Transaction Resource Usage Reports   No
    -   RUN   Subsystem Reports                    Yes
            ___   DB2                              Yes
            ___   WebSphere MQ                     No
            ___   OMEGAMON                         No
    -   ___   System Reports                       Yes
            ___   System Logger                    Yes
    +   ___   Performance Graphs                   No
    +   ___   Extracts                             No
            ** End of Reports **

  F1=Help     F3=Exit     F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 73. RUN line action

You can also use RUN line actions in conjunction with the RUN primary command (from the command line). This generates JCL command input for all active reports in all active categories, as well as for categories and reports selected via the RUN line actions.

For more information on running Report Sets, refer to "Running Report Sets" on page 276.

Selection Criteria

The functionality of Selection Criteria has been enhanced. Selection Criteria now supports comparison operators and decimal points. Figure 74 shows how to specify Selection Criteria using both new functions. In this example, records are only selected if Dispatch time is less than or equal to 500 milliseconds and Response time is greater than 1 second. The right hand side of the panel indicates the time units specified; decimal point indicating seconds and no decimal point indicating milliseconds.

```
   File  Edit  Object Lists  Options  Help
  -------------------------------------------------------------------------------
                    MYRESP - Performance Select Statement    Row 1 of 2 More: >
   Command ===> _____ Scroll ===> PAGE

          Active  --------------- Report Interval ----------------
    Inc   Start   -------- From ---------  ---------- To ---------
    Exc   Stop    DD/MM/YYYY  HH:MM:SS.TH  DD/MM/YYYY  HH:MM:SS.TH

  _   ___    _____    _____   _____  _____   _____


  -------------------------------------------------------------------------------

    Inc  Field               ----- Value or Range -----   Object
  / Exc  Name +     Type     Value/From        To         List +
  _  INC  DISPATCH   TIME_    <=500_____ _____   _____   Milliseconds
  _  INC  RESPONSE   _____    >1.0_____ _____    _____    Seconds
  ****************************** End of list ********************************
```

Figure 74. Selection Criteria: comparison operators and decimal point

In CICS PA V1R2, Selection Criteria was only available in Report Sets. Selection Criteria can now be used in Report Forms and the new History Database (see Part 6, "Using the Historical Database (HDB)," on page 525) For example, the Sample Report Form BADFILE reports the top 20 Worst File Request transactions. It specifies Selection Criteria (FCTOTAL>0) to ensure only transactions that use File Control services are considered for reporting.

Report Form Selection Criteria specification has two benefits:

1. Only transactions that use File Control Services (the focus of this Report Form) are selected.
2. CICS PA only processes (sorts) selected records, significantly reducing the time and overhead of generating the report.

Report Set and Report Form Selection Criteria can be used together:

- **Report Form Selection Criteria** typically focuses on the type of data being reported. For example, if your Form is targeting File Control activity then its Selection Criteria can specify FCTOTAL>0 to include only transactions that used File Control services.

  Report Set Selection Criteria generates batch commands using the old SELECT operand.

- **Report Set Selection Criteria** typically focuses on the application targeted by the Form. For example, if the Report is targeting MY application then its Selection Criteria can specify TRAN = MY* to include only transactions in MY application.

  Report Form Selection Criteria generates batch commands using the new SELECT2 operand.

The resultant report will include data for transactions matching MY* that use File Control services. For example:

```
CICSPA  SELECT(PERF(INCL(TRAN(MY*)))),
        SELECT2(PERF(INCL(FCTOTAL(>0)))),...
```

Both SELECT and SELECT2 must match for the record to be processed.

For more information on using Selection Criteria, refer to "Selection Criteria" on page 174.

Maintaining Report Sets

To display the list of Report Sets:

1. Use the **Options** menu on the action bar to nominate the Report Sets data set (if it has not yet been nominated, or you wish to change the data set).
2. Select option 3 **Report Sets** from the CICS PA Primary Option Menu.

```
   File  Systems  Confirm  Options  Help
  -------------------------------------------------------------------------------
                                  Report Sets                Row 1 to 6 of 6
  Command ===> _____ Scroll ===> PAGE

  Report Sets Data Set . . : xxxx.CICSPA.RSET

   /    Name          Description              Changed        ID
  ___   BTS1     BTS Report                  2005/01/01 00:00 CICSPA
  ___   DAILY    Daily CMF Reports           2005/01/01 00:00 CICSPA
  ___   EXCEPT1  Exception Reports           2005/01/01 00:00 CICSPA
  ___   PERF1    Performance Reports         2005/01/01 00:00 CICSPA
  ___   TRANGP1  Transaction Group Report    2005/01/01 00:00 CICSPA
  ___   WEEKLY   Weekly CMF Reports          2005/01/01 00:00 CICSPA
  ******************************** End of list *********************************
```

Figure 75. Report Sets

This panel lists all the Report Sets in the current Report Sets data set and allows you to select one at a time to review, update, or submit for batch processing, or you can create new Report Sets.

The Report Sets are listed with the following user-defined attributes:

Name 1-8 character name in ISPF member name format, used to uniquely identify the Report Set within the Report Sets data set. By default, the panel is sorted on the Name field.

Description
Free format text up to 32 characters that describes the contents and purpose of the Report Set.

In addition, the Report Sets are listed with the following system-generated attributes:

Changed
Date and time when last updated.

ID The userid that last updated the Report Set.

Line Actions: The following line actions can be performed against a Report Set:

/ Display the menu of line actions.

E Edit the Report Set.

S Select the Report Set (same as Edit).

V View the Report Set. This looks like the Edit panel but has no 'hold' on the data and has no Save capability, however SaveAs is available.

RUN Run the Report Set. Only active reports and extracts within active categories are selected. The Run Report Set panel is displayed for you to enter required run-time options prior to submission. See "Running Report Sets" on page 276 for more information. Alternative RUN commands are:

    SUB After your run-time options are validated, JCL is submitted directly for batch processing.

    JCL After your run-time options are validated, JCL is presented in an Edit session. You can alter the JCL prior to submission or save it in your JCL library.

D Delete the Report Set.

R Rename the Report Set.

Primary Commands: The following primary commands are available:

NEW name [MODEL dsn(modelname)]
This command creates a new Report Set. If all required parameters are specified, the Edit panel for the new Report Set is displayed. Otherwise, the New Report Set window is displayed to allow you to specify the name of the new Report Set and optionally the name of an existing Report Set to be used as a model. If the model is in the current Report Sets data set, specify just the name of the Report Set. If it is in another data set, specify both the name of the data set and the Report Set in the format **datasetname(modelname).**

Also available from **File** in the action bar.

See "Creating new Report Sets" on page 165 for information on how to proceed.

SELECT name
This command (or **S**) selects the specified Report Set for editing. If the Report Set does not exist, it is created as if the **NEW** command was used.

Also available from **File** in the action bar.

SORT Name|Description|Changed|Id
This command sorts the list of Report Sets on one or two columns. The default sort field is **Name.** The sort disregards upper and lower case. The sort sequence is ascending for all except the Changed column which is descending. The sort order is retained only until Exit or another SORT command is issued.

LOCATE string
This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

CONFIRM <u>ON</u>|OFF

CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Delete a Report Set.

With **CONFIRM OFF,** Delete requests are actioned immediately. Deleted Report Sets cannot be reinstated.

This command changes the setting only for the current invocation of the Report Sets panel. On exit, it reverts to the default set by **Delete Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

Creating new Report Sets

To create a new Report Set, do either of the following:

- In the command line, enter **NEW** followed by the name of the new Report Set and initialization details using the following syntax:

```
►►──NEW──newname─────────────────────────────────────────────►◄
                    └─MODEL──┬─modelname──────────────┬─┘
                             └─datasetname(modelname)─┘
```

- Select **File** from the action bar, then choose **New.** A pop-up dialog window is displayed as shown in Figure 76.

```
                        New Report Set
Command ===> _____

Specify the name of the new Report Set and optional model.

Name . . . TRANGP2_

Model  . . TRANGP1_____
```

Figure 76. Specifying a New Report Set

This panel allows you to create a new Report Set. You must give the new Report Set a name. Optionally, you can model it on an existing Report Set, otherwise it will be created empty with no reports or extracts defined.

You can bypass this panel by specifying all required details on the **NEW** command.

Name   The name of the new Report Set. A 1-8 character name in ISPF member name format. The name must be unique within the Report Sets data set.

Model   You can specify the name of an existing Report Set as a model so that your new Report Set will be initialized with the same contents as the model. If the model is in the current Report Sets data set, specify just the member name. If it is in another data set, specify both the data set name and the Report Set name in the format **datasetname(modelname).**

When you have specified the required details, press Enter to create the Report Set.

Specifying Report Set contents

The Report Set Edit panel is displayed when, from the Report Sets panel, you do either of the following:

- Request a new Report Set.

  Use the **NEW** command or select **File->New** in the action bar.

- Select an existing Report Set.

  Enter line action **E** or **S** against a Report Set or use the **SELECT** command

Alternatively, you can enter line action **V** to display the Report Set View panel. Viewing a Report Set works in every way like Edit except there is no exclusive hold on the data and changes cannot be saved. However you can use **SAVEAS.**

```
   File  Systems  Confirm  Options  Help
 --------------------------------------------------------------------------------
 EDIT                       Report Set — SAMPLE                    Row 1 of 37
 Command ===> _____  Scroll ===> PAGE

 Description  . . . . Sample CICS PA Report Set_____

 Enter "/" to select action.

 ___           ** Reports **                          Active
      -  ___    Options                                Yes
             ___    Global                             Yes
      -  ___    Selection Criteria                     Yes
             ___    Performance                        Yes
             ___    Exception                          No
      -  ___    Performance Reports                    Yes
             ___    List                               Yes
             ___    List Extended                      Yes
             ___    Summary                            Yes
             ___    Totals                             Yes
             ___    Wait Analysis                      No
             ___    Cross-System Work                  No
             ___    Transaction Group                  Yes
             ___    BTS                                No
             ___    Workload Activity                  No
      -  ___    Exception Reports                      No
             ___    List                               No
             ___    Summary                            No
      -  ___    Transaction Resource Usage Reports     No
             ___    File Usage Summary                 No
             ___    Temporary Storage Usage Summary    No
             ___    Transaction Resource Usage List    No
      -  ___    Subsystem Reports                      No
             ___    DB2                                No
             ___    WebSphere MQ                       No
             ___    OMEGAMON                           No
      -  ___    System Reports                         No
             ___    System Logger                      No
      -  ___    Performance Graphs                     No
             ___    Transaction Rate                   No
             ___    Transaction Response Time          No
      -  ___    Extracts                               Yes
             ___    Cross-System Work                  Yes
             ___    Export                             No
             ___    Record Selection                   No
             ___    HDB Load                           No
             ___    System Logger                      No
             ** End of Reports **

  F1=Help     F3=Exit     F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 77. Edit Report Set

The Report Set panel describes the Report Set and lists all the reports and extracts that can be requested.

The Report Set description can be modified. Specify up to 32 characters of text to describe the purpose of the Report Set. The description is shown on the Report Sets panel to help you distinguish between the Report Sets displayed. It also appears as a comment in the JCL. The description is initially set to **CICS PA Report Set.**

Edit/View Report Set

The reports and extracts are grouped to indicate the type of output (**report, graph report,** or **extract**) and the type of SMF data they process, either CMF data (**performance, exception,** or **transaction resource** class data), subsystem data (**DB2**, **WebSphere MQ**, **OMEGAMON**), or MVS system data (**System Logger**). Also listed are three specifications which apply globally to all reports and extracts in the Report Set:

- **Global Options** apply to all reports and extracts. They specify the global system selection (CICS System, DB2 Subsystem, MVS System Logger, WebSphere MQ ID) and report formatting options (lines per page, time zone, date/time delimiters).
- **Performance Selection Criteria** apply to all performance reports and extracts. They provide filtering of CMF performance records based on field values.
- **Exception Selection Criteria** apply to all exception reports. They provide filtering of CMF exception records based on field values.

Note: You can override some of the global options by specifying them for individual reports or extracts. System Selection (System, Image, Group) and Selection Criteria are primary examples of this feature. Report-level specifications take precedence.

The reports, extracts, and global selection criteria can be activated (**Active=Yes**) or deactivated (**Active=No**). They are automatically activated when created, and can be explicitly deactivated or activated at any time. The global options are automatically activated if at least one report or extract is active, but they cannot be explicitly activated or deactivated.

Each Report Category can be activated or deactivated. Only active reports in active report categories are included in the Report Set at submit time. A Report Set can be submitted for processing if there is at least one active report in an active report category.

However, there is a convenient exception. You can use the **RUN** line action to temporarily override the active status of a report or report category.

*Line Actions (** Reports **):* The line actions that are valid for ** Reports ** at the top of the Report Set tree are:

/	Display the menu of line actions.
S	Expand/Collapse all categories.
A	Activate all categories.
AA	Activate all categories and reports.
D	Deactivate all categories.
DD	Deactivate all categories and reports.
RUN	Run the Report Set. Only active reports within active categories are selected, together with any categories or reports selected by the **RUN** line action.

Line Actions (Options Category): The line actions that are valid for the Global Options Category are:

/	Display the menu of line actions.
S	Expand/Collapse category.

Line Actions (Global Options): The line actions that are valid for the Global Options are:

/   Display the menu of line actions.

S   Select (edit) the global options.

Line Actions (Selection Criteria Category): The line actions that are valid for the Selection Criteria Category are:

/   Display the menu of line actions.

S   Expand/Collapse category.

A   Activate category.

AA   Activate category and all selection criteria.

D   Deactivate category.

DD   Deactivate category and all selection criteria.

Line Actions (Selection Criteria): The line actions that are valid for the Performance and Exception Selection Criteria are:

/   Display the menu of line actions.

S   Select for edit or review.

A   Activate the Selection Criteria.

D   Deactivate the Selection Criteria.

Line Actions (Report Categories): The line actions that are valid for the Report and Extract Categories are:

/   Display the menu of line actions.

S   Expand/Collapse the category.

A   Activate the category.

AA   Activate the category and all its reports and extracts.

D   Deactivate the category.

DD   Deactivate the category and all its reports and extracts.

RUN   Run the active reports and extracts in the category, plus any selected by the **RUN** line action.

Line Actions (Reports and Extracts): The line actions that are valid for the reports and extracts are:

S   Select for edit or review.

A   Activate the report or extract.

D   Deactivate the report or extract.

RUN   Run the report or extract, ignoring the active status.

Primary Commands: The following primary commands are available:

SAVE   This command is only available from Edit mode and saves any changes you have made. To save any changes made in View mode, use **SAVEAS.**

             Also available from **File** in the action bar.

SAVEAS rsetname|datasetname(rsetname)

This command is available from both Edit and View mode to save the contents of this Report Set under another name, either in the current data set (assumed if no data set name is provided) or in another data set (if the name of a valid PDS is provided). If you then Cancel from this panel, the contents of the current Report Set remain unchanged.

Also available from **File** in the action bar

RUN   Run the Report Set. Only active reports and extracts within active categories are selected. The Run Report Set panel is displayed for you to enter required run-time options prior to submission. See "Running Report Sets" on page 276 for more information. Alternative RUN commands are:

SUB   After your run-time options are validated, JCL is submitted directly for batch processing.

JCL   After your run-time options are validated, JCL is presented in an Edit session. You can alter the JCL prior to submission or save it in your JCL library.

Also available from **File** in the action bar.

CONFIRM ON|OFF

CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Report Set panel when there have been updates.

With **CONFIRM OFF,** Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the value set by **Cancel Confirmation** in CICS PA Settings

Also available from **Confirm** in the action bar.

Note: The **SAVE** and **SAVEAS** commands are only available on the Report Set panel, being at the top of the panel hierarchy. Changes made on the associated panels (global options, selection criteria, reports, extracts) are only saved when the Report Set is saved.

Global Options

To display the Global Options panel, enter line action **S** to select **Global** in the **Options** category on the Report Set panel.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                          SAMPLE - Global Options
 Command ===> _____

 System Selection:
  CICS APPLID . . _____   +  Image . . _____   +  Group . . _____   +
  DB2 SSID  . . . ____   +      Image . . _____   +  Group . . _____   +
  MQ SSID   . . . ____   +      Image . . _____   +  Group . . _____   +
  Logger  . . . . _____   +  Image . . _____   +  Group . . _____   +

 Report Formatting Options:
  Print Lines per Page . . 60_   (1-255)
  Time Zone  . . . . . . . ___    (Blank for system default or -12 to +12 hours)
  Date Delimiter . . . . . /
  Time Delimiter . . . . . :
  Precision  . . . . . . . 6

  F1=Help    F3=Exit    F4=Prompt    F7=Backward  F8=Forward   F10=Actions
 F12=Cancel
```

Figure 78. Global Options

The Global Options define general control information applying to all reports and extracts in the Report Set. They specify the global System Selection (CICS System, DB2 Subsystem, MQ Subsystem, MVS System Logger) and report formatting options (lines per page, time zone, date/time delimiters).

You can accept the default formatting options or change them to suit your requirements. System Selection may be left blank, provided the systems are specified at the report-level, or when the Report Set is submitted.

The Global Options are:

System Selection:
>   At Report Set run-time, CICS PA needs to determine which systems the reports will analyze. System Selection identifies these systems. The systems must be defined in your System Definitions. You can type in the system names, or select from a list of defined systems using **Prompt** (F4).
>
>   If the required system is not defined to CICS PA, you can link directly to System Definitions to define it by selecting **Systems** in the action bar or entering the **SYSDEFS** command.
>
>   You can specify System Selection in three places:
>   1. Locally for each report within the Report Set. The local selection applies only to this single report.
>   2. In the Report Set Global Options. The global selection will only apply to reports that do not specify their own local selection.
>   3. At run time. If specified, this selection overrides the Report Set Global Options. In addition, if the **Override System Selections** option is requested, then the run-time selection also overrides the local report selections.
>
>   Each point of selection is optional, but at least one must be specified before CICS PA can proceed with JCL generation. You could choose not to specify any System Selections in your Report Set. Then at run time, you will be prompted to specify the systems you wish to report against.

You can specify four types of systems:

1. **CICS APPLID:** The CICS Generic APPLIDs you want reported. Specify either:

    - A unique APPLID.
    - An APPLID for a particular MVS Image. This identifies a particular CICS system when there are multiple CICS systems with the same APPLID.
    - An MVS Image. CICS PA will report on all APPLIDs running on this Image using the SMF files defined for the Image.
    - An APPLID and Image combination plus a Group. This is useful for uniquely identifying CICS systems when there are duplicate IDs defined in System Definitions.
    - A Group alone. CICS PA will report on all APPLID and Image combinations in the Group to produce a single consolidated report. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

    CICS PA generates the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

2. **DB2 SSID:** The DB2 Subsystem IDs. This is only used by the DB2 Report and Record Selection Extract. If the CICS APPLID Group contains the DB2 SSIDs, then it can be omitted.

    CICS PA generates the `SSID(ssid1,ssid2,ssid3,...)` operands for the DB2 or RECSEL commands and the DD statements for the associated files.

3. **MQ SSID:** The MQ Subsystem IDs. This is only used by the WebSphere MQ Report and Record Selection Extract. If the CICS APPLID Group contains the MQ SSIDs, then it can be omitted.

    CICS PA generates the operand `SSID(ssid1,ssid2,ssid3,...)` operands for the MQ or RECSEL commands and the DD statements for the associated files.

4. **Logger:** The MVS System Logger. This is only used by the System Logger Report, System Logger Extract, and Record Selection Extract. If the CICS APPLID Group contains the System Loggers, then it can be omitted.

    CICS PA generates the DD statements for the associated files.

Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60.**

The global value applies to all reports. (It is not applicable to extracts.) If a value is specified on the report panel, the report value takes precedence over the global for that report only.

CICS PA JCL generation translates this field to:

`LINECount(nnn)`

Time Zone

This provides a way to override your local CPU time zone setting and convert CMF, DB2, MQ, and System Logger clock fields to a different time zone. It is only useful if the data you are reporting was generated by a system running with a different time zone.

CMF, DB2, MQ, and Logger records have clock fields in STCK format based on Greenwich Mean Time (GMT). Every CMF record includes time zone conversion factors SMFMNLSO (Leap Second Offset) and SMFMNDTO (Date/Time Offset). CICS PA uses these to convert the time stamps to reflect the local time of the SMF data.

DB2, MQ, and System Logger records, however, do not have time zone conversion factors. CICS PA uses the reporting system's time zone obtained from the conversion factors CVTLSO (Leap Second Offset) and CVTLDTO (Date/Time Offset) in the CVT. When you run the DB2, MQ, or Logger report on a system with a different time zone setting to that of the SMF data, then you must specify the time zone option to match that of the SMF data. The time zone specification will be used to convert the CMF, DB2, MQ, and Logger time stamps to reflect the local time of the SMF data.

Specify the time zone as an integer from **-12** to **+12** to represent the number of hours that local time is west or east of GMT. For example, specify **-5** for New York, **10** for Sydney. CICS PA will then convert GMT STCK values to the required local time for all record types.

The default is blank (not specified).

CICS PA JCL generation translates this field to:

```
ZONE(time-zone)
```

Date Delimiter

The separator character for the dates in reports and extracts. Any character or a space can be specified. The default is a slash (**/**).

CICS PA JCL generation translates this option to:

```
FORMAT(time-delimiter,date-delimiter)
```

Time Delimiter

The separator character for the time-of-day in reports and extracts. Any character or a space can be specified. The default is a colon (**:**).

CICS PA JCL generation translates this option to:

```
FORMAT(time-delimiter,date-delimiter)
```

Precision

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is **4.**
- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 microsecond precision

This option generates the `PRECISION(n)` global operand.

Selection Criteria

Some reports allow you to specify Selection Criteria to filter records based on their field values before they are passed on to report processing. This enables you to tailor your reports to include only the information that you are interested in. For example, you can specify Selection Criteria to restrict reports to:
- A particular date/time range
- A group of related Transaction IDs
- Transaction response times that exceed your thresholds

There are three types of Selection Criteria, to support the various types of record processed by CICS PA:

Table 4. Selection Criteria, the record types they apply to, and the reports they affect

Type of Selection Criteria	Filters these types of record...	For these reports...	Global Selection Criteria?
Performance	CMF performance (SMF 110)	All Performance Reports, Transaction Resource Usage Reports, Performance Graphs Some Extracts: Cross-System Work, Record Selection	Yes
	DB2 accounting (SMF 101)	DB2 reports (in the Subsystem Reports category)	Yes
	WebSphere MQ accounting (SMF 116)	WebSphere MQ reports (in the Subsystem Reports category)	Yes
	OMEGAMON XE for CICS (SMF 112)	OMEGAMON reports (in the Subsystem Reports category) Record Selection extract (in the Extracts category)	Yes
Exception	CMF exception (SMF 110)	All Exception Reports Record Selection extract (in the Extracts category)	Yes
Logger	System logger (SMF 88)	All System Reports/Extracts	No

You can specify Performance and Exception Selection Criteria in your Report Set in two places:
- Global Selection Criteria, which apply to all reports in the Report Set, except those that have their own Selection Criteria. Global Selection Criteria are accessed from the Report Set panel.
- Report Selection Criteria, which apply only to a specific report. When Report Selection Criteria are defined, they take precedence over the Global Selection Criteria. Report Selection Criteria are specified on the individual Report panels.

You specify Logger Selection Criteria individually for each System Report/Extract in your Report Set.

You can also specify Performance Selection Criteria in a Report Form. If Selection Criteria are specified in both the Report and the Report Form it uses, records must satisfy both criteria to be selected for the report.

Selection Criteria consist of one or more Select Statements. Select Statements in turn consist of one or more INCLUDE/EXCLUDE conditions. You specify these conditions to instruct CICS PA to check field values against the values you specify. For example, you may want to:
• INCLUDE only transactions that ran between 10am and 12pm, and
• INCLUDE only Transaction IDs whose names match the pattern ST*, and
• INCLUDE only transactions with a response time greater than 100 milliseconds.

For each record, the Select Statements are checked one at a time until the record is either included in or excluded from report processing.

Specifying multiple Select Statements provides you with a powerful facility to enhance your reporting capability. For example, suppose that you have two application systems, FINANCE and STOCK. Each system has its own performance thresholds that must be met. FINANCE transactions, prefixed by FI, must have a response time less than or equal to 100 milliseconds during peak period. STOCK transactions, prefixed by ST, must have a response time less than or equal to 200 milliseconds during peak period.

In this case, you would specify two (2) Select Statements, one for each application:

Table 5. Select Statements Example

Selection Criteria	Select Statement	Conditions
Global or Report	FINANCE	TRAN=FI* RESPONSE time from 0 to 100 Active during 09:00 to 16:00
	STOCK	TRAN=ST* RESPONSE time from 0 to 200 Active during 09:00 to 16:00

Each CMF Performance record is checked against the Select Statements. The first Select Statement for the FINANCE system is checked first. If its conditions are met, then the record is passed to report processing with no further checking. Otherwise, the second Select Statement for the STOCK system is checked next. If its conditions are met, then the record is passed to report processing with no further checking. CMF records failing both Select Statements bypass report processing.

For a detailed discussion and examples, see "Using SELECT statements" on page 452.

When you select Performance or Exception Selection Criteria for the first time, you are taken directly to specify a Select Statement. When you have specified at least one, a list is displayed. You can then select (edit), delete, or include/exclude any Statements in the list, or add new ones.

Thus the panel flow is:

```
            Edit/View Report Set
                    |
                    V
            Selection Criteria
         (List of Select Statements)
                    |
                    V
            Select Statement
```
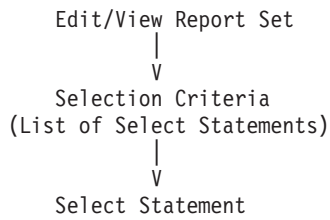
Specifying Selection Criteria

To specify Global Performance or Exception Selection Criteria that will apply to all reports in the Report Set, scroll to the **Selection Criteria** category on the Report Set panel, and then enter line action **S** to select **Performance** or **Exception**.

To specify Selection Criteria for an individual report, select the report on the Report Set panel, and then enter line action **S** next to the **Selection Criteria** field on that Report panel.

If Select Statements have already been specified for this type of Selection Criteria, the Selection Criteria panel shown below is displayed. Otherwise, the Select Statement panel is displayed for you to define your first statement; see "Specifying Select Statements" on page 177.

```
   File  Filter  Edit  Options  Help
 -------------------------------------------------------------------------------
                  SAMPLE - Performance Selection Criteria        Row 1 from 2
 Command ===> _____  Scroll ===> PAGE

 / Exc Description
 S     ACTIVE from 2005/01/15 to 2005/01/20;RESPONSE 3;CPU COUNT 50-1000
 -------------------------------------------------------------------------------
 _     RSYSID RMTE;Excl TRAN XCYZ;
 -------------------------------------------------------------------------------
 ******************************* End of list *******************************
```

Figure 79. Performance Selection Criteria

This panel lists the Select Statements which together make up the Selection Criteria that you have chosen to specify. One or more Select Statements make up the Selection Criteria against which CICS PA compares each input record to determine whether to include or exclude it in the report. You can select (edit), delete, or include/exclude any statement, insert new ones, or rearrange them (move/copy). The order of the rows is important to the report processor as the final decision on whether to include or exclude a record in the report can depend on the order of the Select Statements against which it is compared.

Each description is translated by CICS PA JCL generation into a `SELECT(PERFORMANCE(...))`, `SELECT(EXCEPTION(...))`, or `SELECT(LOGGER(...))` operand, depending on the type of Selection Criteria.

The options are:

Exc Exclude Indicator. An asterisk ***** in this field indicates that this Select Statement will be excluded from report processing and will not be used to filter records.

To reverse the Exclude indicator, enter line action **X**.

Description

This is a summary of the Select Statement, truncated to fit the panel width. EXCLUDE is abbreviated to Excl and INCLUDE is omitted.

To display and edit the full specification, enter line action **S**.

Line Actions: The line actions that can be performed against the rows of select statements are:

/	Display the menu of line actions
S	Select to modify or review the Select Statement
I	Insert a row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row
X	Reverse this row's Exclude status (Exclude/Include)

Specifying Select Statements

The Select Statement panel is where you specify the details of the Select Statements to filter records.

To display the Select Statement panel for Global Selection Criteria, enter line action **S** next to **Performance** or **Exception** in the Selection Criteria category on the Report Set panel. For individual Report Selection Criteria, select the report on the Report Set panel, and then enter line action **S** next to the Selection Criteria field. If the Selection Criteria panel is displayed, enter line action**S** against a particular Select Statement listed there.

The Select Statement panels are similar for Performance, Exception, and Logger Selection Criteria. The differences are:

* Performance and Exception Selection Criteria allow you to specify conditions based on transaction times and field values. Logger Selection Criteria only allows you to specify conditions based on field values. The Logger Select Statement panel contains the "Value or Range" fields shown below the horizontal line in Figure 80 on page 178, but not the "Report Interval" fields above the line.

* The Performance Select Statement panel has two views. The first view shown in Figure 80 on page 178 is displayed by default. To display the second view (showing field lengths and dictionary definitions), press **F11.** The Select Statement panels for other types of Selection Criteria have only one view.

Global Options

```
   File  Edit  Object Lists  Options  Help
 -------------------------------------------------------------------------------
                  SAMPLE - Performance Select Statement      Row 1 of 2 More: >
 Command ===> _____  Scroll ===> PAGE

          Active  --------------- Report Interval ----------------
    Inc   Start   -------- From ---------  ---------- To ---------
    Exc   Stop    DD/MM/YYYY  HH:MM:SS.TH  DD/MM/YYYY  HH:MM:SS.TH
 _  INC   ACTIVE  15/01/2005  _____   20/01/2005  _____

 -------------------------------------------------------------------------------

    Inc  Field                ----- Value or Range -----   Object
 /  Exc  Name +     Type    Value/From          To         List +
 _  INC  RESPONSE   _____  >=3_____  _____   _____       Milliseconds
 _  INC  CPU_____   COUNT_  50_____   1000____   _____
 ****************************** End of list ******************************

  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F11=Right    F12=Cancel
```

Figure 80. Performance Select Statement (Part 1 of 2)

```
   File  Edit  Object Lists  Options  Help
 -------------------------------------------------------------------------------
                  SAMPLE - Performance Select Statement      Row 1 of 2 More: >
 Command ===> _____  Scroll ===> PAGE

          Active  --------------- Report Interval ----------------
    Inc   Start   -------- From ---------  ---------- To ---------
    Exc   Stop    DD/MM/YYYY  HH:MM:SS.TH  DD/MM/YYYY  HH:MM:SS.TH
 _  INC   ACTIVE  15/01/2005  _____   20/01/2005  _____

 -------------------------------------------------------------------------------

    Inc  Field                                   - User Field -
 /  Exc  Name +     Length  Dictionary Definition  Offset  Length
 _  INC  RESPONSE        8  RESP     CICSPA  D901   ___     ___
 _  INC  CPU_____        8  USRCPUT  DFHTASK S008   ___     ___
 ****************************** End of list ******************************

  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F11=Right    F12=Cancel
```

Figure 80. Performance Select Statement (Part 2 of 2)

You use the Select Statement panel to specify a Select Statement consisting of one
or more clauses that include or exclude Report Intervals (Performance and
Exception Selection Criteria only) or Field Values (all Selection Criteria).

CICS PA JCL generation translates the Report Intervals into operands with the
format:

```
SELECT(PERFORMANCE|EXCEPTION(INCLUDE|EXCLUDE(
      ACTIVE|START|STOP(FROM(date,time),TO(date,time)))),...))
```

The Field Values translate to:

```
SELECT(PERFORMANCE|EXCEPTION|LOGGER(INCLUDE|EXCLUDE(
      field(values)),...))
```

The options for the **Report Intervals** are:

Inc/Exc

Specify **INC** to include data records in the report or extract if their transaction Start/Stop time is within the specified time range.

Specify **EXC** if data records whose transaction Start/Stop time is within the specified time range are to be excluded from the report or extract.

Active/Start/Stop

START refers to when the transaction was attached or when processing continued from a conversational transaction.

STOP refers to when the transaction was detached or a conversational transaction waited for terminal input.

ACTIVE refers to the entire time span between when the transaction started and stopped. Any part of the transaction active time that occurs between the specified report interval is considered a match. It can be used to make sure long-running transactions are included when their Start or Stop times fall out of the selection range.

For OMEGAMON records, Report Interval selection for OMEGAMON records is limited to the START time; the STOP and ACTIVE options are ignored.

Report Interval

This is used to specify a *date/time range* or a *time slot* (times only).

From and **To** together specify the report interval. **Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for Report Set Start/Stop.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both From and To dates are specified, they must be in the same format.

For a *date/time range:*

- Either From or To can be omitted to indicate that the range is open-ended.

  If From is omitted, it defaults to the first input record.

  If To is omitted, it defaults to the end of file.

- If From date is specified with no time, the start of day is assumed.

  If To date is specified with no time, the end of day is assumed.

For a *time slot,* both times must be present with no dates to signify the same time slot every day. The times can span midnight.

More +

CICS PA allows up to 14 report intervals in a Select Statement. You can specify the first report interval on this panel. Enter line action **S** against the first report interval to display the window where you can specify multiple report intervals (see Figure 81 on page 182).

More + is displayed on the far right to indicate that more than one report interval has been specified.

The options for the **Field Values** are:

Inc/Exc

Specify **INC** if a data record is to be included in the report or extract when it matches the field and value specification.

Specify **EXC** if the data record is to be excluded from the report or extract if it matches the field and value specification.

Field Name

The CICS PA name of the data field against which the record is compared. To select one from a list of available names, press **Prompt** (F4) from Field Name (see "Select a field" on page 183 or enter line action **S** (see "Field selection" on page 182).

For the Transaction Resource Usage reports you can specify FILENAME or TSQNAME to filter the CMF transaction resource class data on File name or Temporary Storage Queue name. FILENAME and TSQNAME are ignored for CMF performance class data.

Type   Some fields require you to specify a type. For example, clock fields require either **COUNT** or **TIME.**

Value or Range

Enter the Field Value or Range against which the data records are compared.

- For **Character** fields, specify the Field Value. The value must not exceed the maximum field length. If the value is shorter than the field, it will be padded to the right with blanks. Scroll **Right** (F11) to view the field length. The length of character type fields is commonly 8 bytes or less. However, UOWID is 6 bytes hexadecimal requiring an entry of 12 hexadecimal characters (0-F). TSQNAME can be up to 16 characters.

  Masking characters **%** (exactly one character) and ***** (any number of characters) are allowed. For example, specify TR* to match all values starting with TR.

  To specify a null value, specify two single quotes **' '** or **''**.

  If you need to specify a list of values, use an Object List.

- For Numeric (**Count** and **Time**) fields, specify a Range. The range can be specified as a From and To value. For example, from 1 to 100. If the To value is not specified then the From value is assumed.

  Alternatively you can precede the From value with a comparison operator. For example, specify >=1 for a comparison of greater than or equal to 1. Allowed operators are:

  =   >   >=   <   <=

  Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds. CICS PA displays **Seconds** or **Milliseconds** accordingly.

Object List

The name of an Object List in the current Object Lists data set. You can type in the name directly or to select one from a list of available Object Lists, place the cursor where you want the name inserted and press **Prompt** (F4). See Figure 85 on page 186 for an example of the Object List selection panel. The values in the Object List must be the same type (character or numeric) as the field for which the Object List is specified.

When Report Set JCL is generated, the values in the Object List are listed in the **SELECT** statements along with the explicitly specified values. The order in which the values are listed in the SELECT statement is the same order as they are specified in the Selection Criteria and Object List panel(s), however this order is of no consequence to CICS PA report processing.

Length

The length of the field.

Dictionary Definition (Performance Selection Criteria only)

The description of the CMF data field in the format:

```
informalname owner xnnn
```

where:

- *informalname* is the CMF field name
- *owner* is the CICS component that 'owns' the field
- *x* indicates the data type:

  A - 32- or 64-bit count
  C - character string
  D - CICS PA derived time
  P - packed decimal number
  S - clock (time-count)
  T - STCK time stamp
  X - CICS PA calculated count

- *nnn* is the field identifier

Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given an owner of 'CICSPA'. They are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

User fields can be specified in Select Statements. However, you must specify in Global Options a CICS System that has user fields defined in its MCT. CICS PA recognizes the APPLID associated with the Select Statement, and when a row is selected (**S** line action), the list of field names will include the user fields at the bottom of the list.

User Field Offset and Length (Performance Selection Criteria only)

For character user fields when only part of the field is to be checked. **Offset** is the starting character position and **Length** is the number of characters from this position to be checked. For example, if the user field contains the value ABCDEFG, then specifying offset 3 and length 5 gives CDEFG. Both values are required for character user fields and default to the entire field (offset 1 and maximum length).

CICS PA JCL generation translates these values to:

```
FIELDS(CHARACTER(SUBSTR(offset,length)),...)
```

Line Actions (field rows): The valid line actions for the **Field Value** rows are:

/	Display the menu of line actions.
S	Select a field name from a list (see "Field selection" on page 182).
I	Insert a field.
R	Repeat this row.
C	Copy this row.
M	Move this row.
A	Move/Copy after this row.
B	Move/Copy before this row.
D	Delete this row.

Specifying more than one report interval: To specify more than one **Report Interval,** enter line action **S** against the first Report Interval at the top of the Select Statement panel. **More +** is displayed on the far right to indicate that more than one

report interval has been specified.

```
  File  Edit  Options  Help
 -------------------------------------------------------------------------------
                   SAMPLE - Report Intervals              Row 1 to 2 of 2
 Command ===> _____ Scroll ===> PAGE

         Active  --------------- Report Interval ----------------
    Inc  Start   -------- From ---------  ---------- To ---------
 /  Exc  Stop    DD/MM/YYYY  HH:MM:SS.TH  DD/MM/YYYY  HH:MM:SS.TH
 _   INC  ACTIVE  15/01/2005  _____   20/01/2005  _____

 _  ___  _____  _____  _____  _____  _____
 ******************************* End of list *********************************
```

Figure 81. Performance Report Intervals

This panel is used to specify multiple report intervals for CMF performance record selection.

Line Actions: The valid line actions on this panel are:

/	Display the menu of line actions.
I	Insert a row.
R	Repeat this row.
C	Copy this row.
M	Move this row.
A	Move/Copy after this row.
B	Move/Copy before this row.
D	Delete this row.

Field selection: Field Selection allows you to view expanded field descriptions and select a field name for insertion into your Selection Criteria. To display the Field Selection panel, enter line action **S** against a field or blank row on the Select Statement panel where you want to insert the selected field name.

```
   File  Help
 ---------------------------------------------------------------------------
                             Field Selection          Row 1 of 11 More: >
 Command ===> _____  Scroll ===> CSR_

 Name  . . . . . TASKNO__  +
 CMF ID  . . . : TRANNUM  DFHTASK P031
 Description . : Transaction identification number

 ---------------------------------------------------------------------------

 Transaction identification number.

 Note:  The transaction number field is normally a 4-byte packed
        decimal number.  However, some CICS system tasks are identified
        by special character 'transaction numbers', as follows:
             ' III' for system initialization task
             ' TCP' for terminal control.

        These special identifiers are placed in bytes 2 through 4.
        Byte 1 is a blank (X'40') before the terminal control TCP
        identifier, and a null value (X'00') before the others.

  F1=Help       F3=Exit       F4=Prompt     F6=Resize     F7=Backward
  F8=Forward    F10=Prev      F11=Next      F12=Cancel
```

Figure 82. Performance field selection

The panel cycles through all the CMF performance class fields and transaction resource class fields available for selection. Each field is displayed in turn with its expanded description like that in "Performance field help" on page 185. Details are only available for CICS-defined fields, not user fields.

To cycle through the list of fields, press **F11** or **F10** to move Forward or Backward through the list. You can restart anywhere in the cycle by entering a valid field name then move Forward or Backward from that point.

You can press **Prompt** (F4) from the Name field to display a selection list of fields (see Figure 83 on page 184).

When the desired field is displayed in the Name field, press **Exit** (F3) to select it.

Select a field: Field selection allows you to select a field name for insertion into your Select Statement. The panel lists all CMF performance class and transaction resource class fields available for selection.

To display the selection list, press **Prompt** (F4) from the Name field of the Select Statement.

Performance Selection Criteria, Exception Selection Criteria, and Logger Selection Criteria each present a different list of fields, matching the different record types to which they apply.

Field selection

```
   File  Help
 ------------------------------------------------------------------------------
                    Select a Performance Field          Row 1 of 249 More: >
   Command ===> _____ Scroll ===> PAGE

      Field
 /    Name       Description
 _    ABCODEC    Current ABEND code
 _    ABCODEO    Original ABEND code
 _    APPLID     CICS Generic APPLID
 _    APPLTRAN   Application naming Tran ID
 _    APPLPROG   Application naming Program
 _    BAACDCCT   BTS Activity Data Containers requests
 _    BAACQPCT   BTS Acquire Process/Activity requests
 _    BADACTCT   BTS Define Activity requests
 _    BADCPACT   BTS Cancel Process/Activity requests
 _    BADFIECT   BTS Define-Input Event requester
 _    BADPROCT   BTS Define Process requests
 _    BALKPACT   BTS Link Process/Activity count
 -    BAPRDCCT   BTS Process Data Containers requests
  F1=Help       F3=Exit        F5=Rfind      F6=Resize      F7=Backward
 F8=Forward    F10=Actions    F11=Right     F12=Cancel
```

Figure 83. Select a performance field (Part 1 of 2)


```
   File  Help
 ------------------------------------------------------------------------------
                    Select a Performance Field          Row 1 of 249 More: >
   Command ===> _____ Scroll ===> PAGE

      Field
 /    Name       Dictionary Definition
 _    ABCODEC    ABCODEC   DFHPROG C114
 _    ABCODEO    ABCODEO   DFHPROG C113
 _    APPLID     APPLID    CICSPA  C903
 _    APPLTRAN   APPLNAME  DFHAPPL C001
 _    APPLPROG   APPLNAME  DFHAPPL C001
 _    BAACDCCT   BAACDCCT  DFHCBTS A217
 _    BAACQPCT   BAACQPCT  DFHCBTS A214
 _    BADACTCT   BADACTCT  DFHCBTS A209
 _    BADCPACT   BADCPACT  DFHCBTS A213
 _    BADFIECT   BADFIECT  DFHCBTS A220
 _    BADPROCT   BADPROCT  DFHCBTS A208
 _    BALKPACT   BALKPACT  DFHCBTS A207
 -    BAPRDCCT   BAPRDCCT  DFHCBTS A216
  F1=Help       F3=Exit        F5=Rfind      F6=Resize      F7=Backward
 F8=Forward    F10=Actions    F11=Right     F12=Cancel
```

Figure 83. Select a performance field (Part 2 of 2)

Enter line action **S** to select a field name from the list and insert it into the Select
Statement.

To help locate a particular field, you can use the **FIND** (and **RFIND**) command
which will search in all the displayed fields for a specified string. For further
information on any field, use the **H** line action.

To leave without selecting, use Exit or Cancel.

Scroll **Right** (F11) to see all columns of information about the fields. The columns are:

Field Name

> The CICS PA name for the CMF data field. User fields are listed if an APPLID has been specified in Global Options and its MCT has user fields defined. User fields display at the bottom of the selection list.

> Enter line action **S** to select a field. It is inserted into the Select Statement in the row where the cursor is positioned.

Description

> This is a short description of the field. Enter line action **H** (Help) for a more detailed description. See Figure 84 for an example of the help details displayed in a pop-up window.

Dictionary Definition

> The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page 181 for further information.

Line Actions: The line actions which are valid on this panel are:

/   Display the menu of line actions.
S   Select a field name to insert into the Select Statement.
H   Field Help. Display a detailed explanation of the field.

Performance field help: On the Select a Performance Field panel, if you enter the line action **H** against a field, a pop-up window will display a more detailed explanation of the field.

```
   File  Help
  --------------------------------------------------------------------------
                      IRWAIT Explanation                    Row 1 to 5 of 5
  Command ===> _____ Scroll ===> PAGE

  Name  . . . . : IRWAIT
  CMF ID  . . . : IRIOWTT  DFHTERM S100
  Description . : MRO link wait time


 Elapsed time for which the user task waited for control at this end of
 an MRO link.

 Note:  This field is a component of the task suspend time, SUSPTIME
 (014), field.
  ******************************* End of list *********************************
   F1=Help    F3=Exit    F6=Resize   F10=Actions   F12=Cancel
```
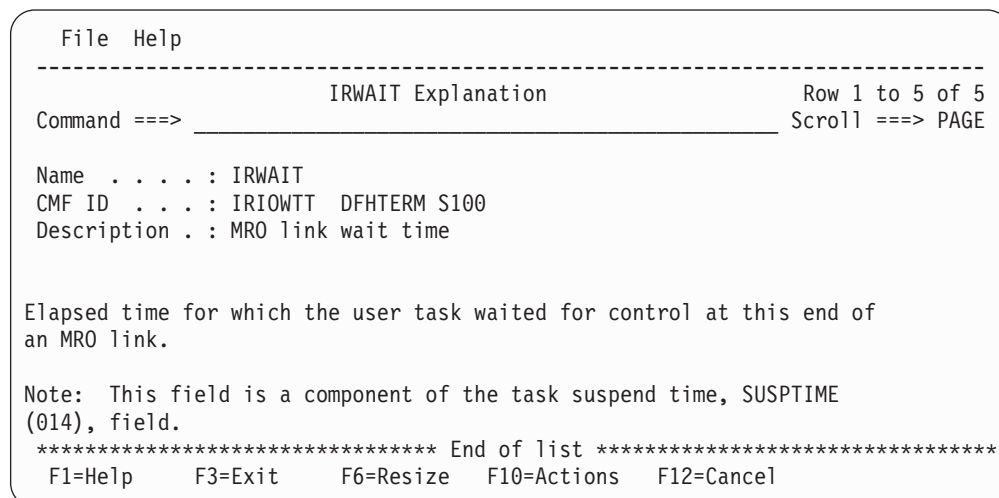
Figure 84. Performance field help

This panel provides a more detailed description of the field. It is only available for CICS-defined fields, not user-defined fields.

The details are:

Name The name of the field as it is known to CICS PA.

CMF ID

> The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page 181 for further information.

Performance field help

Description
> A short description of the field followed by the expanded description.

Select an Object List: To display the Object Lists selection list, position the cursor in the **Object List** field of the Select Statement and press **Prompt** (F4).

```
  File  Help
  ----------------------------------------------------------
                      Object Lists          Row 1 to 3 of 3
  Command ===> _____ Scroll ===> PAGE

  Select an Object List then press Enter.

     Name                 Description
  .  HRTRANS   HR application transactions
  .  USERNETW  Userids of Network Team
  S  ODDNUMS   Odd Numbers
  *********************** End of list ***********************
```

Figure 85. Select an Object List

This panel displays the Object Lists defined in the current Object Lists data set.

Enter line action **S** (or point-and-shoot) to select an Object List name to insert into your Select Statement.

Fields checked by Performance Selection Criteria

The field selection list for Performance Selection Criteria displays fields from several record types (described in Table 4 on page 174), even when you are specifying Selection Criteria for a report that processes only one of those record types. If you specify conditions for fields that do not belong to the record type for the report, those conditions will be ignored for that report. The following topics list the Performance Selection Criteria fields that are checked for each record type.

Selecting DB2 accounting records
The only Performance Selection Criteria fields checked against DB2 accounting records are:
> START
> STOP
> ACTIVE
> UOWID

All other fields are ignored.

DB2 accounting record selection applies to the DB2 report (see Figure 119 on page 227) and the Record Selection extract (see Figure 139 on page 264). Time-based selection depends on whether the DB2 thread Begin-End times are within the specified report intervals.

Selecting MQ accounting records
The only Performance Selection Criteria fields checked against MQ accounting records are:
> START
> STOP
> ACTIVE
> TASKNO

      TRAN

All other fields are ignored.

MQ accounting record selection applies to the WebSphere MQ report (see Figure 122 on page 232) and the Record Selection extract (see Figure 139 on page 264). Time-based selection depends on whether the MQ thread Begin-End times are within the specified report intervals.

Selecting OMEGAMON records

CICS PA checks only the following Performance Selection Criteria fields when filtering OMEGAMON records:

APPLID   CICS APPLID
NETUOWPX   Originating System VTAM network name
UOWID   Unit of work ID
START   Task start time (see Note below)
TRAN   CICS transaction ID
FILENAME   Database (or file) name

All other fields are ignored.

Note: Report Interval-based selection for OMEGAMON records is limited to the Attach (START) time; the STOP and ACTIVE options are ignored.

OMEGAMON record selection applies to the OMEGAMON reports (see "OMEGAMON reports" on page 235).

Selecting Transaction Resource Class records

The Transaction Resource Usage Summary reports process both transaction resource class and performance class data. The Transaction Resource Usage List report processes only transaction resource class data. These reports use Performance Selection Criteria to filter both classes of data. For more information, see "Performance Selection Criteria" on page 225.

Requesting reports and extracts

In a Report Set, you can request any number of reports and extracts, and any number of instances of them with different reporting options specified. For example, you might request three variations of the Performance List report, one Performance Summary report, and two different Cross-System Work extracts.

When you select a report or extract from the Report Set panel:

- If there is at least one of this type already defined, a list is displayed. You can then select (edit), delete, or include/exclude any in the list, define new ones, or rearrange them (move/copy).
- The list is bypassed if none of this type of report or extract is defined yet, and the Report or Extract definition panel is displayed directly.

Thus the panel flow is:

```
    List of Report Sets
             |
             V
    Edit/View Report Set
             |
             V
(List of Reports/Extracts)
             |
             V
    Define Report/Extract
```

For Report Set JCL generation, you must specify the systems that you want to analyze. The systems and files must be defined in System Definitions. You can link directly there by selecting **Systems** in the action bar.

It is recommended that you specify your System Selection at run time, not within the Report Set. This will allow you to run your Report Sets against any of your defined systems.

Performance reports

The Performance Reports process CMF performance class data to produce tabular-style reports.

Performance List report

The Performance List report provides a detailed list of the CMF performance class records.

To request the report, enter line action **S** against the **List** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance List Reports is displayed. Otherwise, the Performance List Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  ----------------------------------------------------------------------------
                     SAMPLE - Performance List Reports           Row 1 from 4
  Command ===> _____  Scroll ===> ____

        ---- System Selection -----                      Selection
  /  Exc  APPLID +  Image +  Group +   Output    Form +     Criteria
  S       CICSP001  _____  _____   LIST0001  TRANLIST   YES
  _       DEVT____  MVS1___  _____   LIST0002  RESPLIST   NO
  _       CICST001  _____  _____   LIST0003  TRANLIST   YES
  _    *  _____  _____  RSYSGRP1  LIST0004  _____    NO
  ******************************* End of list *********************************
```

Figure 86. Performance List Reports

This panel displays the list of Performance List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

Exc   An asterisk ***** in this field indicates that the report or extract is excluded from report processing.

Use line action **X** to reverse the Exclude indicator.

System Selection
Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:
- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

Performance List report

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:
- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **LISTnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Form Name

The name of a Report Form to be used to tailor the format and content of the report. The report must use a Report Form of a compatible type, that is LIST or LISTX. If not specified, CICS PA uses the default Form. See Figure 156 on page 301 for the default LIST Report Form.

CICS PA JCL generation translates the Report Form specification into the `FIELDS` operand.

Selection Criteria Indicator

This indicator is generated by CICS PA.

YES indicates that Selection Criteria are activated for this report or extract.

NO indicates that Selection Criteria are not activated for this report or extract. This can mean that no Selection Criteria have been specified, all Select Statements are Excluded, or the Selection Criteria have been deactivated.

Line Actions: The valid line actions on the list of reports panel are:

/	Display the menu of line actions
S	Select this row for review or modification
I	Insert a row
R	Repeat this row
C	Copy this row
M	Move this row.
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row
X	Reverse the Exclude indicator (Include/Exclude)

Primary Commands: The following primary commands are valid for this panel:

SHOW

This command shows all items in the list, both Included and Excluded. This is the default on entry to the panel.

Also available from **Filter** in the action bar.

HIDE This command hides all Excluded items which have ***** in the **Exc** column.

Only the Included items, where **Exc** is blank, are displayed. If all items are Excluded, a blank row is inserted to accept entry of a new data set specification. `Row n from m` at the top right of the panel indicates the total number of items in the list. HIDE is only in effect until exit from this panel, or until the next SHOW command is issued.

Also available from **Filter** in the action bar.

EXCLUDE

This command Excludes all items by displaying ***** in their **Exc** column.

Also available from **Edit** in the action bar.

INCLUDE

This command Includes all Excluded items by removing the ***** from their **Exc** column.

Also available from **Edit** in the action bar.

RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

To display the Performance List Report panel, enter line action **S** against the **List Performance Report** on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
   File  Systems  Options  Help
  ----------------------------------------------------------------------------
                    SAMPLE - Performance List Report
  Command ===> _____

  System Selection:                     Report Output:
   APPLID . . CICSP001  +                  DDname . . . . . . . . . LIST0001
   Image  . . _____  +                  Print Lines per Page . . ___ (1-255)
   Group  . . _____  +

  Report Format:
   Form . . . TRANLIST  +
   Title  . . _____
              _____


  Selection Criteria:
   _   Performance  *


   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 87. Performance List Report

Use this panel to specify report options, report format, and record selection criteria for the Performance List report. The only mandatory option is the DDname for the report output. You can let the other options default.

The precision of numerical fields in the report is specified in Global Options (see Figure 78 on page 171).

The options are:

Performance List report

System Selection

Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Report Output DDname

The DDname for the report output. Specify 1-8 alphanumeric characters starting with an alphabetic character. The DDname is mandatory and should be unique to separate the output of multiple reports. Multiple reports of the same type can use the same DDname without consequence, however a mix of reports using the same DDname may interleave the print lines.

CICS PA assigns a default DDname **LISTnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60.**

A global value can be specified to apply to all reports. If a value is also specified here on the report panel, it takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the `LINECount` operand.

Report Form
The name of a LIST Report Form to be used to tailor the format and content of the report.

To select the name from a list of compatible Report Forms, position the cursor on the Form field and press **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the `FIELDS` operand.

If a Report Form is not specified, CICS PA uses the default Form. See Figure 156 on page 301 for the default Report Form for the LIST report.

Title Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on this report panel takes precedence.

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

Performance Selection Criteria
You can specify Selection Criteria to filter the CMF records on time period and field values to restrict reporting to the data that is of interest to you.

CICS PA JCL generation translates Selection Criteria to the `SELECT(PERFORMANCE` operand.

If you specify a Report Form that also has Selection Criteria specified, CICS PA JCL generation translates the Form's Selection Criteria to the `SELECT2(PERFORMANCE` operand. If both the report and the Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the report.

Line Actions: Valid line actions are:

/ Display the menu of line actions.

S Select to display the subpanel where Selection Criteria can be specified for this report. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A Activate the Selection Criteria so they will be generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

D Deactivate the Selection Criteria. Any you may have specified here will not be used.

Select a System (CICS APPLID)
To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **CICS APPLID** field in System Selection. Only the systems of that type are displayed. See Figure 88 on page 194 for an example showing a list of CICS APPLIDs.

Enter line action **S** (or point-and-shoot) to select a system from the list to insert in your System Selection.

```
                               Systems                       Row 1 to 3 of 3
  Command ===> _____ Scroll ===> PAGE


  Select a System then press Enter.


      System    Image    Files  Description
  .   CICSP001  MVS1      Yes   CICS system CICSP001/MVS1
  .   CICSD001            Yes   CICS system CICSD001
  .   CICST001            No    CICS testing
  ******************************** End of list *****************************
```

Figure 88. Select a System (CICS APPLID)

Select an MVS Image

To report on all systems belonging to a particular MVS Image, select an Image by pressing **Prompt** (F4) from an **Image** field in System Selection. All Images defined in System Definitions are listed. See the example in Figure 89.

```
    File  Help
    --------------------------------------------------------------------------
                               Images                        Row 1 to 1 of 1
  Command ===> _____ Scroll ===> PAGE

  Select an Image then press Enter.

      Image    Files  Description
  .   MVS1      Yes   MVS System MVS1
  ******************************** End of list *****************************
```

Figure 89. Select an Image

This panel displays the Images defined in System Definitions.

Each row gives the Image name and description and shows whether it has files defined and eligible for JCL generation.

Enter line action **S** (or point-and-shoot) to select an Image to insert in System Selection.

Select a Group

To report on a particular group of systems, select a Group by pressing **Prompt** (F4) from a **Group** field in System Selection. All Groups defined in System Definitions are listed. See the example in Figure 90 on page 195.

```
   File  Help
  ---------------------------------------------------------------------------
                              Groups                         Row 1 to 4 of 4
  Command ===> _____ Scroll ===> PAGE

  Select a Group then press Enter.

      Group      Files  Description
  .   PRODMRO1   Yes    Production MRO
  .   WEEKLY     Yes    Weekly SMF data
  .   MONTHLY    Yes    Monthly SMF data
  .   YEARLY     No     Yearly SMF data
  ****************************** End of list ******************************
```

Figure 90. Select a Group

This panel displays the Groups defined in System Definitions.

Each row gives the Group name and description and shows whether it has files defined and eligible for JCL generation.

Enter line action **S** (or point-and-shoot) to select a Group to insert in System Selection.

Select a Report Form

To tailor the format of the report or extract, select a Report Form. Position the cursor on the **Form** field on the Report or Extract panel, then press **Prompt** (F4). Only Forms of compatible type are listed. See Figure 91 for an example of Report Forms for the Performance List Report.

```
   File  Help
  -----------------------------------------------------------
                        Report Forms         Row 1 to 3 of 3
  Command ===> _____ Scroll ===> PAGE

  Select a Report Form then press Enter.


      Name       Type              Description
  .   LISTFRM1   LIST     List Report Form
  .   RESPLIST   LIST     List Report Form
  S   TRANLIST   LIST     List Report Form
  ********************** End of list **********************
```

Figure 91. Select a Report Form (LIST Example)

This panel displays the Report Forms defined in the current Report Forms data set. Only Report Forms of a compatible type to the report or extract are presented:
    Performance List Report - LIST Form
    Performance List Extended Report - LISTX Form
    Performance Summary Report - SUMMARY Form
    Cross-System Work Report - LIST and LISTX (sort ignored) Forms
    Export Extract - LIST, LISTX (sort ignored), and SUMMARY Forms

Enter line action **S** (or point-and-shoot) to select a Report Form to tailor your report.

Performance List Extended report

The Performance List Extended report provides a detailed list of the CMF performance class records. It differs from the Performance List report in that you can specify the sorting criteria for the performance class records.

To request the report, enter line action **S** against the **List Extended** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance List Extended Reports is displayed. Otherwise, the Performance List Extended Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                SAMPLE - Performance List Extended Reports      Row 1 from 4
 Command ===> _____  Scroll ===> ____

       ---- System Selection -----                       Selection
 /  Exc  APPLID +  Image +  Group +   Output     Form +     Criteria
 S       CICSP001  _____  _____  LSTX0001   LISTX1__   YES
 _       DEVT____  MVS1____ _____  LSTX0002   LISTX2__   NO
 _       CICST001  _____  _____  LSTX0003   LISTX1__   YES
 _    *  _____  _____ RSYSGRP1  LSTX0004   _____    NO
 ******************************** End of list ********************************
```

Figure 92. Performance List Extended Reports

This panel displays the list of Performance List Extended Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **LSTXnnnn** where nnnn is **0001-9999.**

If **Form** is not specified, CICS PA uses the default Form. See Figure 158 on page 309 for the default LISTX Report Form.

To display the Performance List Extended Report panel, enter line action **S** against the **List Extended** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                  SAMPLE - Performance List Extended Report
 Command ===> _____

 System Selection:                      Report Output:
  APPLID . . CICSP001  +                  DDname . . . . . . . . . LSTX0001
  Image  . . _____  +                  Print Lines per Page . . ___ (1-255)
  Group  . . _____  +

 Report Format:
  Form . . . LISTX1__  +
  Title  . . _____

             _____


 Selection Criteria:
  _   Performance  *


  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 93. Performance List Extended Report

Use this panel to specify report options, report format, and record selection criteria for the Performance List Extended report. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List Report. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **LSTXnnnn** where nnnn is **0001-9999.**

To select **Form** from a list of predefined LISTX Report Forms, use **Prompt** (F4). If a Form is not specified, CICS PA uses the default Form. See Figure 158 on page 309 for the default LISTX Report Form.

The precision of numerical fields in the report is specified in Global Options (see Figure 78 on page 171).

Performance Summary report

The Performance Summary report is a summary of the CMF performance class records.

To request the report, enter line action **S** against the **Summary** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance Summary Reports is displayed. Otherwise, the Performance Summary Report panel is displayed for you to define your first report of this type.

Performance Summary report

```
   File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                    SAMPLE - Performance Summary Reports          Row 1 from 4
 Command ===> _____ Scroll ===> ____

        ---- System Selection -----                          Selection
 /  Exc  APPLID +  Image +  Group +    Output     Form +    Criteria
 S       CICSP001  _____  _____    SUMM0001   SUMMARY1    YES
 _       DEVT____  MVS1___  _____    SUMM0002   SUMMARY2    NO
 _       CICST001  _____  _____    SUMM0003   SUMMARY1    YES
 _   *   _____   _____  RSYSGRP1   SUMM0004   _____     NO
 ******************************** End of list ********************************
```

Figure 94. Performance Summary Reports

This panel displays the list of Performance Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **SUMMnnnn** where nnnn is **0001-9999.**

If **Form** is not specified, CICS PA uses the default Form. See Figure 160 on page 314 for the default SUMMARY Report Form.

To display the Performance Summary Report panel, enter line action **S** against the **Summary** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
  File  Systems  Options  Help
 ------------------------------------------------------------------------------
                    SAMPLE - Performance Summary Report
 Command ===> _____

 System Selection:                        Report Output:
  APPLID . . CICSP001  +                    DDname . . . . . . . . . SUMM0001
  Image  . . _____  +                      Print Lines per Page . . ___  (1-255)
  Group  . . _____  +

 Report Format:
  Form . . . SUMMARY1  +
  Title  . . _____

             _____


 Reporting Options:
  Time Interval . . 00:01:00   (hh:mm:ss)
  Totals Level  . . 8          (blank or 0-8)

 Selection Criteria:                      Execution Option:
  _  Performance  *                        /  Use External Sort


  F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 95. Performance Summary Report

Use this panel to specify report options, report format, and record selection criteria for the Performance Summary report. The only mandatory option is the DDname for the report output. You can let the other options default.

The precision of numerical fields in the report is specified in Global Options (see Figure 78 on page 171).

The report options are the same as those for the Performance List Report (see "Performance List report" on page 188) but with the following additional options:

Time Interval

> The time interval applies when you want to summarize transaction activity over time. It is used when you specify a SUMMARY Report Form which has one or both sort fields **START** or **STOP** included. When reporting, CICS PA accumulates the data for each interval in the report period and writes a report line for each.

> Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours). The default is **00:01:00** (1 minute).

> A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

> A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

> Minutes take precedence for an abbreviated entry. For example:
> **1**   becomes 00:01:00
> **1.1**   becomes 00:01:00 (rounded down from 00:01:01)
> **1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

This option generates the `INTERVAL(hh:mm:ss)` operand.

Totals Level

This option applies only to the Summary HDB report. Leave blank if you do not want to include total lines in the report. This generates the NOTOTALS operand.

Specify a number between 1 and 8 to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. This generates the TOTALS(n) operand for n between 1 and 8. Default: **8**

Specify 0 for no subtotals, but print only the grand total. This generates the TOTALS(0) operand.

Use External Sort

Select **/** to use an external sort utility to process summary records. This is the default. It generates the **EXTERNAL(ddname)** operand. This provides the DDname of the work data set used by the external sort utility. CICS PA assigns an External Work File from a pool of External Work Files with default DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file.

An external sort should be used when processing large volumes of data.

If not selected, an internal sort is used.

CICS PA provides a default **Report Output DDname** in the format **SUMMnnnn** where nnnn is **0001-9999.**

To select a **Form** from a list of predefined SUMMARY Report Forms, use **Prompt** (F4). If a Form is not specified, CICS PA uses the default Form. See Figure 160 on page 314 for the default SUMMARY Report Form.

Performance Totals report

The Performance Totals report provides detailed statistics of all fields in the CMF performance class records. The statistics are accumulated during input file processing, and printed at the End of File.

To request the report, enter line action **S** against the **Totals** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Performance Totals Reports is displayed. Otherwise, the Performance Totals Report panel is displayed for you to define your first report of this type.

```
  File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                   SAMPLE - Performance Totals Reports         Row 1 from 4
 Command ===> _____  Scroll ===> ____

        ---- System Selection -----              Selection
 /  Exc  APPLID +  Image +  Group +    Output    Criteria
 S       CICSP001  _____  _____    TOTL0001  YES
 _       DEVT____  MVS1___  _____    TOTL0002  NO
 _       CICST001  _____  _____    TOTL0003  YES
 _    *  _____  _____  RSYSGRP1  TOTL0004  NO
 ******************************* End of list ********************************
```

Figure 96. Performance Totals Reports

This panel displays the list of Performance Totals Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **TOTLnnnn** where nnnn is **0001-9999.**

To display the Performance Totals Report panel, enter line action **S** against the **Totals** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
  File  Systems  Options  Help
 -------------------------------------------------------------------------------
                    SAMPLE - Performance Totals Report
 Command ===> _____

 System Selection:                         Report Output:
  APPLID . . CICSP001  +                     DDname . . . . . . . . . TOTL0001
  Image  . . _____   +                     Print Lines per Page . . ___ (1-255)
  Group  . . _____   +

 Report Format:
  Title  . . _____
             _____

 Selection Criteria:
  _   Performance  *

  F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 97. Performance Totals Report

Use this panel to specify report options and record selection criteria for the Performance Totals report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List report (see "Performance List report" on page 188), except there is no Report Form.

Performance Totals report

CICS PA provides a default **Report Output DDname** in the format **TOTLnnnn** where nnnn is **0001-9999.**

Wait Analysis report

The Wait Analysis report provides a breakdown of wait activity by Transaction ID (or other ordering fields). You can see at a glance which CICS resources are causing your transactions to be suspended. This report can help you to quickly identify the possible source of a performance response time problem.

To request the report, enter line action **S** against the **Wait Analysis** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Wait Analysis Reports is displayed. Otherwise, the Wait Analysis Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  -------------------------------------------------------------------------------
                      SAMPLE - Wait Analysis Reports              Row 1 from 4
  Command ===> _____      Scroll ===> ____

          ---- System Selection -----             Selection
  /  Exc  APPLID +  Image +  Group +   Output     Criteria
  S       CICSP001  _____  _____   WAIT0001    YES
  _       DEVT____  MVS1____ _____   WAIT0002    NO
  _       CICST001  _____  _____   WAIT0003    YES
  _   *   _____  _____ RSYSGRP1   WAIT0004    NO
  ****************************** End of list ********************************
```

Figure 98. Wait Analysis Reports

This panel displays the list of Wait Analysis Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **WAITnnnn** where nnnn is **0001-9999.**

To display the Wait Analysis Report panel, enter line action **S** against the **Wait Analysis** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
   File  Systems  Options  Help
 -----------------------------------------------------------------------------
                    SAMPLE - Wait Analysis Report
 Command ===> _____

 System Selection:                        Report Output:
  APPLID . . CICSP001  +                    DDname . . . . . . . . . WAIT0001
  Image  . . _____   +                    Print Lines per Page . . ___ (1-255)
  Group  . . _____   +

 Order by:
  1 . . _____   + 2 . . _____   + 3 . . _____   +

 Processing Options:
  Time Interval  . . . 00:01:00  (hh:mm:ss)

 Report Format:
  Title  . . _____

             _____


 Selection Criteria:
  _   Performance  *


  F1=Help     F3=Exit     F4=Prompt   F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 99. Wait Analysis Report

Use this panel to specify report options and record selection criteria for the Wait
Analysis report. The report format is fixed. The only mandatory option is the
DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form and there
are additional ordering and processing options:

Order by
> Specify the Field names that the Wait Analysis report is to be ordered by. If
> not specified, the report is ordered by Transaction ID. You can use **Prompt**
> (F4) to select from a list of allowed fields: TRAN, START, STOP, APPLID,
> PROGRAM, TERM, USERID, APPLPROG, APPLTRAN, FCTY, LUNAME,
> RLUNAME, RPTCLASS, SRVCLASS, TCLASSNM, TCPSRVCE,
> TERMCNNM, ISIPICNM.

Time Interval
> The time interval applies when you want to summarize wait activity over
> time, and is only applicable when one of the Ordering fields is a time stamp
> (START or STOP). For example, specify 00:15:00 if you want to summarize
> activity over 15 minute intervals.

> Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours).
> The default is **00:01:00** (1 minute).

> A time interval of less than one hour must fit evenly into the hour. CICS PA
> will round it down to the nearest interval that aligns to the hour. For
> example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval
> report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

1   becomes 00:01:00
1.1   becomes 00:01:00 (rounded down from 00:01:01)
1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

CICS PA provides a default **Report Output DDname** in the format **WAITnnnn** where nnnn is **0001-9999.**

Cross-System Work report

The Cross-System Work report accepts performance class data from a single or multiple CICS systems and correlates the data by network unit-of-work.

The report default is to print only the CMF performance class records that are contained in a unique network unit-of-work that includes multiple performance records. Note that the Cross-System Work report will also include multiple performance class records from a single system.

To request the report, enter line action **S** against the **Cross-System Work** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Cross-System Work Reports is displayed. Otherwise, the Cross-System Work Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                    SAMPLE - Cross-System Work Reports        Row 1 from 2
   Command ===> _____ Scroll ===> ____

       ---- System Selection -----                        Selection
  / Exc  APPLID +  Image +  Group +   Output     Form +   Criteria
  _      _____  _____  MROPROD_  CROS0001   _____    YES
  _      _____  _____  MROTEST_  CROS0002   _____    NO
  ****************************** End of list ******************************
```

Figure 100. Cross-System Work Reports

This panel displays the list of Cross-System Work Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **CROSnnnn** where nnnn is **0001-9999.**

To display the Cross-System Work Report panel, enter line action **S** against the **Cross-System Work** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular

report in the list.

```
   File  Systems  Options  Help
  -------------------------------------------------------------------------------
                      SAMPLE - Cross-System Work Report
  Command ===> _____

  System Selection:                        Report Output:
   APPLID . . _____    +                 DDname . . . . . . . . . CROS0001
   Image  . . _____    +                 Print Lines per Page . . ___  (1-255)
   Group  . . MROPROD_    +

  Processing Options:                      Task Ordering Options:
   1  1. UOWs with more than one record    1  1. Descending Stop time
      2. UOWs with a single record            2. Ascending Start time
      3. All UOWs

  Report Format:
   Form . . . _____    +
   Title  . . _____
              _____


  Selection Criteria:
   _  Performance (Record pre-processing)  *
   _  Performance (Unit-of-work post-processing)

   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 101. Cross-System Work Report

Use this panel to specify report options, report format, and record selection criteria for the Cross-System Work report. The mandatory options are the Report Output DDname and the network unit-of-work (UOW) Processing Option. You can let the other options default.

The report options are the same as those for the Performance List Report (see "Performance List report" on page 188), except there is an additional processing option and a LIST or LISTX Report Form can be specified:

Processing Options

Select option **1 - UOWs with more than one record** to report only the transaction performance records whose network unit-of-work spans multiple CMF records. This is the default. This selection generates the `PRINTMultiple` operand.

Select option **2 - UOWs with a single record** to report only the transaction performance records consisting of network units-of-work that include only a single CMF record. This selection generates the `PRINTSingle,NOPRINTMultiple` operand.

Select option **3 - All UOWs** to report all the transaction performance records. This selection generates the `PRINTSingle,PRINTMultiple` operand.

Task Ordering Options

Controls the sorting order of tasks within UOW in the List report. You can choose to order tasks by descending stop time (the default order) or ascending start time.

This option generates the operand `TASKORDER(START|STOP)`.

Report Form

The name of a Report Form to be used to tailor the format and content of the report. It can be either a LIST or LISTX Form. You can type the name directly, or to select one from a list of compatible Report Forms, use **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the `FIELDS` operand of the LISTX command. This produces a Cross-System Work Extended report like that shown in Figure 177 on page 376.

Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict reporting to the data that is of interest to you. For the Cross-System Work report, there are two levels of filtering available:

- **Record pre-processing.** CICS PA JCL generation translates Selection Criteria to the `SELECT(PERFORMANCE` operand.

  If you specify a Report Form that also has Selection Criteria specified, CICS PA JCL generation translates the Form's Selection Criteria to the `SELECT2(PERFORMANCE` operand. If both the report and the Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the report.

- **Unit-of-work post-processing.** There is an additional filtering capability available when a Report Form has not been specified. This generates the `SELUOW` operand to provide filtering across tasks in multi-task UOWs. If one task in a UOW matches the SELUOW selection criteria, then the entire UOW is selected. For more information, see "CROSSsystem - Cross-System Work report and extract" on page 402.

CICS PA provides a default **Report Output DDname** in the format **CROSnnnn** where nnnn is **0001-9999.**

Transaction Group report

The Transaction Group report accepts data from one or more CICS systems, correlating the data by transaction group id. The default is to print only the CMF performance class records that are contained in a transaction group that includes multiple performance records.

The Transaction Group report can be used to understand the correlation of the performance class records for the transactions that CICS executes as part of the same incoming work request (for example, the CWXN and CWBA transactions for CICS Web support requests).

To request the report, enter line action **S** against the **Transaction Group** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Group Reports is displayed. Otherwise, the Transaction Group Report panel is displayed for you to define your first report of this type.

```
  File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                    SAMPLE - Transaction Group Reports          Row 1 from 4
 Command ===> _____  Scroll ===> ____

        ---- System Selection -----          Selection
 /  Exc  APPLID +  Image +  Group +   Output    Criteria
 _       CICSP001  _____  _____   TRGP0001    YES
 _       DEVT____  MVS1____ _____   TRGP0002    NO
 _       CICST001  _____  _____   TRGP0003    YES
 _    *  _____  _____  RSYSGRP1  TRGP0004    NO
 ****************************** End of list ******************************
```

Figure 102. Transaction Group Reports

This panel displays the list of Transaction Group Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **TRGPnnnn** where nnnn is **0001-9999.**

To display the Transaction Group Report panel, enter line action **S** against the **Transaction Group** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
  File  Systems  Options  Help
 ------------------------------------------------------------------------------
                       SAMPLE - Transaction Group Report
 Command ===> _____

 System Selection:                      Report Output:
  APPLID . . CICSP001  +                 DDname . . . . . . . . . TRGP0001
  Image  . . _____   +                 Print Lines per Page . . ___ (1-255)
  Group  . . _____   +

 Processing Options:
 1  1. Groups of more than one record
    2. Groups of a single record
    3. All Groups

 Report Format:
  Title  . . _____
             _____

 Selection Criteria:
  _   Performance  *

  F1=Help     F3=Exit     F4=Prompt   F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 103. Transaction Group Report

Transaction Group Report

Use this panel to specify report options and record selection criteria for the Transaction Group report. The report format is fixed. The mandatory options are the Report Output DDname and the Transaction Group Processing Option. You can let the other options default.

The report options are the same as those for the Performance List Report (see "Performance List report" on page 188), except there is no Report Form and there is an additional processing option:

Processing Options

Select option **1 - Groups of more than one record** to report only the transaction performance records whose Transaction Group ID spans multiple CMF records. This is the default. This selection generates the `PRINTMultiple` operand.

Select option **2 - Groups of a single record** to report only the transaction performance records consisting of a Transaction Group ID that includes only a single CMF record. This selection generates the `PRINTSingle,NOPRINTMultiple` operand.

Select option **3 - All Groups** to report all the transaction performance records. This generates the `PRINTSingle,PRINTMultiple` operand.

CICS PA provides a default **Report Output DDname** in the format **TRGPnnnn** where nnnn is **0001-9999.**

BTS report

The BTS report accepts data from one or more CICS systems, correlating the data by CICS BTS process ID (root activity ID).

To request the report, enter line action **S** against the **BTS** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of BTS Reports is displayed. Otherwise, the BTS Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  ------------------------------------------------------------------------------
                        SAMPLE - BTS Reports                    Row 1 from 4
  Command ===> _____ Scroll ===> ____

        ---- System Selection -----              Selection
  / Exc  APPLID +  Image +  Group +   Output     Criteria
  S      CICSP001  _____  _____   CBTS0001    YES
  _      DEVT____  MVS1____ _____   CBTS0002    NO
  _      CICST001  _____  _____   CBTS0003    YES
  _  *   _____  _____  RSYSGRP1  CBTS0004    NO
  ****************************** End of list ********************************
```

Figure 104. BTS Reports

This panel displays the list of BTS (CICS Business Transaction Services) Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **CBTSnnnn** where nnnn is **0001-9999.**

To display the BTS Report panel, enter line action **S** against the **BTS** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
   File  Systems  Options  Help
  ----------------------------------------------------------------------------
                            SAMPLE - BTS Report
  Command ===> _____

  System Selection:                      Report Output:
   APPLID . . CICSP001  +                    DDname . . . . . . . . . CBTS0001
   Image  . . _____   +                      Print Lines per Page . . ___ (1-255)
   Group  . . _____   +

  Report Format:
   Title  . . _____

              _____


  Selection Criteria:
   _   Performance  *


   F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
   F12=Cancel
```

Figure 105. BTS Report

Use this panel to specify report options and record selection criteria for the BTS report. The report format is fixed. The only mandatory option is the DDname for the report output. You can let the other options default.

The report options are the same as those for the Performance List Report (see "Performance List report" on page 188), except there is no Report Form.

CICS PA provides a default **Report Output DDname** in the format **CBTSnnnn** where nnnn is **0001-9999.**

Workload Activity report

The Workload Activity report provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals.

The report processes all CMF transaction performance class records for network units-of-work containing multiple performance records as well as those with only a single performance record.

Two reports can be requested::

1. **Workload Activity List.** This is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed.

2. **Workload Activity Summary.** This report summarizes response time by WLM service and report classes.

Workload Activity report

To request the report, enter line action **S** against the **Workload Activity** Performance Report on the Report Set panel. If reports of this type have been previously specified, the list of Workload Activity Reports is displayed. Otherwsie, the Workload Activity Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  ------------------------------------------------------------------------------
                    SAMPLE - Workload Activity Reports          Row 1 from 4
  Command ===> _____ Scroll ===> ____

        ---- System Selection -----          Selection
  /  Exc  APPLID +  Image +  Group +   Output   Criteria
         CICSP001  _____  _____   WKLD0001    YES
  _      DEVT____  MVS1____ _____   WKLD0002    NO
  _      CICST001  _____  _____   WKLD0003    YES
  _   *  _____  _____  RSYSGRP1  WKLD0004    NO
  ****************************** End of list ********************************
```

Figure 106. Workload Activity Reports

This panel displays the list of Workload Activity Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **WKLDnnnn** where nnnn is **0001-9999.**

To display the Workload Activity Report panel, enter line action **S** against the **Workload Activity** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
  File  Systems  Options  Help
 ------------------------------------------------------------------------------
                     SAMPLE - Workload Activity Report
 Command ===> _____

 System Selection:                        Report Output:
  APPLID . . CICSP001  +                    DDname . . . . . . . . . WKLD0001
  Image  . . _____   +                      Print Lines per Page . . ___ (1-255)
  Group  . . _____   +

 Reports Required:
  /  Summary                                   List
         Include EXE Y tasks                    1  1. Descending Stop Time
                                                   2. Ascending Start Time
  Peak Percentile . . 90   (50-100%)

 Report Format:
  Title  . . _____

             _____


 Selection Criteria:
  _   Performance  *


  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 107. Workload Activity Report

Use this panel to specify report options and record selection criteria for the Workload Activity report. The report format is fixed. The only mandatory option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see "Performance List report" on page 188), except there is no Report Form, you can select the reports you require, and there is an additional processing option:

Reports Required
> Enter **/** to select the reports you want produced.
> - Select **List** to request the Workload Manager Activity List report, a detailed listing of transaction activity in begin-to-end (BTE) phases, completed execution phases (EXE Y), and incomplete execution phases (EXE N). This report requires an external sort.
>
>   You can choose how tasks are sorted within UOW in the List report: by descending stop time (the default order) or ascending start time. This option generates the operand TASKORDER(START|STOP).
> - Select **Summary** to request the Workload Manager Activity Summary report.
>
>   Select **Include EXE Y tasks** to summarize transactions in both completed execution phases (EXE Y) and begin-to-end (BTE) phases, otherwise the report contains BTE transactions only. EXE N transactions cannot be summarized. The Summary report with both BTE and EXE transactions requires an external sort.
>
>   The default is the Summary report with BTE transactions only. It is a very quick report as no external sort is required.

Peak Percentile
> This option applies to the Workload Activity Summary report. Specify a number between 50 and 100 to report the response time within which that percentage of transactions completed. Computations assume a normal

distribution. For example, 95 shows the response time that 95% of transactions completed within. The default is **90.**

CICS PA JCL generation translates this value to the `PEAK(percentile)` operand.

CICS PA provides a default **Report Output DDname** in the format **WKLDnnnn** where nnnn is **0001-9999.**

Exception reports

The Exception Reports process CMF exception class data to produce tabular-style reports.

Exception List report

The Exception List report provides two types of information:
- The cause of the exception condition
- The information necessary to relate this record to the performance class record on the Performance List report.

To request the report, enter line action **S** against the **List** Exception Report on the Report Set panel. If reports of this type have been previously specified, the list of Exception List Reports is displayed. Otherwise, the Exception List Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                    SAMPLE - Exception List Reports           Row 1 from 4
 Command ===> _____      Scroll ===> ____

         ---- System Selection -----              Selection
 /  Exc  APPLID +  Image +  Group +    Output    Criteria
 _       CICSP001  _____  _____    XLST0001    YES
 _       DEVT____  MVS1____ _____    XLST0002    NO
 _       CICST001  _____  _____    XLST0003    YES
 _   *   _____   _____  RSYSGRP1   XLST0004    NO
 ****************************** End of list ********************************
```

Figure 108. Exception List Reports

This panel displays the list of Exception List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **XLSTnnnn** where nnnn is **0001-9999.**

To display the Exception List Report panel, enter line action **S** against the **List** Exception Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

Exception List report

```
  File  Systems  Options  Help
 ----------------------------------------------------------------------------
                        SAMPLE - Exception List Report
 Command ===> _____

 System Selection:                        Report Output:
  APPLID . . CICSP001  +                    DDname . . . . . . . . . XLST0001
  Image  . . _____  +                    Print Lines per Page . . ___ (1-255)
  Group  . . _____  +

 Report Format:
  Title  . . _____
             _____


 Selection Criteria:
  _  Exception  *

  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 109. Exception List Report

Use this panel to specify report options and record selection criteria for the
Exception List report. The report format is fixed. The only mandatory option is the
DDname for the report output. You can let the other options default.

The options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form.

CICS PA provides a default **Report Output DDname** in the format **XLSTnnnn**
where nnnn is **0001-9999.**

Whereas the Selection Criteria for Performance Reports apply to CMF performance
class records, those for Exception Reports apply to CMF exception class records.

Exception Selection Criteria

Selection Criteria allow you to filter the CMF exception records on time
periods and field values to restrict reporting to the data that is of interest to
you.

Line Actions: Valid line actions are:

/   Display the menu of line actions.

S   Select to display the subpanel where Selection Criteria can be
         specified for this report. See "Specifying Selection Criteria" on page
         176 for a discussion on how to do this.

A   Activate the Selection Criteria so they will be generated for this
         report when the Report Set is submitted. Selection Criteria can only
         be activated if one or more Select Statements are specified and not
         all are excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here
         will not be used.

Exception Summary report

The Exception Summary report summarizes the exception records collected by the
CICS Monitoring Facility (CMF). Records are summarized by transaction identifier
code. The report provides the total number of exceptions for each transaction,
according to the following:

- For auxiliary temporary storage VSAM buffer and string wait conditions
- For coupling facility data table pool wait conditions
- For VSAM LSRPOOL buffer and string wait conditions
- For VSAM file string wait conditions
- For temporary storage wait conditions
- For main storage wait conditions

To request the report, enter line action **S** against the **Summary** Exception Report on the Report Set panel. If reports of this type have been previously specified, the list of Exception Summary Reports is displayed. Otherwise, the Exception Summary Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  ------------------------------------------------------------------------------
                    SAMPLE - Exception Summary Reports           Row 1 from 4
  Command ===> _____  Scroll ===> ____

         ---- System Selection -----            Selection
  /  Exc  APPLID +  Image +  Group +   Output    Criteria
  _       CICSP001  _____  _____   XSUM0001    YES
  _       DEVT____  MVS1____ _____   XSUM0002    NO
  _       CICST001  _____  _____   XSUM0003    YES
  _    *  _____   _____  RSYSGRP1  XSUM0004    NO
  ******************************* End of list ********************************
```

Figure 110. Exception Summary Reports

This panel displays the list of Exception Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **XSUMnnnn** where nnnn is **0001-9999.**

To display the Exception Summary Report panel, enter line action **S** against the **Summary** Exception Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

Exception Summary report

```
  File  Systems  Options  Help
 --------------------------------------------------------------------------------
                      SAMPLE - Exception Summary Report
 Command ===> _____

 System Selection:                        Report Output:
  APPLID . . CICSP001  +                   DDname . . . . . . . . . XSUM0001
  Image  . . _____  +                   Print Lines per Page . . ___  (1-255)
  Group  . . _____  +

 Report Format:
  Title  . . _____
             _____


 Selection Criteria:
  _  Exception  *


  F1=Help     F3=Exit     F4=Prompt   F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 111. Exception Summary Report

Use this panel to specify report options and record selection criteria for the
Exception Summary report. The report format is fixed. The only mandatory option is
the DDname for the report output. You can let the other options default.

The options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form.

Whereas the Selection Criteria for Performance Reports apply to CMF performance
class records, those for Exception Reports apply to CMF exception class records.

CICS PA provides a default **Report Output DDname** in the format **XSUMnnnn**
where nnnn is **0001-9999.**

Transaction Resource Usage reports

The Transaction Resource Usage reports are produced from CMF performance class and transaction resource class data. The reports in this category are:
- "File Usage Summary report"
- "Temporary Storage Usage Summary report" on page 220
- "Transaction Resource Usage List report" on page 223

File Usage Summary report

The File Usage Summary report provides a detailed analysis of CMF transaction resource class data for Files.

Two reports can be requested:

1. **Transaction File Usage Summary.** This report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and File Control statistics followed by a breakdown of File usage for each File used by the Transaction.

2. **File Usage Summary.** This report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

Note: The File Usage Summary report is only supported for CMF transaction resource class data from CICS Transaction Server Versions 1.3 and 2.2 or later.

To request the report, enter line action **S** against the **File Usage Summary** Transaction Resource Usage Report on the Report Set panel. If reports of this type have been previously specified, the list of File Usage Summary Reports is displayed. Otherwise, the File Usage Summary Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  -----------------------------------------------------------------------------
                    SAMPLE - File Usage Summary Reports        Row 1 from 2
   Command ===> _____  Scroll ===> ____

          ---- System Selection -----              Selection
  /  Exc  APPLID +  Image +  Group +   Output     Criteria
  S       CICSP001  _____  _____  FILE0001    NO
  _       DEVT____  MVS1____ _____  FILE0002    NO
  ******************************* End of list ********************************
```

Figure 112. File Usage Summary Reports

This panel displays the list of File Usage Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **FILEnnnn** where nnnn is **0001-9999.**

File Usage Summary report

Enter line action **S** to select a report from the list.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                     SAMPLE - File Usage Summary Report
 Command ===> _____

 System Selection:                       Report Output:
  APPLID . . CICSP001  +                   DDname . . . . . . . . . FILE0001
  Image  . . _____  +                   Print Lines per Page . . ___  (1-255)
  Group  . . _____  +

 Summary Reports Required:
  /  Transaction File Usage
  /  File Usage
     /  Break down by Transaction ID
     /  Include Transaction Totals

 Report Format:
  Title  . . _____
             _____

 Selection Criteria:
  _   Performance

  F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 113. File Usage Summary Report

Use this panel to specify report options and record selection criteria for the File
Usage Summary report. The report format is fixed. The only mandatory option is the
Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form, and you
can select the reports you require.

The default **Report Output DDname** has the format **FILEnnnn** where nnnn is
0001-9999.

Summary Reports Required
> Enter **/** to select the required reports.

> **Transaction File Usage**
>> This requests the Transaction File Usage Summary report, a
>> summary of File activity by Transaction ID. For each Transaction ID,
>> Transaction and File Control statistics are followed by File usage
>> statistics for each File used by the Transaction.

>> This option generates the `TRANSUMMARY(FILE)` operand.

> **File Usage**
>> This requests the File Usage Summary report, a summary of File
>> activity by File.
>> * Select **Break down by Transaction ID** to show File usage
>>   statistics by Transaction ID for each File.
>> * Select **Include Transaction Totals** to show totals for each File.

>> This option generates the `FILESUMMARY(BYTRAN,TOTAL)` operand.

Performance Selection Criteria

Performance Selection Criteria apply to both transaction resource class data and performance class data. You can request a report from all available records, or you can provide Selection Criteria to request a report from only the records that meet your specific requirements.

Transaction resource class records contain Task Identification and File Entry information. For more information on the format of transaction resource class records, refer to the *CICS Performance Analyzer for z/OS Report Reference.*

For the selection of transaction resource class records, only some fields in the Selection Criteria are applicable. All other fields are ignored.

The Selection Criteria fields applicable to Task Identification are:
    ACTIVE
    FCTY
    LUNAME
    NETUOWSX
    PROGRAM
    RSYSID
    START
    STOP
    TASKNO
    TERM
    TRAN
    USERID

The Selection Criteria fields applicable to File Entries (see note 1) are:
    FILENAME (see note 2)
    FCAMCT (Count)
    FCADD (Count only, see note 3)
    FCBROWSE (Count only, see note 3)
    FCDELETE (Count only, see note 3)
    FCGET (Count only, see note 3)
    FCPUT (Count only, see note 3)
    FCTOTAL (Count only, see note 3)
    CFDTWAIT (Time and Count)
    RLSWAIT (Time and Count)

Notes:

1. Selection Criteria for File Entries can affect Task Identification selection. If all File entries for a task are excluded, then the task is also excluded.

2. FILENAME is a special field that applies only to transaction resource class data. It is ignored when processing performance class data.

3. Selection Criteria only supports the checking of the Count component of File request fields. The Time component cannot be checked. These fields are common to both performance class (Count) and transaction resource class (Clock - COUNT and TIME), but have differing data types. Since the performance fields are Count (not Clock) fields, only the Count component is supported by Selection Criteria.

Temporary Storage Usage Summary report

The Temporary Storage Usage Summary report provides a detailed analysis of CMF transaction resource class data for temporary storage queues.

Two reports can be requested:

1. **Transaction Temporary Storage Usage Summary.** This report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and Temporary Storage Control statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage Queue used by the Transaction.

2. **Temporary Storage Usage Summary.** This report summarizes Temporary Storage activity. For each Temporary Storage Queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

Note: The Temporary Storage Usage Summary report is only supported for CMF transaction resource class data from CICS Transaction Server Versions 1.3 and 2.2 or later.

To request the report, enter line action **S** against the **Temporary Storage Usage Summary** Transaction Resource Usage Report on the Report Set panel. If reports of this type have been previously specified, the list of Temporary Storage Usage Summary Reports is displayed. Otherwise, the Temporary Storage Usage Summary Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
              SAMPLE - Temporary Storage Summary Reports        Row 1 from 2
 Command ===> _____ Scroll ===> ____


         ---- System Selection -----              Selection
 /  Exc  APPLID +  Image +  Group +   Output      Criteria
 S       CICSP001  _____  _____  TEMP0001    NO
 _       DEVT____  MVS1____ _____  TEMP0002    NO
 ******************************* End of list *******************************
```

Figure 114. Temporary Storage Usage Summary Reports

This panel displays the list of Temporary Storage Usage Summary Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **TEMPnnnn** where nnnn is **0001-9999.**

Enter line action **S** to select a report from the list.

```
   File  Systems  Options  Help
  ----------------------------------------------------------------------------
                    SAMPLE - Temporary Storage Summary Report
  Command ===> _____

  System Selection:                        Report Output:
   APPLID . . CICSP001  +                    DDname . . . . . . . . . TEMP0001
   Image  . . _____   +                    Print Lines per Page . . ___ (1-255)
   Group  . . _____   +

  Summary Reports Required:
   /  Transaction Temporary Storage Usage
   /  Temporary Storage Usage
      /  Break down by Transaction ID
      /  Include Transaction Totals

  Report Format:
   Title  . . _____

              _____


  Selection Criteria:
   _  Performance


   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 115. Temporary Storage Usage Summary Report

Use this panel to specify report options and record selection criteria for the
Temporary Storage Usage report. The report format is fixed. The only mandatory
option is the Report Output DDname. You can let the other options default.

The report options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form, and you
can select the reports you require.

The default **Report Output DDname** has the format **TEMPnnnn** where nnnn is
0001-9999.

Summary Reports Required

> Enter **/** to select the required reports.

> > **Transaction Temporary Storage Usage**

> > > This requests the Transaction Temporary Storage Usage Summary
> > > report. This report summarizes Temporary Storage usage by
> > > Transaction ID. For each Transaction ID, it gives Transaction
> > > Identification and Temporary Storage Control statistics followed by a
> > > breakdown of Temporary Storage usage for each Temporary
> > > Storage Queue used by the Transaction.

> > > This option generates the `TRANSUMMARY(TEMPSTOR)` operand.

> > **Temporary Storage Usage**

> > > This requests the Temporary Storage Usage Summary report. This
> > > report summarizes Temporary Storage activity, breaking down
> > > individual TSQueue usage by Transaction ID.

> > > • Select **Break down by Transaction ID** to include individual
> > >   Transaction statistics.

> > > • Select **Include Transaction Totals** to include total Transaction
> > >   statistics.

Temporary Storage Usage Summary report

This option generates the `TEMPSTORSUMMARY(BYTRAN,TOTAL)` operand.

Performance Selection Criteria

Performance Selection Criteria applies to both transaction resource class data and performance class data. You can request a report from all available records, or you can provide Selection Criteria to request a report from only the records that meet your specific requirements.

Transaction resource class records contain Task Identification and Temporary Storage Entry information. For more information on the format of transaction resource class records, refer to the *CICS Performance Analyzer for z/OS Report Reference.*

For the selection of transaction resource class records, only some fields in the Selection Criteria are applicable. All other fields are ignored.

The Selection Criteria fields applicable to Task Identification are:
- ACTIVE
- FCTY
- LUNAME
- NETUOWSX
- PROGRAM
- RSYSID
- START
- STOP
- TASKNO
- TERM
- TRAN
- USERID

The Selection Criteria fields applicable to Temporary Storage Entries (see note 1) are:
- TSQNAME (see note 2)
- TSGET (Count only, see note 3)
- TSPUTAUX (Count only, see note 3)
- TSPUTMCT (Count only, see note 3)
- TSTOTAL (Count only, see note 3)
- TSSHWAIT (Time and Count)
- TSWAIT (Time and Count)

Notes:

1. Selection Criteria for Temporary Storage Entries can affect Task Identification selection. If all Temporary Storage entries for a task are excluded, then the task is also excluded.

2. TSQNAME is a special field that applies only to transaction resource class data. It is ignored when processing performance class data.

3. Selection Criteria only supports the checking of the Count component of Temporary Storage request fields. The Time component cannot be checked. These fields are common to both performance class (Count) and transaction resource class (Clock - COUNT and TIME), but have differing data types. Since the performance fields are Count (not Clock) fields, only the Count component is supported by Selection Criteria.

Transaction Resource Usage List report

The Transaction Resource Usage List report provides a detailed list of CMF transaction resource class data. The records are reported in the sequence that they appear in the SMF file.

The report gives Transaction information together with statistics by transaction of File and Temporary Storage usage.

Note: The Transaction Resource Usage List report is only supported for CMF transaction resource class data from CICS Transaction Server Versions 1.3 and 2.2 or later. Currently, File and Temporary Storage usage are the only types of transaction resource data available.

To request the report, enter line action **S** against the **Transaction Resource Usage List** report on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Resource Usage List Reports is displayed. Otherwise, the Transaction Resource Usage List Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  --------------------------------------------------------------------------
              SAMPLE - Transaction Resource Usage Reports      Row 1 from 2
  Command ===> _____  Scroll ===> ____

       ---- System Selection -----             Selection
  /  Exc  APPLID +  Image +  Group +   Output    Criteria
  S       CICSP001  _____  _____   RESU0001    NO
  _       DEVT____  MVS1____ _____   RESU0002    NO
  ****************************** End of list ********************************
```

Figure 116. Transaction Resource Usage Reports

This panel displays the list of Transaction Resource Usage List Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **RESUnnnn** where nnnn is **0001-9999.**

Enter line action **S** to select a report from the list.

Transaction Resource Usage List report

```
  File  Systems  Options  Help
 ------------------------------------------------------------------------------
                  SAMPLE - Transaction Resource Usage Report
 Command ===> _____

 System Selection:                      Report Output:
  APPLID . . CICSP001  +                   DDname . . . . . . . . . RESU0001
  Image  . . _____  +                     Print Lines per Page . . ___ (1-255)
  Group  . . _____  +

 Detailed List Reports Required:
  /  File Usage
  /  Temporary Storage

 Report Format:
  Title  . . _____
             _____


 Selection Criteria:
  _   Performance


  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 117. Transaction Resource Usage List Report

Use this panel to specify report options and record selection criteria for the
Transaction Resource Usage List report. The report format is fixed. The only
mandatory option is the Report Output DDname. You can let the other options
default.

The report options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form, and you
can select the reports you require.

The default **Report Output DDname** has the format **RESUnnnn** where nnnn is
0001-9999.

Detailed List Reports Required

Enter **/** to select the report.

File Usage

The File Usage List report provides a trace of Transaction resource
class records that include File information. The report consists of
Transaction information from the Task Identification section,
followed by one sub-section for each File used.

This option generates the `TRANLIST(FILE)` operand.

Temporary Storage Usage

The Temporary Storage Usage List report provides a trace of
Transaction resource class records that include TSQueue
information. The report consists of Transaction information from the
Task Identification section, followed by one sub-section for each
TSQueue used.

This option generates the `TRANLIST(TEMPSTOR)` operand.

Performance Selection Criteria

Performance Selection Criteria applies to both transaction resource class data and performance class data. The Transaction Resource Usage List report processes only transaction resource class data and includes File Usage and Temporary Storage Usage statistics.

- For the Selection Criteria applicable to File Usage processing, see "Performance Selection Criteria" on page 219.
- For the Selection Criteria applicable to Temporary Storage Usage processing, see "Performance Selection Criteria" on page 222.

Subsystem reports

The Subsystem reports are produced from database subsystem accounting data stored in SMF files. The reports in this category are:
* DB2 report
* WebSphere MQ report
* OMEGAMON reports

DB2 report

The DB2 report processes CICS CMF performance class (SMF 110) records and DB2 accounting (SMF 101) records to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report.

The DB2 report matches CMF Performance records with DB2 accounting records by network unit-of-work id. Your CICS-DB2 resources must be defined with **ACCOUNTREC(TASK)** or **ACCOUNTREC(UOW)** for matching to occur.

The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction:
* For CMF records: by APPLID/transaction/program
* For DB2 records: by APPLID/transaction/program/SSID/plan

The reports include the following DB2 information:
* DB2 Thread Identification, for easy cross-reference to DB2 PM
* Class 1 Thread elapsed and CPU times
* Class 2 In-DB2 elapsed and CPU times
* Class 3 Suspend times
* Buffer Manager statistics
* Locking statistics
* SQL DML statistics

A Recap report showing processing statistics is always printed at the end.

To request the DB2 report, enter line action **S** against the **DB2** Subsystem Report on the Report Set panel. If reports of this type have been previously specified, the list of DB2 Reports is displayed. Otherwise, the DB2 Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  -----------------------------------------------------------------------------
                       SAMPLE - DB2 Reports                     Row 1 from 4
   Command ===> _____ Scroll ===> ____

        ---- System Selection -----             Selection
   / Exc  APPLID +  Image +  Group +   Output    Criteria
   _       CICSP001  _____  _____   DB2R0001    YES
   _       DEVT____  MVS1____ _____   DB2R0002    NO
   _       CICST001  _____  _____   DB2R0003    YES
   _   *   _____  _____ RSYSGRP1  DB2R0004    NO
   ****************************** End of list ******************************
```

Figure 118. DB2 Reports

This panel displays the list of DB2 Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

The line actions are the same as on similar Reports list panels. See page 190.

Enter line action **S** to select a report in the list.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                         SAMPLE - DB2 Report
 Command ===> _____

 CICS System Selection:                     Report Output:
  APPLID . . CICSP001  +                      DDname . . . . . . . . . DB2R0001
  Image  . . _____  +                      Print Lines per Page . . ___ (1-255)
  Group  . . _____  +

 DB2 System Selection:                      Report Options:
  SSID . . . DB2P  +                          /  Process DB2 Accounting records
  Image  . . _____  +                      _  List records with no DB2 activity
  Group  . . _____  +                      /  Long Summary with DB2 maximums

 Reports           ----- DB2 Accounting data to include in report ------
 Required:         Class1  Class2  Class3  Buffer  Locking  DML 1  DML 2
  _  List             /       /       _       /       /        _      _
  _  Long Summary     /       /       _       /       /        _      _
  /  Short Summary

 Report Format:
  Title  . . _____

             _____

 Selection Criteria:
  _  Performance  *

  F1=Help     F3=Exit     F4=Prompt   F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 119. DB2 Report

Use this panel to specify report options and record selection criteria for the DB2 report. The only mandatory option is the Report Output DDname. You can let the other options default.

The options are:

CICS System Selection

Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems.

DB2 report

Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

DB2 System Selection

DB2 System Selection identifies the DB2 subsystems that you want to report against. The DB2 subsystem(s) must be those used by the specified CICS systems, otherwise they will be ignored by DB2 report processing.

You do not need to specify a DB2 System Selection. If you don't, then the following will occur:

- When the CICS System Definition specifies a Group that contains DB2 SSIDs, then CICS PA uses the DB2 SSIDs defined to the Group.
- Otherwise CICS PA assumes that the DB2 Accounting records are contained in the same file as the CICS system's CMF records, and will automatically determine the correct DB2 subsystem(s) for the CICS system(s) to be reported.

Any combination of SSID, Image, or Group can be specified but must be defined in your System Definitions. Use **Prompt** (F4) to select from a list of defined Systems, Images or Groups. To modify your System Definitions, select **Systems** in the action bar.

CICS PA uses the DB2 System Selection in JCL generation to build the `SSID(ssid1,ssid2,ssid3,...)` operand.

Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **DB2Rnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60.**

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the `LINECount(nnn)` operand.

Reports Required

Enter **/** to select the reports you want produced. The Recap report is always produced at the end to provide processing statistics.

- Select **List** to request the DB2 List report, a detailed list of all network units-of-work with DB2 activity, consolidating CMF performance class records and DB2 accounting data. This selection generates the `LIST` operand.
- Select **Long Summary** to request the DB2 Long Summary report which summarizes these details by transaction and program within APPLID, giving average and maximum values for each. This selection generates the `LONGSUM` operand.
- Select **Short Summary** to request the DB2 Short Summary report which is an abridged version of the Long Summary report with significantly less detail and averages only (no maximums). This selection generates the `SHORTSUM` operand and is the default.

DB2 Accounting data to include in reports

This option applies to the DB2 List and Long Summary reports, and then only if **Process DB2 Accounting records** is selected.

Enter **/** to select the DB2 detail lines to include in each report:

Class1	Thread Time (default)
Class2	In-DB2 Time (default)
Class3	Suspend Time
Buffer	Buffer Manager Summary (default)
Locking	Locking Summary (default)
DML 1	SQL DML Query/Update
DML 2	SQL DML 'Other'

The default is to include **Class1, Class2, Buffer,** and **Locking.**

Note: Thread Identification is always reported.

If the List report is selected, JCL generation translates this option to `LIST(CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2)`.

If the LongSummary report is selected, JCL generation translates this option to `LONGSUM(CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2)`.

Report Options

The DB2 Report processes all CMF performance data records that are within a network unit-of-work that involves some DB2 activity. You can control the amount of processing and volume of output by restricting the data that is reported.

Enter **/** to select the type of data to include in the report:

Process DB2 Accounting records
Select this option for CICS PA to process DB2 Accounting (SMF 101) records. Selected is the default.

If not selected, then the `CMFONLY` operand is generated, and CICS PA just reports the DB2 statistics contained in the CMF performance records.

List records with no DB2 activity
This option only applies to the DB2 List report. Select this option to report CMF performance records with DB2REQCT=0 provided they are part of a network unit-of-work that has some DB2 activity. If selected, the `LISTZERO` operand is generated.

Not selected is the default.

Long Summary with DB2 maximums
Select this option to include maximum values in the DB2 Accounting detail lines of the Long Summary report. If selected, the `MAXLONGSUM` operand is generated and both average and maximum values are reported. Selected is the default.

If not selected, the `NOMAXLONGSUM` operand is generated and only the averages are reported.

Title Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

Performance Selection Criteria
For information on how the Selection Criteria applies to the DB2 Accounting records, see "Selecting DB2 accounting records" on page 186.

Line Actions: Valid line actions are:

/ Display the menu of line actions.

S Select to display the subpanel where Selection Criteria can be specified for this report. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A Activate the Selection Criteria so they will be generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

D Deactivate the Selection Criteria. Any you may have specified here will not be used.

Select a System (DB2 SSID)

To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **DB2 SSID** field in System Selection. Only the systems of that type are displayed. See Figure 120 on page 231 for an example showing a list of DB2 SSIDs.

Enter a **/** or **S** line action (or point-and-shoot) to select a system from the list to insert in your System Selection.

```
                              Systems                      Row 1 to 4 of 4
  Command ===> _____  Scroll ===> PAGE


  Select a System then press Enter.


     System     Image    Files   Description
  .  DB2P       MVS1     Yes     DB2 Subsystem DB2P/MVS1_____
  .  DB2D       MVS1     Yes     DB2 Subsystem DB2D/MVS1_____
  .  DB2E                Yes     DB2 Subsystem DB2E_____
  .  DB2F                No      DB2 Subsystem DB2F_____
  ******************************* End of list ****************************
```

Figure 120. Select a System (DB2 SSID)

WebSphere MQ report

The WebSphere MQ report processes WebSphere MQ SMF accounting (SMF 116) records to produce a detailed view of WebSphere MQ usage by your CICS systems.

The WebSphere MQ List reports provide, depending on the WebSphere MQ accounting traces that are active, details about:
- Transactions
- WebSphere MQ Queues that were referenced
- WebSphere MQ global (not Transaction-specific or Queue-specific) statistics
- WebSphere Queue-specific commands issued by Transaction

These can be sorted and aggregated by Transaction ID or Queue name or both.

To request the report, enter line action **S** against the **WenSphere MQ** Subsystem Report on the Report Set panel. If reports of this type have been previously specified, the list of WebSphere MQ Reports is displayed. Otherwise, the WebSphere MQ panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  --------------------------------------------------------------------------
                  SAMPLE - WebSphere MQ Reports              Row 1 from 2
  Command ===> _____  Scroll ===> ____


        ---- System Selection -----            Selection
  / Exc MQ SSID + Image + Group +   Output     Criteria
                                    MQ000001    NO
  _    ____    _____ _____      MQ000002    NO
  _    ____    _____ _____
  ******************************* End of list ****************************
```

Figure 121. WebSphere MQ Reports

This panel displays the list of WebSphere MQ reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

MQ System Selection
> System Selection identifies the MQ Subsystems and associated SMF files

WebSphere MQ report

that you want to report against. MQ System Selection can be specified here or on the WebSphere MQ Report panel. For more information, see page 232.

Output

CICS PA provides a default **Report Output DDname** in the format **MQ00nnnn** where nnnn is **0001-9999.**

The line actions are the same as on similar Reports list panels. See page 190.

Enter line action **S** to select a report in the list.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                       SAMPLE - WebSphere MQ Report
 Command ===> _____

 MQ System Selection:                    Report Output:
  SSID . . . ____   +                      DDname . . . . . . . . . MQ000001
  Image  . . _____  +                   Print Lines per Page . . ___ (1-255)
  Group  . . _____  +

 Reports Required:                       Process Accounting Class Records:
  _  List report                          1  1. Class 1
  /  Summary report                          2. Class 3

 Sort Summary by:
  1  1. Transaction  2. Queue  3. Transaction/Queue  4. Queue/Transaction

 Report Filter:
  Queue Name _____

 Report Format:
  Title  . . _____
             _____

 Selection Criteria:
  _  Performance

  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 122. WebSphere MQ Report

Use this panel to specify report options and record selection criteria for the WebSphere MQ report. The only mandatory option is the Report Output DDname. You can let the other options default.

The options are:

MQ System Selection

System Selection identifies the MQ Subsystems and associated SMF files that you want to report against. Any combination of MQ SSID, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- An MQ SSID.
- An MQ SSID for a particular Image. This identifies a particular MQ Subsystem when there is more than one with the same ID.

- An Image. CICS PA will report on all MQ systems running on this Image using the SMF files defined for the Image.
- An MQ SSID and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all MQ systems in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the `SSID(ssid1,ssid2,ssid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **MQ00nnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60.**

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the `LINECount(nnn)` operand.

Reports Required

Enter **/** to select the reports you want produced.

- Select **List** to request the WebSphere MQ List report. This selection generates the `LIST` operand.
- Select **Summary** to request the WebSphere MQ Summary report. This selection generates the `SUMMARY` operand and is the default.

Process Accounting Class Records

Select the type of MQ accounting data to process. Select either:

1. **Class 1** to request that the reports process MQ Class 1 records only. This is the default. This selection generates the `CLASS1` operand.
2. **Class 3** to request that the reports process MQ Class 3 records only. This selection generates the `CLASS3` operand.

If you need to report both Class 1 and Class 3 data, define another MQ report. CICS PA will produce both reports in a single pass of the data.

Sort Summary by

Specify the required sorting sequence of the Summary report. You can order the Summary report by one of the following:

1. Transaction ID. This generates the `SORT(TRAN)` operand and is the default.
2. WebSphere Queue name. This generates the `SORT(QUEUE)` operand.
3. Transaction ID, then Queue name. This generates the `SORT(TRAN,QUEUE)` operand.
4. Queue name, then Transaction ID. This generates the `SORT(QUEUE,TRAN)` operand.

Report Filter
Specify a Queue name to select records for a particular WebSphere MQ queue name. You can specify a pattern such as CICSMQ* to include more than one queue name. The queue name is case-sensitive.

This option generates the `QNAME(name)` operand.

Title Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

Performance Selection Criteria
The fields that can be specified in Selection Criteria for filtering MQ accounting (SMF 116) records are:

APPLID	CICS APPLID
TRAN	CICS Transaction ID
TASKNO	CICS Task ID
START	MQ Thread Begin Time
STOP	MQ Thread End Time
ACTIVE	MQ Thread Begin-End Time

Line Actions: Valid line actions are:

/ Display the menu of line actions.

S Select to display the subpanel where Selection Criteria can be specified for this report. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A Activate the Selection Criteria so they will be generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

D Deactivate the Selection Criteria. Any you may have specified here will not be used.

Select a System (MQ SSID)

To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **MQ SSID** field in System Selection. Only the systems of that type are displayed. See Figure 123 on page 235 for an example showing a list of MQ SSIDs.

Enter a **/** or **S** line action (or point-and-shoot) to select a system from the list to insert in your System Selection.

```
                              Systems                       Row 1 to 2 of 2
   Command ===> _____ Scroll ===> PAGE


   Select a System then press Enter.


     System    Image    Files  Description
   . MQ1T      MVS1      Yes    MQ Subsystem MQ1T/MVS1_____
   . MQ1P                No     MQ Subsystem MQ1P_____
   ******************************* End of list ****************************
```

Figure 123. Select a System (MQ SSID)

WebSphere MQ accounting traces

WebSphere MQ accounting records are produced as a result of activating the
Accounting Trace component of WebSphere MQ. That activation is a consequence
of either coding a suitable parameter in a WebSphere MQ control block or by the
issuing of a WebSphere MQ subsystem command from the MVS Operator Console.
If the WebSphere MQ accounting trace is active, WebSphere MQ SMF accounting
records (type 116) are produced with a subtype (0, 1 or 2) depending on what level
of trace has been activated. If the MQ accounting trace is active, subtype 0 records
are always produced but subtypes 1 and 2 are only produced if CLASS(3) is
specified when the trace is activated; this can only be performed via an MVS
Operator Command.

OMEGAMON reports

The OMEGAMON reports process OMEGAMON XE for CICS (SMF 112) records to
produce a detailed view of how CICS transactions use the following types of
database management system (DBMS):
   Adabas
   CA-DATACOM
   CA-IDMS
   Supra

For each type of DBMS, you can request up to three reports:

* A List report, showing database usage for each transaction.

* A Transaction Summary report, showing database usage summarized by
  transaction ID.

* A Database Summary report, showing database usage summarized by database.

The information in each report varies depending on the type of DBMS, but typically
includes elapsed times and counts for each of the methods that transactions use to
access a database, such as read, write, add, update, and delete.

To request one or more of these reports, enter line action **S** against the
OMEGAMON Subsystem Report on the Report Set panel. If reports of this type
have been previously specified, the list of OMEGAMON reports is displayed.
Otherwise, the OMEGAMON panel is displayed for you to define your first report of
this type.

OMEGAMON reports

```
   File  Filter  Edit  Systems  Options  Help
 -------------------------------------------------------------------------------
                       SAMPLE - OMEGAMON Reports                    Row 1 from 1
 Command ===> _____ Scroll ===> ____

        ---- System Selection -----           Selection
 /  Exc  APPLID +  Image +  Group +   Output    Criteria
 _       _____ _____ _____   OMEG0001    NO
 ******************************** End of list ********************************
```

Figure 124. OMEGAMON Reports

This panel displays the list of OMEGAMON reports in this Report Set. You can
select (edit), delete, or include/exclude any report, insert new ones, or rearrange
them (move/copy).

The options are the same as those for the Performance List Reports panel, except
there is no Report Form. See "Performance List report" on page 188.

The line actions are the same as on similar Reports list panels. See page 190.

Enter line action **S** to select a report in the list.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                       SAMPLE - OMEGAMON Report
 Command ===> _____

 CICS System Selection:                    Report Output:
  APPLID . . _____   +                    DDname . . . . . . . . . OMEG0001
  Image  . . _____   +                    Print Lines per Page . . ___  (1-255)
  Group  . . _____   +

 Reports Required:                          Summary Options:
  /  List                                    /  Average     _  Total
  /  Summary                                 _  Minimum     /  Maximum
     /  By Transaction                       _  Deviation
     /  By Database                          _  Peak . .  90_  (50-100%)

 Statistics to include:                     DBMS Selection:
  /  Total DBMS activity                     /  Adabas       /  Supra
  /  Individual Database                     /  CA-Datacom /  CA-IDMS

 Report Format:
  Title  . . _____
             _____

 Selection Criteria:
  _  Performance

  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 125. OMEGAMON Report

Use this panel to specify report options and record selection criteria for the
OMEGAMON reports. The only mandatory option is the Report Output DDname.
You can let the other options default.

The options are:

CICS System Selection

Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **OMEGnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Print Lines per Page

The maximum number of lines, including headings, to print on each page of the report. Valid values are from 1 to 255. The default is **60**.

The global value applies to all reports. If a value is specified on this report panel, the report value takes precedence over the global for this report only.

CICS PA JCL generation translates this field to the `LINECount(nnn)` operand.

Reports Required

Enter **/** to select the reports you want produced:

List Requests the OMEGAMON List report. This option generates the `LIST` operand.

Summary

Requests the OMEGAMON Summary report. This option generates the `SUMMARY` operand.

There are two types of Summary report:

By Transaction

Requests the Transaction Summary report, which groups transaction data into sections for each transaction ID. Within each section, the report shows the transaction data for each database accessed by that transaction ID, followed by total figures for that transaction ID across all databases.

This option generates the `SUMMARY(TRAN)` operand.

By Database

Requests the Database Summary report, which groups transaction data into sections for each database. Within each section, the report shows the transaction data for each transaction ID that has accessed that database, followed by total figures for that database for all transaction IDs.

This option generates the `SUMMARY(DATABASE)` operand.

If you select neither List nor Summary, then the generated command will contain neither the `LIST` operand nor the `SUMMARY` operand, and so the command will follow its default behavior, which is to produce the List report and both types of Summary report.

Summary Options

The statistical functions that the Database Summary and Transaction Summary reports use to summarize transaction data. The options are: average, total, minimum, maximum, standard deviation, and peak percentile. Each option that you select produces additional rows in the reports, with the function name as the row heading.

Statistics to include

Each OMEGAMON (SMF 112) record contains database usage details for a single transaction. A transaction may use one database, or it may use multiple databases from different types of DBMS. For each type of DBMS used by the transaction, the record contains a "totals" segment. For each database used by the transaction, the record contains a "detail" segment. This option specifies whether you want the report to include information from totals segments, details segments, or both:

Total DBMS activity

Includes information from totals segments. This option generates the `PRINT(TOTALS)` operand.

Individual Database

Includes information from detail segments. This option generates the `PRINT(DB)` operand.

DBMS Selection

The types of DBMS for which you want to produce reports.

Title Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

Performance Selection Criteria
You can specify Selection Criteria to filter the OMEGAMON (SMF 112) records on time period and field values to restrict reporting to the data that is of interest to you.

CICS PA checks only the following Performance Selection Criteria fields when filtering OMEGAMON records:

APPLID CICS APPLID
NETUOWPX Originating System VTAM network name
UOWID Unit of work ID
START Task start time (see Note below)
TRAN CICS transaction ID
FILENAME Database (or file) name

All other fields are ignored.

Note: Report Interval-based selection for OMEGAMON records is limited to the Attach (START) time; the STOP and ACTIVE options are ignored.

Line Actions: Valid line actions are:

/ Display the menu of line actions.

S Select to display the subpanel where Selection Criteria can be specified for this report. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A Activate the Selection Criteria so they will be generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

D Deactivate the Selection Criteria. Any you may have specified here will not be used.

System reports

The System reports are produced from MVS system data stored in SMF files. Only the System Logger report is in this category.

System Logger report

The System Logger report processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems.

You can request two reports:

1. **System Logger List.** This report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval.
2. **System Logger Summary.** This report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time.

These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems.

To request a report, enter line action **S** against the **System Logger** System Report on the Report Set panel. If reports of this type have been previously specified, the list of System Logger Reports is displayed. Otherwise, the System Logger Report panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
  -------------------------------------------------------------------------------
                      SAMPLE - System Logger Reports            Row 1 from 1
  Command ===> _____  Scroll ===> ____

        ---- System Selection -----              Selection
  /  Exc  Logger +  Image +  Group +   Output    Criteria
  _       CICSP001  MVS1____ _____   LOGR0001    NO
  ******************************** End of list ********************************
```

Figure 126. System Logger Reports

This panel displays the list of System Logger Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options are:

System Selection

System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

• A System Logger.

- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the `INput(SMFIN001,SMFIN002,SMFIN003,...)` operand and corresponding `//SMFINnnn DD` statements.

Output

CICS PA provides a default **Report Output DDname** in the format **LOGRnnnn** where nnnn is **0001-9999.**

The line actions are the same as on similar Reports list panels. See page 190.

To display the System Logger Report panel, enter line action **S** against the **System Logger** Performance Report on the Report Set panel, then if the list of previously specified reports is displayed, enter line action **S** against a particular report in the list.

```
   File  Systems  Options  Help
  -------------------------------------------------------------------------------
                         SAMPLE - System Logger Report
  Command ===> _____

  System Selection:                        Report Output:
   Logger . . CICSP001  +                    DDname . . . . . . . . . LOGR0001
   Image  . . MVS1____  +
   Group  . . _____  +

  Reports Required:                        Ordering Options:
  _  List                                   1  1. Sort by Logstream Name
     _  Include ALTER records                  2. Sort by Structure Name
     _  Sort by Time
  /  Summary                                SMF Options:
     Interval  . . . ____  (hh:mm)           Recording Interval . . __  (mins)

  Report Format:
   Title  . . _____
              _____


  Selection Criteria:
  _  Logger
     Logstream Name . . . _____
     Structure Name . . . _____
```

Figure 127. System Logger Report

Use this panel to specify report options for the System Logger report. The report format is fixed. The only mandatory options are the DDname for the report output and the Sort order. You can let the other options default. Note that you cannot control the number of print lines per page for the System Logger Report. In addition to filtering by Logstream or Structure name or both, you can also filter records from processing by specifying selection criteria.

System Logger report

The options are:

System Selection

System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A System Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the `INput(SMFIN001,SMFIN002,SMFIN003,...)` operand and corresponding `//SMFINnnn DD` statements.

Report Output DDname

The DDname for the report output which CICS PA uses when generating the JCL to run the Report Set. The DDname is mandatory and should be unique to separate the output of multiple reports.

CICS PA assigns a default DDname **LOGRnnnn** where nnnn is a sequential number **0001-9999** to ensure each report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Reports Required

Enter **/** to select the reports you want produced.

- Select **List** to request the System Logger List report, a list of all Logger interval records in the SMF File. This selection generates the `LIST` operand.

  You can also select **Include ALTER records** to include Structure Alter events in the report. These apply to Structures, not individual Logstreams, and are reported with a Logstream name of `*ALTER*`. This selection generates the `LIST(ALTER)` operand.

  By default, the List report entries are printed in Logstream or Structure name sequence, depending on the Report Option selected. However, by selecting the **Sort by Time** option, the entries are printed in Logstream or Structure name sequence within each Interval expiry period. This selection generates the `LIST(TIMESEQ)` operand.

- Select **Summary** to request the System Logger Logstream Summary and Structure Summary reports. (A summary of ALTER activity is not included.) This selection generates the `SUMMARY` operand.

  The default report is the Summary.

  Summary Interval

  To present a single summary of records for the entire reporting period, leave this field blank (this is the default). To summarize

records at intervals within the reporting period, enter a multiple of the SMF reporting interval, from 00:01 to 23:59. For example, if the SMF reporting interval was 5 minutes at the time that the logger records were written, then you can generate a System Logger Summary report that summarizes the logger records at any multiple of 5 minutes: 05:00, 10:00, 15:00 etc.

If you specify a Summary Interval, then ensure that the value you specify is an exact multiple of the SMF reporting interval. Otherwise, each of the summaries in the report may not be calculated from the same number of records.

This option appends a `SUMMARYINTERVAL(hh:mm)` suboperand to the `SUMMARY` operand.

Ordering Options

The sort sequence for the System Logger List and Summary reports.

Select option **1** to sort by Logstream name, MVS ID, Structure name, then time stamp. This is the default. This selection generates a `SORT(LOGSTREAMNAME)` operand.

Select option **2** to sort by Structure name, Logstream name, MVS ID, then time stamp. This selection generates a `SORT(STRUCTURENAME)` operand.

SMF Options: Recording Interval

The SMF global recording interval as specified in the INTVAL parameter of the SMFPRMnn PARMLIB member.

Specify an interval from 1 to 60 minutes. If not specified, CICS PA uses the recording interval in effect on the reporting system. The interval value is used by CICS PA for rate per second calculations in the System Logger Summary reports. If the interval used by CICS PA does not match the data, the total interval and rate calculations will be incorrect.

This option generates the `INTERVAL(minutes)` operand.

Selection Criteria

Optionally, specify the **Logstream Name** and **Structure Name** patterns to be reported. Masking characters **%** and ***** are allowed. Examples of possible patterns are:

TEST.DFHLOG	which must match exactly
PROD.*	which can match PROD.DFHLOG
PROD.MVSA%	which can match PROD.MVSA1, but not PROD.MVSA1LOG

These options generate the `LOGSTREAM('name.or.pattern')` and `STRUCTURE('name.or.pattern')` operands.

To specify Selection Criteria to filter the System Logger records on time period and other field values, enter **S** next to **Logger**.

Line Actions: Valid line actions are:

/　　Display the menu of line actions.

S　　Select to display the subpanel where Selection Criteria for this extract can be specified. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A　　Activate the Selection Criteria so they will be generated for this extract when the Report Set is submitted. Selection Criteria can

| only be activated if one or more Select Statements are specified
| and not all are excluded. An asterisk ***** indicates they are active.

| **D** Deactivate the Selection Criteria. Any you have specified here will
| not be used.

| CICS PA JCL generation translates Selection Criteria to the `SELECT(LOGGER`
| operand.

Title Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

Select a System (Logger)

To report on a particular system, you can select one from a list of available systems by pressing **Prompt** (F4) from the **Logger** field in System Selection. Only the systems of that type are displayed. See Figure 128 for an example showing a list of System Loggers.

Enter a **/** or **S** line action (or point-and-shoot) to select a system from the list to insert in your System Selection.

```
                           Systems                       Row 1 to 1 of 1
 Command ===> _____ Scroll ===> PAGE

 Select a System then press Enter.

    System    Image    Files  Description
 .  CICSP001  MVS1      Yes    System Log for CICSPLOG/MVS1_____
 ******************************** End of list ****************************
```

Figure 128. Select a System (Logger)

Performance Graph reports

The Performance Graph reports process CMF performance class data to produce graph-style reports showing response times (average, maximum) and transaction counts by time interval.

Transaction Rate Graph report

The Transaction Rate Graph report helps you understand other graphs and reports by showing the number of transactions on which the reported data is based. It is also useful in understanding the rate at which the CICS system is running or is able to run. It is useful as a daily indicator of system activity, and helps you understand other graphs and reports by showing the number of transactions on which the reported data is based.

To request the report, enter line action **S** against the **Transaction Rate** Performance Graph on the Report Set panel. If reports of this type have been previously specified, the list of Transaction Rate Graphs is displayed. Otherwise, the Transaction Rate Graph panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------
                    SAMPLE - Transaction Rate Graphs        Row 1 from 4
 Command ===> _____    Scroll ===> ____

       ---- System Selection -----              Selection
 /  Exc  APPLID +  Image +  Group +   Output    Criteria
 _       CICSP001  _____  _____  GRTE0001    YES
 _       DEVT____  MVS1____  _____  GRTE0002    NO
 _       CICST001  _____  _____  GRTE0003    YES
 _   *   _____  _____  RSYSGRP1  GRTE0004    NO
 ******************************* End of list *********************************
```

Figure 129. Transaction Rate Graphs

This panel displays the list of Transaction Rate Graph reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **GRTEnnnn** where nnnn is **0001-9999.**

To display the Transaction Rate Graph panel, enter line action **S** against the **Transaction Rate** Performance Graph Report on the Report Set panel, then if the list of previously specified graph reports is displayed, enter line action **S** against a particular report in the list.

Transaction Rate Graph report

```
   File  Systems  Options  Help
  ------------------------------------------------------------------------------
                          SAMPLE - Transaction Rate Graph
  Command ===> _____

  System Selection:                          Report Output:
   APPLID . . CICSP001  +                       DDname . . . . . . . . . GRTE0001
   Image  . . _____   +                      Print Lines per Page . . ___  (1-255)
   Group  . . _____   +

  Graph Options:
   Time Interval  . . . . . . . . . . . 00:05:00  (hh:mm:ss)
   Average Response Time  . . . . . . . _____      (seconds)
   Number of Transactions Completed . . _____

  Report Format:
   Title  . . _____
              _____


  Selection Criteria:
   _   Performance  *


   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 130. Transaction Rate Graph

Use this panel to specify report options and record selection criteria for the
Transaction Rate Graph report. The report format is fixed. The only mandatory
option is the DDname for the report output (the CICS PA default is **GRTEnnnn**).
You can let the other options default.

The report options are the same as those for the Performance List Report (see
"Performance List report" on page 188), except there is no Report Form and there
are additional options for the attributes of the graphs:

Time Interval

> The Transaction Rate Graph Report produces two graphs: average
> response time and number of transactions completed in each interval.
> Specify the time interval (in minutes) for the scale of the vertical axis of
> both graphs.
>
> Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours).
> The default is 00:05:00 (5 minutes).
>
> A time interval of less than one hour must fit evenly into the hour. CICS PA
> will round it down to the nearest interval that aligns to the hour. For
> example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval
> report lines for each hour of data.
>
> A time interval of more than one hour must fit evenly into the day. CICS PA
> will round it down to the nearest interval that aligns to the day. For example,
> 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report
> lines for each day of data.
>
> Minutes take precedence for an abbreviated entry. For example:
> **1**   becomes 00:01:00
> **1.1**   becomes 00:01:00 (rounded down from 00:01:01)
> **1.1.1**   becomes 01:00:00 (rounded down from 01:01:01)
>
> This option generates the `INTERVAL(hh:mm:ss)` operand.

Average Response Time (seconds)

This applies to the graph of average response time (horizontal axis) in each time interval (vertical axis). Specify the high end (in seconds) of the range of values for the horizontal axis. This option generates the `RANGE1(seconds)` operand.

Number of Transactions Completed

This applies to the graph of the number of transactions completed (horizontal axis) in each time interval (vertical axis). Specify the high end of the range of values for the horizontal axis. This option generates the `RANGE2(number)` operand.

Transaction Response Time Graph report

The Transaction Response Time Graph Report shows the service level (response time) for completed transactions. It can be requested daily to determine, over a period of time, the level of service (response time).

To request the report, enter line action **S** against the **Transaction Response Time** Performance Graph on the Report Set panel. If graph reports of this type have been previously specified, the list of Transaction Response Time Graphs is displayed. Otherwise, the Transaction Response Time Graph panel is displayed for you to define your first report of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                 SAMPLE - Transaction Response Time Graphs      Row 1 from 4
  Command ===> _____  Scroll ===> ____

        ---- System Selection -----              Selection
  /  Exc  APPLID +  Image +  Group +   Output    Criteria
  _       CICSP001  _____  _____  GRSP0001    YES
  _       DEVT____  MVS1____ _____  GRSP0002    NO
  _       CICST001  _____  _____  GRSP0003    YES
  _    *  _____  _____ RSYSGRP1  GRSP0004    NO
  ******************************* End of list ********************************
```

Figure 131. Transaction Response Time Graphs

This panel displays the list of Transaction Response Time Graph Reports in this Report Set. You can select (edit), delete, or include/exclude any report, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as those for the Performance List Reports panel, except there is no Report Form. See "Performance List report" on page 188.

CICS PA provides a default **Report Output DDname** in the format **GRSPnnnn** where nnnn is **0001-9999.**

To display the Transaction Response Time Graph panel, enter line action **S** against the **Transaction Response Time** Performance Graph Report on the Report Set panel, then if the list of previously specified graph reports is displayed, enter line action **S** against a particular report in the list.

```
 ╭─────────────────────────────────────────────────────────────────────────╮
 │   File  Systems  Options  Help                                            │
 │  ------------------------------------------------------------------------- │
 │                    SAMPLE - Transaction Response Time Graph               │
 │  Command ===> _____  │
 │                                                                           │
 │  System Selection:                        Report Output:                  │
 │   APPLID . . CICSP001   +                    DDname . . . . . . . . . GRSP0001 │
 │   Image  . . _____    +                    Print Lines per Page . . ___  (1-255) │
 │   Group  . . _____    +                                                 │
 │                                                                           │
 │  Graph Options:                                                           │
 │   Time Interval . . . . . . 00:05:00  (hh:mm:ss)                          │
 │   Average Response Time . . _____     (seconds)                           │
 │   Maximum Response Time . . _____     (seconds)                           │
 │                                                                           │
 │  Report Format:                                                           │
 │   Title  . . _____      │
 │                                                                           │
 │              _____      │
 │                                                                           │
 │  Selection Criteria:                                                      │
 │   _   Performance  *                                                       │
 │                                                                           │
 │   F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions │
 │  F12=Cancel                                                               │
 ╰─────────────────────────────────────────────────────────────────────────╯
```

Figure 132. Transaction Response Time Graph

Use this panel to specify report options and record selection criteria for the Transaction Response Time Graph. The report format is fixed. The only mandatory option is the DDname for the report output (the CICS PA default is **GRSPnnnn**). You can let the other options default.

The report options are the same as those for the "Performance List report" on page 188, except there is no Report Form and there are additional options for the attributes of the graphs:

Time Interval

> The Transaction Response Time Graph report produces two graphs: average response time and maximum response time in each interval. Specify the time interval (in minutes) for the scale of the vertical axis of both graphs.

> Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours). The default is 00:05:00 (5 minutes).

> A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

> A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

> Minutes take precedence for an abbreviated entry. For example:
> **1**   becomes 00:01:00
> **1.1**   becomes 00:01:00 (rounded down from 00:01:01)
> **1.1.1**   becomes 01:00:00 (rounded down from 01:01:01)

> This option generates the INTERVAL(hh:mm:ss) operand.

Transaction Response Time Graph report

Average Response Time (Seconds)

This applies to the graph of average response time (horizontal axis) in each time interval (vertical axis). Specify the high end (in seconds) of the range of values for the horizontal axis. This option generates the `RANGE1(seconds)` operand.

Maximum Response Time (Seconds)

This applies to the graph of maximum response time (horizontal axis) in each time interval (vertical axis). Specify the high end (in seconds) of the range of values for the horizontal axis. This option generates the `RANGE2(seconds)` operand.

Extracts

The extracts process SMF data to produce extract data sets suitable for further manipulation and analysis. For example:

- Analyze the Cross-System Work Extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance Export or System Logger Extract data using external programs such as DB2, or PC tools such as Lotus 1-2-3.
- Specify the Record Selection Extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.

Cross-System Work extract

The Cross-System Work Extract is created for the purpose of correlating performance class data from one or more regions. The extract records are based on a single network unit-of-work, as opposed to a single transaction. All performance class records contained in a single network unit-of-work are added, or combined. These records are then written to the extract data set as one record which represents all the work done on behalf of the network unit-of-work. A Recap report containing processing statistics is always printed at the end of extract processing.

Since the extract records are in the same format as the CMF performance class records, the extract data set can be used as input to CICS PA for further processing; for example, to run the Performance List, Performance List Extended, Performance Summary, and Performance Totals Reports.

To request the extract, enter line action **S** against the **Cross-System Work** Extract on the Report Set panel. If extracts of this type have been previously specified, the list of Cross-System Work Extracts is displayed. Otherwise, the Cross-System Work Extract panel is displayed for you to define your first extract of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                  SAMPLE - Cross-System Work Extracts        Row 1 from 2
 Command ===> _____ Scroll ===> ____

        ---- System Selection -----              Selection
 /  Exc  APPLID +  Image +  Group +     Recap     Criteria
 _                           MROPROD_   CROX0001    NO
        Output Data Set . .  'MROPROD.CROSSWK'_____
 ------------------------------------------------------------------------------
 _                           AORPROD_   CROX0002    NO
        Output Data Set . .  'AORPROD.CROSSWK'_____
 ------------------------------------------------------------------------------
 ****************************** End of list ********************************
```

Figure 133. Cross-System Work Extracts

This panel displays the list of Cross-System Work Extracts in this Report Set. You can edit, select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options are:

Exc The report or extract is marked by an asterisk * if it is to be **Excluded** from reporting. Enter the line action **X** to reverse the Exclude status.

Cross-System Work extract

System Selection

Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Recap The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **CROXnnnn** where nnnn is a sequential number **0001-9999** to ensure each Recap report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Selection Criteria Indicator

This indicator is generated by CICS PA.

YES indicates that Selection Criteria are activated for this extract.

NO indicates that Selection Criteria are not activated for this extract. This is because no Selection Criteria have been specified, all Select Statements are Excluded, or the Selection Criteria have been deactivated.

Output Data Set

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

When generating the JCL, CICS PA assigns a default DDname **CPAOXSnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply.

Line Actions: The line actions that can be performed against the list of extracts are:

/	Display the menu of line actions.
S	Select this row to review or modify.
I	Insert a row.
R	Repeat this row.
C	Copy this row.
M	Move this row.
A	Move/Copy after this row.
B	Move/Copy before this row.
D	Delete this row.
X	Reverse the Exclude status.

To display the Cross-System Work Extract panel, enter line action **S** against the **Cross-System Work** Performance Extract on the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular extract in the list.

```
   File  Systems  Options  Help
  ---------------------------------------------------------------------------
                   SAMPLE - Cross-System Work Extract
  Command ===> _____

  System Selection:                       Extract Recap:
   APPLID . . _____   +                    DDname  . . . CROX0001
   Image  . . _____   +
   Group  . . MROPROD_   +

  Output Data Set . . 'MROPROD.CROSSWK'_____
  Disposition  . . . 1  1. OLD      Record Compression  . . 1  1. No
                        2. MOD                                 2. Yes

  Processing Options:                       Record Formatting Options:
  1  1. UOWs with more than one record         APPLID . . MULTIPLE
     2. UOWs with a single record              MVS ID . . CICS
     3. All UOWs

   Selection Criteria:                       Additional User Fields:
   _  Performance (Record pre-processing)      _  User Fields  *
   _  Performance (Unit-of-work post-processing)

   F1=Help     F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 134. Cross-System Work Extract

Cross-System Work extract

Use this panel to specify extract options and record selection criteria for the Cross-System Work Extract. The mandatory options are the name and disposition of the Extract Data Set, the DDname for the Recap report, and the network unit-of-work (UOW) Processing Option. You can let the other options default.

System Selection

The APPLID(s) and SMF data files that apply to this extract.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:

- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Optionally, user fields can be appended to the Cross-System Work Extract. The APPLID is used by CICS PA to initially populate the list of user fields which you can then modify using the **User Fields** option.

Output Data Set

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified in Reporting Allocation Settings are used when generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set. Alternatively, you can use a GDG to create a new data set each time the extract is run.

When generating the JCL, CICS PA assigns a default DDname **CPAOXSnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply. For example, if the TSO option **PROFILE PREFIX** is in effect, the prefix will be appended as the high-level qualifier unless the data set name is enclosed in quotes.

Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

OLD   Overwrites the data set contents with the new extract data.
MOD   Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

Record Compression

Select whether you want the SMF records in the extract file to be in compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you select Yes, CICS PA writes compressed CICS SMF records, regardless of the CICS release level that created the input records. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed CICS SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

Selecting this option generates the `COMPRESS` operand.

Processing Options:

Select option **1 - UOWs with more than one record** to report only the transaction performance records whose network unit-of-work spans multiple CMF records. This is the default. This selection generates the `PRINTMultiple` operand.

Select option **2 - UOWs with a single record** to report only the transaction performance records consisting of network units-of-work that include only a single CMF record. This selection generates the `PRINTSingle,NOPRINTMultiple` operand.

Select option **3 - All UOWs** to report all the transaction performance records. This selection generates the `PRINTSingle,PRINTMultiple` operand.

Record Formatting Options:

The APPLID and MVS Image that CICS PA is to write in all extract records.

CICS PA JCL generation translates the settings to the `SYSID(applid,mvsimage)` operand.

The extract records contain composite data from multiple CICS systems. For CICS PA to later process the extract file as input, you must define the file and this APPLID/MVS Image combination in System Definitions.

APPLID

The APPLID that CICS PA is to write in all extract records. Specify up to eight alphanumeric (A-Z,0-9) or special (@,#,$) characters. The default is **MULTIPLE.**

MVS ID

The MVS Image that CICS PA is to write in all extract records. Specify up to four alphanumeric (A-Z,0-9) or special (@,#,$) characters, with the first alphabetic or special. The default is **CICS.**

Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict reporting to the data that is of interest to you. For the Cross-System Work extract, there are two levels of filtering available:

- **Record pre-processing.** CICS PA JCL generation translates Selection Criteria to the `SELECT(PERFORMANCE` operand.

- **Unit-of-work post-processing.** There is an additional filtering capability available. This generates the `SELUOW` operand to provide filtering across tasks in multi-task UOWs. If one task in a UOW matches the SELUOW selection criteria, then the entire UOW is selected. For more information, see "CROSSsystem - Cross-System Work report and extract" on page 402.

Line Actions: Valid line actions are:

/   Display the menu of line actions.

S   Select to display the subpanel where Selection Criteria can be specified for this report. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A   Activate the Selection Criteria so they will be generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here will not be used.

Additional User Fields

User fields can be specified for inclusion in the Cross-System Work Extract records. CICS PA uses the specified APPLID to locate the MCT and initially populate the list of user fields. See Figure 135 on page 257.

Line Actions: The valid line actions are:

/   Display the menu of line actions.

S   Select to display the subpanel where user fields are specified. When selected for the first time, an APPLID must be specified so the appropriate user fields can be found from the MCT.

A   Activate the User Fields so they will be included for this extract when the Report Set is submitted. User Fields can only be activated if at least one has been specified and not all are excluded. An asterisk ***** indicates they are active.

D   Deactivate the User Fields. Although you may have specified user fields for this extract, they will not be included when the Report Set is submitted.

User fields for the Cross-System Work extract

To display the User Fields subpanel, enter line action **S** against User Fields on the
Cross-System Work Extract panel.

```
   File  Filter  Edit  Options  Help
   -----------------------------------------------------------
                       User Fields              Row 1 from 7
  Command ===> _____    Scroll ===> PAGE

                                      Char    Maximum
  /   Exc  Dictionary Definition      Length  Length
  _        CLOCK1    CPAUSR1 S001      ___        8
  _     *  CLOCK2    CPAUSR1 S002      ___        8
  _        CLOCK3    CPAUSR1 S003      ___        8
  _        COUNT5    CPAUSR2 A005      ___        4
  _     *  RMIDATA   DBCTL   C001      256      256
  _        FIELD1    CPAUSR1 C001      _12       12
  _        FIELD1    CPAUSR2 C001      _12       12
  ******************************** End of list *************

```

Figure 135. Cross-System Work Extract: User Fields

This panel displays the user fields to be included in the Cross-System Work Extract
record. The list of fields is initially populated by CICS PA using the specified
APPLID to locate the MCT. You can change the Include/Exclude status of the fields,
or delete unwanted fields, but once deleted they cannot be reinstated. You can also
modify the length of character fields.

The options are:

Exclude Indicator

An asterisk ***** in this field indicates that the row is excluded and will not be
included in extract processing.

Use line action **X** to reverse the Exclude indicator.

Dictionary Definition

The description of the user field in the format *informalname owner xnnn*
where:

- *informalname* is the CMF informal name for the field. This is placed in
  the dictionary record of the Cross-System Work Extract and can be used
  in subsequent reporting, for example, as the column heading.
- *owner* is the CICS component that 'owns' the field.
- *x* indicates the data type:
    A - 32- or 64-bit count
    C - character string
    S - clock (both Time and Count parts are extracted)
- *nnn* is the field identifier. For Clock or Count fields, this identifies which of
  the 256 clocks and 256 counts are extracted. For character fields, it will
  always be 001.

Character Field Length

The length of the field in the extract record, for character user fields only. If
this length is shorter than the maximum length of the field, the value will be
truncated in the extract. Values longer than the field length are not allowed.

Maximum Length

The original length of the user field. For clock or count fields, this is the

length of the field in the extract record. For character fields, this length can be overridden by changing the **Char Length** value.

Line Actions: The valid line actions on this panel are:

/ Display the menu of line actions

D Delete this field (Deleted fields cannot be reinstated)

X Reverse this row's Exclude status (Exclude/Include)

Exported Performance Data extract

An Exported Performance Data Extract is created as a delimited text file for the purpose of importing the CMF performance class data into PC spreadsheet or database tools for further detailed analysis and reporting. Once transferred to a workstation file the exported performance class data is available to PC applications such as Lotus 1-2-3.

A Recap report containing processing statistics is always printed at the end of extract processing.

To request the export, enter line action **S** against the **Export** Extract on the Report Set panel. If exports have been previously specified, the list of Exports is displayed. Otherwise, the Export panel is displayed for you to define your first one.

```
   File  Filter  Edit  Systems  Options  Help
  -------------------------------------------------------------------------------
                            SAMPLE - Exports                     Row 1 from 2
   Command ===> _____ Scroll ===> ____


        ---- System Selection -----                     Selection
  / Exc APPLID +  Image +  Group +     Recap      Form +    Criteria
        CICSP001  _____  _____     EXPT0001   _____     YES
  _     Output Data Set . .   'CICSP001.EXPORT'_____
  -------------------------------------------------------------------------------
  _     DEVT____  MVS1____ _____     EXPT0002   _____      NO
        Output Data Set . .   'DEVTMVS1.EXPORT'_____
  -------------------------------------------------------------------------------
  ******************************* End of list *******************************
```

Figure 136. Exports

This panel displays the list of Exported Performance Data Extracts in this Report Set. You can select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as on the Cross-System Work Extracts panel (see "Cross-System Work extract" on page 251), except for the addition of a Report Form:

Form The name of a Report Form to be used to tailor the type of extract and the format of the extract records. The Report Form can be a LIST, LISTX, or SUMMARY Form:

- LIST and LISTX Forms produce an exported data file like the Performance List Report. There is no restriction on the number of fields. Note that in contrast to the report, LISTX does not produce a sorted extract. Specifying a Form of this type generates the **LIST** report operand.

- SUMMARY produces an exported data file equivalent to the Performance Summary report, sorting and summarizing on specified fields, but with no restriction on the number of fields. Specifying a Form of this type generates the **SUMMARY** report operand.
- If a Report Form is not specified, the default export is produced using the **EXPORT** report operand.

To select the name from a list of compatible Report Forms, position the cursor on the **Form** field and press **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the `LIST(FIELDS` or `SUMMARY(FIELDS` operand.

When generating the JCL, CICS PA assigns a default DDname **CPAOEXnn** where nn is a sequential number **01-99** to ensure uniqueness.

To display the Export panel, enter line action **S** against the **Export** Performance Extract on the Report Set panel, then if the list of previously specified exports is displayed, enter line action **S** against a particular export in the list.

```
   File  Systems  Options  Help
 ----------------------------------------------------------------------------
                           SAMPLE - Export
 Command ===> _____

 System Selection:                        Extract Recap:
  APPLID . . CICSP001  +                    DDname  . . . EXPT0001
  Image  . . _____   +
  Group  . . _____   +

 Output Data Set:
  Data Set Name  . . 'CICSP001.EXPORT'_____
  Disposition  . . . 1  1. OLD   2. MOD    (If cataloged)

 Extract Format:                          Enter "/" to select option
  Form . . . . _____   +               /  Include Field Labels
  Delimiter . . ;                         _  Numeric Fields in Float format

 Selection Criteria:                      Summary Processing Options:
  _  Performance  *                        Time Interval 00:01:00  (hh:mm:ss)

                                           /  Use External Sort


  F1=Help      F3=Exit      F4=Prompt   F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 137. Export

Use this panel to specify extract options and record selection criteria for the Exported Performance Data extract. The mandatory options are the name and disposition of the Extract data set and the DDname for the Recap report. You can let the other options default.

The Export record has a default format which includes all the Clock fields. Report Forms (LIST, LISTX, or SUMMARY) can be used to tailor the format and content of the records.

The options are:

Exported Performance Data extract

System Selection

Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:
- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:
- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Output Data Set Name

The name of the data set where the extract records are written. If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

When generating the JCL, CICS PA assigns a default DDname **CPAOEXnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply.

Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

OLD　　Overwrites the data set contents with the new extract data.

MOD   Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

Form   The name of a Report Form to be used to tailor the type of extract and the format of the extract records. The Report Form can be a LIST, LISTX, or SUMMARY Form:

- LIST and LISTX Forms produce an exported data file like the Performance List Report. There is no restriction on the number of fields. Note that in contrast to the report, LISTX does not produce a sorted extract. Specifying a Form of this type generates the `LIST` report operand.

- SUMMARY produces an exported data file equivalent to the Performance Summary report, sorting and summarizing on specified fields, but with no restriction on the number of fields. Specifying a Form of this type generates the `SUMMARY` report operand.

- If a Report Form is not specified, the default export is produced using the `EXPORT` report operand.

To select the name from a list of compatible Report Forms, position the cursor on the **Form** field and press **Prompt** (F4).

CICS PA JCL generation translates the Report Form specification into the `LIST(FIELDS` or `SUMMARY(FIELDS` operand.

Delimiter
The field delimiter used to separate each data field in the extract records. The default is a semicolon (**;**).

CICS PA JCL generation translates this to `DELIMIT('delimiter')`. Note that the value is enclosed in quotes in this operand.

Include Field Labels
Select (**/**) to include field labels as the first record written to the extract data set. This is the default. CICS PA JCL generation translates this to the `LABELS` operand.

Blank out the field if you do not want field labels written. CICS PA JCL generation translates this to the `NOLABELS` operand.

Numeric Fields in Float format
Select (**/**) to write numeric fields in the extract in S390 FLOAT format. This only applies to the List Export when the FIELDS operand is specified. CICS PA JCL generation translates this to the `FLOAT` operand.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

Time Interval
The time interval applies when you want to summarize transaction activity over time. It is used when you specify a SUMMARY Report Form which has

Exported Performance Data extract

one or both sort fields **START** or **STOP** included. When reporting, CICS PA accumulates the data for each interval in the report period and writes a report line for each.

Specify a value in the range **00:00:01** (1 second) to **24:00:00** (24 hours). The default is **00:01:00** (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

1	becomes 00:01:00
1.1	becomes 00:01:00 (rounded down from 00:01:01)
1.1.1	becomes 01:00:00 (rounded down from 01:01:01)

This option generates the `INTERVAL(hh:mm:ss)` operand.

Use External Sort

Select **/** to use an external sort utility to process Summary records. This is the default. It generates the **EXTERNAL(ddname)** operand. This provides the DDname of the work data set used by the external sort utility. CICS PA assigns an External Work File from a pool of External Work Files with default DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file.

An external sort should be used when processing large volumes of data.

If not selected, an internal sort is used.

Performance Selection Criteria

You can specify Selection Criteria to filter the CMF records on time period and field values to restrict the extract to the data that is of interest to you.

CICS PA JCL generation translates Selection Criteria to the `SELECT(PERFORMANCE` operand.

If you specify a Report Form that also has Selection Criteria specified, CICS PA JCL generation translates the Form's Selection Criteria to the `SELECT2(PERFORMANCE` operand. If both the report and the Form specify Selection Criteria, then a record must pass selection by both specifications to be included in the extract.

Line Actions: Valid line actions are:

/ Display the menu of line actions.

S Select to display the subpanel where Selection Criteria can be specified for this report. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A Activate the Selection Criteria so they will be generated for this report when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

> **D** Deactivate the Selection Criteria. Any you may have specified here will not be used.

Record Selection extract

The Record Selection Extract is a facility that allows you to create a small extract file containing only the records of interest to you. The extract file can then be used as input to CICS PA, allowing more efficient reporting.

The Record Selection Extract filters large SMF Files, writing only SMF records that match the following criteria:
- CICS, DB2, MQ, and Logger System Selection
- Selected record types, being any of:
  - Performance
  - Exception
  - Resource
  - Statistics
  - OMEGAMON
  - DB2
  - WebSphere MQ
  - System Logger
- Performance Selection Criteria
- Exception Selection Criteria
- Logger Selection Criteria
- Run-time SMF reporting interval

A Recap report containing processing statistics is always printed at the end of extract processing.

To request the extract, enter line action **S** against the **Record Selection** Extract on the Report Set panel. If extracts of this type have been previously specified, the list of Record Selection Extracts is displayed. Otherwise, the Record Selection Extract panel is displayed for you to define your first one.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                 SAMPLE - Record Selection Extracts          Row 1 from 2
   Command ===> _____ Scroll ===> ____

        ---- System Selection -----            ——— Selection Criteria ———
 /  Exc  APPLID +  Image +  Group +     Recap     Performance  Exception  Logger
 _       CICSP001 _____ _____     RSEL0001     NO           NO        NO
         Output Data Set . .  'CICSP001.DB2P.RECSEL'_____
 ------------------------------------------------------------------------------
 _       DEVT____ MVS1____ _____     RSEL0002     YES          NO        NO
         Output Data Set . .  'DEVTMVS1.RECSEL'_____
 ------------------------------------------------------------------------------
 ****************************** End of list ******************************
```

Figure 138. Record Selection Extracts

This panel displays the list of Record Selection Extracts in this Report Set. You can select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as on the Cross-System Work Extracts panel. See "Cross-System Work extract" on page 251.

Record Selection extract

When generating the JCL, CICS PA assigns a default DDname **CPAORSnn** where nn is a sequential number **01-99** to ensure uniqueness.

To display the Record Selection Extract panel, enter line action **S** against the **Record Selection** Performance Extract in the Report Set panel, then if the list of previously specified extracts is displayed, enter line action **S** against a particular one in the list.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                    SAMPLE - Record Selection Extract
  Command ===> _____

  System Selection:
   CICS APPLID . . CICSP001  +  Image . . _____   + Group . . _____  +
   DB2 SSID  . . . ___   +      Image . . _____   + Group . . _____  +
   MQ SSID   . . . ___   +      Image . . _____   + Group . . _____  +
   Logger  . . . . _____  +  Image . . _____   + Group . . _____  +

  Required CICS Record Types:              Extract Recap:
   /  Performance      _  Exception           DDname  . . . RSEL0001
   _  Resource         _  Statistics
   _  OMEGAMON         _  DB2
   _  WebSphere MQ     _  System Logger

  Output Data Set:
   Data Set Name  . . 'CICSP001.DB2P.RECSEL'_____
   Disposition  . . . 1  1. OLD      Record Compression  . . 1  1. No
                         2. MOD                                 2. Yes

  Selection Criteria:
   _  Performance
   _  Exception


   F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 139. Record Selection Extract

Use this panel to specify extract options and record selection criteria for the Record Selection extract. The mandatory options are the name and disposition of the Extract Data Set and the DDname for the Recap report. You can let the other options default, although it is recommended that you specify Selection Criteria to reduce the volume of data.

The options are:

System Selection

CICS APPLID

Identifies the CICS APPLID(s) whose data you want to select for processing.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the

Prompt key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:
- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:
- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

DB2 SSID

The DB2 Subsystems and SMF data files you want processed. The Record Selection extract processes DB2 101 accounting records only if they are part of a CICS thread, and will only process these if you specify the DB2 SSID(s). Any combination of SSID, Image, or Group can be specified but must be defined in System Definitions. You can type them in directly or select from a list of available SSIDs by using **Prompt** (F4). To link directly to System Definitions, select **Systems** in the action bar.

Specify either:
- A DB2 SSID.
- An SSID for a particular Image. This identifies the MVS Image where your DB2 Subsystem executes.
- An Image. CICS PA will report on all DB2 SSIDs running on this Image using the SMF files defined for the Image.
- An SSID and Image combination plus a Group. This is useful for uniquely identifying DB2 Subsystems when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all SSID and Image combinations in the Group to produce a single consolidated report.

Record Selection extract

CICS PA uses the DB2 System Selection in JCL generation to build the `SSID(ssid1,ssid2,ssid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

DB2 System Selection can also be specified as a global option. The report-level specification takes precedence over the global. When you submit your Report Set, you can also specify DB2 System Selection at that time and it takes precedence over the global for that run only.

MQ SSID

The WebSphere MQ Subsystems and SMF data files you want processed. The Record Selection extract processes MQ 116 accounting records only if they are part of a CICS thread, and will only process these if you specify the MQ SSID(s). Any combination of SSID, Image, or Group can be specified but must be defined in System Definitions. You can type them in directly or select from a list of available SSIDs by using **Prompt** (F4). To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- An MQ SSID.
- An SSID for a particular Image. This identifies the MVS Image where your MQ Subsystem executes.
- An Image. CICS PA will report on all MQ SSIDs running on this Image using the SMF files defined for the Image.
- An SSID and Image combination plus a Group. This is useful for uniquely identifying MQ Subsystems when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all SSID and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the MQ System Selection in JCL generation to build the `SSID(ssid1,ssid2,ssid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

MQ System Selection can also be specified as a global option. The report-level specification takes precedence over the global. When you submit your Report Set, you can also specify MQ System Selection at that time and it takes precedence over the global for that run only.

Logger

The MVS System Loggers and associated SMF data files that you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can type them in directly or use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:

- A System Logger.

- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful for uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all system and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the Logger System Selection in JCL generation to build the `INput(SMFIN001,SMFIN002,SMFIN003,...)` operand and corresponding `//SMFINnnn DD` statements. It also generates the `LOGGER` operand to request Logger records for the extract.

Logger System Selection can also be specified as a global option. The report-level specification takes precedence over the global. When you run your Report Set, you can also specify Logger System Selection at run time to override the global and optionally the report-level specification.

Required CICS Record Types

Enter **/** to select the combination of record types that you want included in the extract.

Note that APPLIDs, DB2 SSIDs, MQ SSIDs, and Logger data will be included in the extract according to your specified System Selection.

Extract Recap DDname

The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **RSELnnnn** where nnnn is a sequential number **0001-9999** to ensure each Recap report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Output Data Set

The name of the data set where the extract records are written. When specifying the data set name, standard TSO conventions apply.

If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

CICS PA generates the `DDNAME(ddname)` operand and assigns a default DDname **CPAORSnn** where nn is a sequential number **01-99** to ensure uniqueness.

Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

OLD Overwrites the data set contents with the new extract data.
MOD Appends the new extract data.

Record Selection extract

> You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

Record Compression

> Select whether you want the SMF records in the extract file to be in compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.
>
> If you select Yes, CICS PA writes compressed CICS SMF records, regardless of the CICS release level that created the input records. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed CICS SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.
>
> Selecting this option generates the `COMPRESS` operand.

Selection Criteria

> To filter data for Performance and Resource Class record selection, specify **Performance** Selection Criteria.
>
> To filter data for Exception Class record selection, specify **Exception** Selection Criteria.
>
> To filter data for System Logger record selection, specify any combination of **Logger** Selection Criteria, **Logstream Name**, and **Structure Name**.
>
> Selection Criteria are not applicable to Statistics records.
>
> *Line Actions:* Valid line actions are:
>
> **/**   Display the menu of line actions.
>
> **S**   Select to display the subpanel where Selection Criteria for this extract can be specified. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.
>
> **A**   Activate the Selection Criteria so they will be generated for this extract when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.
>
> **D**   Deactivate the Selection Criteria. Any you have specified here will not be used.

HDB Load

The HDB Load is a facility that loads SMF data into a Historical Database (HDB). This same facility is available from Primary Menu option 5 Historical Database. However, from Report Sets you have the advantages of:
*   Reports and HDB Load in the one job
*   Multiple load requests supported in the one job
*   One pass of the data

A Recap report containing processing statistics is always printed at the end of load processing.

To request HDB Load, enter line action **S** against **HDB Load** in the **Extracts** category on the Report Set panel. If HDB Loads have been previously specified in this Report Set, the list of them is displayed. Otherwise, the HDB Load panel is displayed for you to request your first one.

```
   File  Filter  Edit  Systems  Options  Help
  -----------------------------------------------------------------------------
                          SAMPLE - HDB Loads                        Row 1 from 1
  Command ===> _____ Scroll ===> ____

        ---- System Selection -----
  /  Exc  APPLID +  Image +  Group +     Recap       HDB +
  _       CICSP001  _____ _____     HDBL0001    LISTHDB_
  ******************************* Bottom of data ******************************
```

Figure 140. HDB Loads

This panel displays the list of HDB Load requests in this Report Set. You can select (edit), delete, or include/exclude any in the list, insert new ones, or rearrange them (move/copy).

The options and line actions are the same as on the Cross-System Work Extracts panel, except Selection Criteria and Output Data Set are not applicable here. See "Cross-System Work extract" on page 251.

The default DDname for the Recap report output is **HDBLnnnn** where nnnn is a sequential number **0001-9999** to ensure uniqueness.

The default DDname for the HDB Register is **CPAHDBRG.** Specify the name of the HDB to be loaded. Press **Prompt** (F4) to select from a list of HDBs in the current HDB Register.

To display the HDB Load panel, enter line action **S** to select from the list.

HDB Load

```
  File  Systems  Options  Help
 ------------------------------------------------------------------------------
                           SAMPLE - HDB Load
 Command ===> _____

 System Selection:                          Extract Recap:
  APPLID . . _____   +                     DDname  . . . HDBL0001
  Image  . . _____   +
  Group  . . _____   +

 Historical Database:
  HDB . . . . . . . #LIST01_  +
  HDB Register  . : CICSPA.V2R1.REGISTER

 DB2 Export Options:                        Table Load Options
 _   Load DB2 Table                         1  1. Resume    2. Replace

 Include Clock Field Components             Summary Options
 1  1. Time and Count                       _   Include Sums of Squares
    2. Time only
    3. Count only


  F1=Help      F3=Exit      F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F12=Cancel
```

Figure 141. HDB Load

Use this panel to specify the load options, including system selection, the name of the HDB in the current HDB Register, and the DDname for the Recap report.

Specify the systems that you want to analyze. The systems and files must be defined in System Definitions. You can link directly there by selecting Systems in the action bar. It is recommended that you specify your System Selection at run time, not within the Report Set. This will allow you to load data from any of your defined systems.

To run the load, enter the RUN command.

The options are:

System Selection

> **CICS APPLID**
>> Identifies the CICS APPLID(s) whose data you want to select for processing.
>>
>> You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.
>>
>> Specify one of the following:
>>
>> - A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.

- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:
- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

Extract Recap DDname
The DDname for the Recap report which prints at the end of load processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **HDBLnnnn** where nnnn is a sequential number **0001-9999** to ensure each Recap report has a unique DDname.

This option generates the `OUTPUT(ddname)` operand.

Historical Database
Specify the name of the HDB you want to load with SMF data. Press **Prompt** (F4) to select an HDB from the current HDB Register.

The current HDB Register is specified in option 5 **Historical Database** from the Primary Option Menu.

DB2 Export Options
To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL" on page 625. (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined. To define a DB2 table, see "Creating DDL to define a DB2 table" on page 637.

If you select the **Replace** Table Load option, but the HDB load fails, then the result will be an empty DB2 table.

System Logger extract

A System Logger Extract is created as a delimited text file for the purpose of importing System Logger data into PC spreadsheet or database tools for further detailed analysis and reporting. Once transferred to a workstation file the extracted System Logger data is available to PC applications such as Lotus 1-2-3.

A Recap report containing processing statistics is always printed at the end of extract processing.

System Logger extract

To request the extract, enter line action **S** against the **System Logger** Extract on the Report Set panel. If extracts of this type have been previously specified, the list of System Logger Extracts is displayed. Otherwise, the System Logger Extract panel is displayed for you to define your first extract of this type.

```
   File  Filter  Edit  Systems  Options  Help
 ------------------------------------------------------------------------------
                    SAMPLE - System Logger Extracts          Row 1 from 1
 Command ===> _____ Scroll ===> ____

        ---- System Selection -----            Selection
 /  Exc  Logger +  Image +  Group +   Output     Criteria
 _       CICSP001  MVS1____ _____   LOEX0001    NO

        Output Data Set . .  'CICSP001.EXTRACT'_____
 ******************************** End of list ********************************
```

Figure 142. System Logger Extracts

This panel displays the list of System Logger Extracts in this Report Set. You can select (edit), delete, or include/exclude any extract, insert new ones, or rearrange them (move/copy).

The options are:

System Selection
> System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.
>
> Specify either:
> * A System Logger.
> * A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
> * An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
> * A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
> * A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.
>
> CICS PA uses the System Selection in JCL generation to build the `INput(SMFIN001,SMFIN002,SMFIN003,...)` operand and corresponding `//SMFINnnn DD` statements.

Output
> CICS PA provides a default **Report Output DDname** in the format **LOEXnnnn** where nnnn is **0001-9999.**

The line actions are the same as on similar Reports list panels.

To display the System Logger Extract panel, enter line action **S** against the **System Logger** Extract on the Report Set panel, then if the list of previously specified

extracts is displayed, enter line action **S** against a particular extract in the list.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                      SAMPLE - System Logger Extract
  Command ===> _____

  System Selection:                        Report Output:
   Logger . . CICSP001  +                     DDname . . . . . . . . . LOEX0001
   Image  . . MVS1____  +
   Group  . . _____   +

  Output Data Set:
   Data Set Name  . . 'CICSP001.EXTRACT'_____
   Disposition  . . . 1  1. OLD   2. MOD   (If cataloged)

   Extract Format:                           Enter "/" to select option
   Form  . . . . _____   +                 /  Include Field Labels
   Delimiter . . ;                           _  Numeric Fields in Float format

  Selection Criteria:
   _  Logger
   Logstream Name . . . _____
   Structure Name . . . _____
```

Figure 143. System Logger Extract

Use this panel to specify extract options and record selection criteria for the System Logger extract. The mandatory options are the name and disposition of the Extract data set and the DDname for the Recap report. You can let the other options default. The extract format is fixed.

The options are:

System Selection
System Selection identifies the System Logger(s) and associated SMF files you want to report against. Any combination of Logger, Image, or Group can be specified but must be defined in System Definitions. You can use **Prompt** (F4) to select from a list. To link directly to System Definitions, select **Systems** in the action bar.

Specify either:
- A System Logger.
- A Logger for a particular Image. This identifies a particular System Logger when there is more than one with the same ID.
- An Image. CICS PA will report on all systems running on this Image using the SMF files defined for the Image.
- A Logger and Image combination plus a Group. This is useful to uniquely identify a system when there is more than one of the same name defined in System Definitions.
- A Group alone. CICS PA will report on all System and Image combinations in the Group to produce a single consolidated report.

CICS PA uses the System Selection in JCL generation to build the INput(SMFIN001,SMFIN002,SMFIN003,...) operand and corresponding //SMFINnnn DD statements.

Output Data Set Name
The name of the data set where the extract records are written. If CICS PA

is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

When generating the JCL, CICS PA assigns a default DDname **CPAOLEnn** where nn is a sequential number **01-99** to ensure uniqueness.

When specifying the data set name, standard TSO conventions apply.

Disposition

The DISP value that you want the generated JCL to use for the output data set if it is already cataloged:

OLD   Overwrites the data set contents with the new extract data.

MOD   Appends the new extract data.

You must specify one of these dispositions regardless of whether the output data set is cataloged. If the output data set is not cataloged when CICS PA generates the JCL, then CICS PA generates the JCL using DISP=(NEW,CATLG) to catalog it.

Delimiter

The field delimiter used to separate each data field in the extract records. The default is a semicolon (**;**).

CICS PA JCL generation translates this to `DELIMIT('delimiter')`. Note that the value is enclosed in quotes in this operand.

Include Field Labels

Select (**/**) to include field labels as the first record written to the extract data set. This is the default. CICS PA JCL generation translates this to the `LABELS` operand.

Blank out the field if you do not want field labels written. CICS PA JCL generation translates this to the `NOLABELS` operand.

Numeric Fields in Float format

Select (**/**) to write numeric fields in the extract in S390 FLOAT format. CICS PA JCL generation translates this to the `FLOAT` operand.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

Selection Criteria

Optionally, specify the **Logstream Name** and **Structure Name** patterns to be reported. Masking characters **%** and ***** are allowed. Examples of possible patterns are:

TEST.DFHLOG   which must match exactly

PROD.*   which can match PROD.DFHLOG

PROD.MVSA%   which can match PROD.MVSA1, but not PROD.MVSA1LOG

These options generate the `LOGSTREAM('name.or.pattern')` and `STRUCTURE('name.or.pattern')` operands.

To specify Selection Criteria to filter the System Logger records on time period and other field values, enter **S** next to **Logger**.

Line Actions: Valid line actions are:

/ Display the menu of line actions.

S Select to display the subpanel where Selection Criteria for this extract can be specified. See "Specifying Selection Criteria" on page 176 for a discussion on how to do this.

A Activate the Selection Criteria so they will be generated for this extract when the Report Set is submitted. Selection Criteria can only be activated if one or more Select Statements are specified and not all are excluded. An asterisk ***** indicates they are active.

D Deactivate the Selection Criteria. Any you have specified here will not be used.

CICS PA JCL generation translates Selection Criteria to the `SELECT(LOGGER` operand.

Running Report Sets

To produce reports and extracts, submit them for batch processing by entering the **RUN** command (or **SUBmit** or **JCL**) in any of the following ways:

1. As a line action against a Report Set on the Report Sets list panel. See the example in Figure 144. This runs the (saved) Report Set.

2. As a command or selecting **File->Run** in the action bar on the Edit/View Report Set panel. See the example in Figure 146 on page 278. This runs the displayed (not saved) Report Set. That is, runs all the active reports in the active report categories, including any with the RUN line action.

3. As a line action against report categories or reports on the Edit/View Report Set panel. This runs the requested (not saved) report categories and reports.

   • The RUN line action against a report runs the report regardless of its Active status.

   • The RUN line action against a report category runs all active reports in the category regardless of the Active status of the category.

4. As a command or by selecting **File->Run** in the action bar on the individual Report panel. This runs the displayed (not saved) Report.

The **RUN** command (or **SUBmit** or **JCL**) triggers the display of the Run Report Set panel where you can specify run-time options. You can then elect to submit the job immediately (**SUBmit**) or edit the JCL before submit (**JCL**). See Figure 151 on page 288 for an example of the JCL Edit panel.

In the following example, the RUN line action is a request to run the DAILY Report Set. This will run the active reports in active categories with Global Options and any active Selection Criteria.

```
   File  Systems  Confirm  Options  Help
  -------------------------------------------------------------------------------
                                    Report Sets                 Row 1 to 4 of 4
  Command ===> _____ Scroll ===> PAGE

  Report Sets Data Set . . : xxxx.CICSPA.RSET

   /    Name          Description              Changed        ID
   ___  BTS1     BTS Report                  2005/01/01 00:00 CICSPA
   RUN  DAILY    Daily CMF Reports           2005/01/01 00:00 CICSPA
   ___  EXCEPT1  Exception Reports           2005/01/01 00:00 CICSPA
   ___  WEEKLY   Weekly CMF Reports          2005/01/01 00:00 CICSPA
  ****************************** End of list *******************************
```

Figure 144. RUN Report Set from the Report Sets list

In the following example, the RUN line actions will run the Performance List and Wait Analysis reports with Global Options. Note that Global Options are always submitted with the reports regardless of the Active setting.

```
   File  Systems  Confirm  Options  Help
 -------------------------------------------------------------------------------
 EDIT                    Report Set — REPORT2                      Row 1 of 21
 Command ===> _____  Scroll ===> PAGE

 Description  . . . . Demonstration Report Set_____

 Enter "/" to select action.

 ___          ** Reports **                         Active
    -   ___   Options                                  No
          ___   Global                                 No
    -   ___   Selection Criteria                       No
          ___   Performance                            No
          ___   Exception                              No
    -   ___   Performance Reports                      No
         RUN   List                                    No
          ___   List Extended                          No
          ___   Summary                                No
          ___   Totals                                 No
         RUN   Wait Analysis                           No
          ___   Cross-System Work                      No
          ___   Transaction Group                      No
          ___   BTS                                    No
          ___   Workload Activity                      No
    +   ___   Exception Reports                        No
    +   ___   Transaction Resource Usage Reports       No
    +   ___   Subsystem Reports                        No
    +   ___   System Reports                           No
    +   ___   Performance Graphs                       No
    +   ___   Extracts                                 No
          ** End of Reports **
```

Figure 145. RUN reports from Edit Report Set

Running Report Sets

In the following example, the RUN command will run the Exception List and Exception Summary reports with Global Options and Global Exception Selection Criteria.

```
   File  Systems  Confirm  Options  Help
  --------------------------------------------------------------------------------
  EDIT                      Report Set — EXCEPT1                      Row 1 of 14
  Command ===> RUN_____ Scroll ===> PAGE

  Description  . . . . Exception Reports_____

  Enter "/" to select action.

  ___           ** Reports **                          Active
      -  ___   Options                                   Yes
             ___   Global                                Yes
      -  ___   Selection Criteria                        Yes
             ___   Performance                           No
             ___   Exception                             Yes
      +  ___   Performance Reports                       No
      -  ___   Exception Reports                         Yes
             ___   List                                  Yes
             ___   Summary                               Yes
      +  ___   Transaction Resource Usage Reports        No
      +  ___   Subsystem Reports                         No
      +  ___   System Reports                            No
      +  ___   Performance Graphs                        No
      +  ___   Extracts                                  No
             ** End of Reports **
```

Figure 146. RUN Report Set from Edit Report Set

In the following example, the RUN command will run the Performance List report with Global Options.

```
   File  Systems  Options  Help
  --------------------------------------------------------------------------------
                    SAMPLE - Performance List Report
  Command ===> RUN_____

  System Selection:                    Report Output:
   APPLID . . CICSP001  +                 DDname . . . . . . . . . LIST0001
   Image  . . _____  +                 Print Lines per Page . . ___  (1-255)
   Group  . . _____  +

  Report Format:
   Form . . . TRANLIST  +
   Title  . . _____
              _____

  Selection Criteria:
   _   Performance  *
```

Figure 147. RUN report from Edit Report

Set run-time options

The Run Report Set panel is always displayed after **RUN, SUB** or **JCL** is requested but before JCL generation commences. This prompts you for Report Set submission options which allow you to:

- Specify System Selection
- Filter input records based on their SMF time stamp
- Nominate the remedial action you want CICS PA to take if there are missing files for JCL generation

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                           Run Report Set REPORT1
  Command ===> _____

  Specify run Report Set submission options then press Enter to continue submit.

  System Selection:
   CICS APPLID . . _____   +  Image . . _____   +  Group . . _____  +
   DB2 SSID  . . . ___   +      Image . . _____   +  Group . . _____  +
   MQ SSID   . . . ___   +      Image . . _____   +  Group . . _____  +
   Logger  . . . . _____   +  Image . . _____   +  Group . . _____  +


   _   Override System Selections specified in Report Set


                                      ------ Report Interval -----
  Missing SMF Files Option:               YYYY/MM/DD   HH:MM:SS.TH
  2  1. Issue error message          From _____  _____
  _   2. Leave DSN unresolved in JCL  To   _____  _____
      3. Disregard offending reports

  Enter "/" to select option
  /  Edit JCL before submit


   F1=Help      F3=Exit      F4=Prompt   F7=Backward  F8=Forward  F10=Actions
   F12=Cancel
```

Figure 148. Run Report Set: setting run-time options

Before CICS PA generates the JCL, you are prompted to supply the following run-time options:

1. The system(s) to be reported. CICS PA allows you to specify System Selection twice; in the Report Set and here at run time. An Override System Selection option is provided to determine which specification will take precedence in the event of both being specified.
   - When the override option **is not** selected, the run-time System Selection overrides the Report Set Global options only. It does not override any System Selections specified in the individual reports within the Report Set.
   - When the override option **is** selected, the run-time System Selection overrides all System Selections in the Report Set (Global Options and individual reports).
2. The date and time range of the SMF data that you wish to process. If not specified, CICS PA processes the entire SMF File(s). Note that CICS PA always honors any time ranges specified in your Report Selection Criteria, regardless of this setting.
3. Missing SMF Files Option that specifies the remedial action to be taken if you have not defined SMF Files for the systems to be reported.

4. Select to edit the JCL prior to submission.

You can choose to use either Personal or Shared System Definitions to select the SMF input data sets. Use **Systems** in the action bar to switch between Personal and Shared System Definitions.

```
1. Specify Personal System Definitions...
2. Specify Shared System Definitions...
3. Use Personal System Definitions
*. Use Shared System Definitions
```

Figure 149. Systems action bar: Use Personal or Shared System Definitions

The fields on the Run Report Set panel are:

System Selection

System Selection on this panel overrides the global System Selection and optionally the report-level specification. By specifying your systems here, CICS PA can proceed with JCL generation without you having to re-edit the Report Set.

Use System Selection to identify the systems you want this Report Set to analyze. They must be defined in System Definitions with the SMF files you want CICS PA to use for reporting. You can type in the system IDs, or select them from a list by placing the cursor on the field and pressing **Prompt** (F4). To edit your System Definitions, link directly there by selecting **Systems** in the action bar, then on exit you will be returned back here.

You can specify four types of systems:

1. **CICS APPLID:** The CICS Generic APPLIDs you want reported. Specify either:

   - A unique APPLID.
   - An APPLID for a particular MVS Image. This identifies a particular CICS system when there are multiple CICS systems with the same APPLID.
   - An MVS Image. CICS PA will report on all APPLIDs running on this Image using the SMF files defined for the Image.
   - An APPLID and Image combination plus a Group. This is useful for uniquely identifying CICS systems when there are multiple systems of the same name defined.
   - A Group alone. CICS PA will report on all APPLID and Image combinations in the Group to produce a single consolidated report. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

   CICS PA generates the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

2. **DB2 SSID:** The DB2 Subsystem IDs. This is only used by the DB2 Report and Record Selection Extract. If the CICS APPLID Group contains the DB2 SSIDs, then it may be omitted.

   CICS PA generates the `SSID(ssid1,ssid2,ssid3,...)` operands for the DB2 or RECSEL commands and the DD statements for the associated files.

3. **MQ SSID:** The MQ Subsystem IDs. This is only used by the WebSphere MQ Report and Record Selection Extract.

CICS PA generates the `SSID(ssid1,ssid2,ssid3,...)` operands for the MQ or RECSEL commands and the DD statements for the associated files.

4. **Logger:** The MVS System Logger. This is only used by the System Logger Report. If the CICS APPLID Group contains the System Loggers, then it may be omitted.

   CICS PA generates the DD statements for the associated files.

For more information, see "System selection" on page 283.

Override System Selections specified in Report Set

This specifies which System Selection specification will take precedence in the event that you have specified System Selection twice; both here at run time and in the Report Set.

- When the override option **is not** selected, the run-time System Selection overrides the Report Set Global options only. It does not override any System Selections specified in the individual reports within the Report Set.

- When the override option **is** selected, the run-time System Selection overrides all System Selections in the Report Set (Global Options and individual reports).

Start Date/Time, Stop Date/Time

Specify a date/time range or a *time slot* (times only) to filter the SMF input data based on the SMF record time stamp. SMF records with a time stamp within the specified Start/Stop interval are processed by CICS PA, otherwise they are ignored.

Notes:

1. Do not confuse this with the Selection Criteria From/To report intervals which apply to transaction start and stop times.

2. For the DB2 Report, specify a Stop Time that is at least 5 minutes outside the required time (From/To report interval) if protected threads are in use.

The Start/Stop date and time fields are all optional. They are blank initially (for no filtering), but thereafter display the reporting period that was previously saved.

Date is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for the Selection Criteria Report Interval.)

Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both Start and Stop dates are specified, they must be in the same format.

For a date/time range:

- Either From or To can be omitted to indicate that the range is open-ended.
  - If From is omitted, it defaults to the first input record
  - If To is omitted, it defaults to the end of file.
- If From date is specified with no time, the start of day is assumed.
  If To date is specified with no time, the end of day is assumed.

Running Report Sets

For a time slot, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

The specified date/time range is included in the generated JCL under the `//SYSIN DD` statement:

```
CICSPA SMFSTART(-nn|yyyy/mm/dd,hh:mm:ss.th),
       SMFSTOP(-nn|yyyy/mm/dd,hh:mm:ss.th)
```

Missing SMF Files Option

This option allows you to control what CICS PA does when it strikes a problem with JCL generation due to Systems defined without SMF Files specified. Select one of the following actions:

1. **Issue error message.** CICS PA will abort JCL generation and report the error(s) in a window titled Report Set JCL Generation Failure. This will allow you to link to System Definitions and correct your file specifications. See Figure 150 on page 287 for an example of this error panel.

2. **Leave DSN unresolved in JCL.** CICS PA will proceed with JCL generation creating DD statements with **DSN=<unresolved>** where the files are not known. Regardless of your JCL or SUB request, the JCL will be edited to allow you to specify the DSNs before submission.

3. **Disregard offending reports.** CICS PA will proceed with JCL generation. Only reports whose Systems have files specified are included. All other reports are ignored. If there are no error-free reports, then a Report Set JCL Generation Failure error message will be issued.

Edit JCL before submit

Enter **/** to edit the JCL with command input before submitting the report request. This is the default if you used the **JCL** command to run the Report Set.

Editing JCL before submit will enable you to save the JCL in an external data set for automated job scheduling or ad hoc report requests.

If not selected, the JCL is generated and the job is submitted immediately. This is the default if you used the **SUBmit** command to run the Report Set.

If you used the **RUN** command to run the Report Set, the default setting is what you previously specified.

When the specification is complete, press Enter to proceed.

Report Set JCL generation

At Report Set run time, CICS PA generates the required batch JCL, bringing together information from the following sources within the CICS PA dialog:

1. **Report Set.** The Report Set specifies the reports you wish to run and their options.

2. **Report Forms.** When a report requests a Report Form, CICS PA looks for them in the Report Forms data set and constructs the applicable FIELDS, BY, and LIMIT report operands.

3. **Object Lists.** When a report specifies Selection Criteria, Object Lists can be used to identify a pre-defined list of object names. For example, Transaction IDs that belong to a particular application. CICS PA looks for them in the Object Lists data set and constructs the applicable SELECT report operands.

4. **System Definitions.** The System Definitions define the systems that can be reported and their associated SMF files. At run time or inside your Report Set,

you must specify System Selection, that is, the systems to be reported. CICS PA matches the System Selection to your System Definitions. The following section describes how CICS PA interprets your System Selection and uses the System Definitions to satisfy your report request.

System selection

System Selection specifies the systems (CICS APPLIDs, DB2 SSIDs, MQ SSIDs and System Logger systems) to be reported by the Report Set. CICS PA matches these specifications with your System Definitions and constructs the DD statements for the required SMF Files.

The System Selection can be specified:

1. In each report within the Report Set. This specification applies to this report only.
2. In the Global Options of the Report Set. This specification applies to all reports in the Report Set that do not have their own System Selection.
3. At run time. This overrides the Global Option and optionally the report-level specification.

The System Selection specification consists of three parts:

System name
  The name of the system to be reported. When System name is specified, Image and Group are only use to further qualify the system. For example, report CICS system CICSP1 that runs on Image MVS1, not the one that runs on Image MVS2.

Image The MVS Image where the system(s) to be reported run. When specified on its own (without a System name), then all Systems running on the Image are reported. For example, report all CICS systems that run on Image MVS1.

Group The group of systems to be reported. When specified without System name, then all Systems defined to the Group are reported as a consolidated group. For example, report all Production MRO CICS systems.

The following sections explain how CICS PA interprets the various System Selections and which SMF files (defined in your System Definitions) are used to process the report requests.

CICS system selection
Specifies the CICS system(s) to be reported.

CICS APPLID
  Specifies the CICS system(s) to be reported.

  If specified:
  1. CICS PA looks for the first exact System Definition match. If found, the files for this CICS System Definition are used.
  2. Otherwise, CICS PA looks for the first pattern System Definition match. If found, the files for this System Definition are used. For example, specifying CICSD1 will match CICS System Definition CICSD*.
  3. Otherwise, if the Image is specified, CICS PA looks for an Image System Definition match. If found, the files for the Image System Definition are used.

4. Otherwise, the CICS system is deemed to be undefined and you will be prompted to correct your specification.

The APPLID operand identifies the specified CICS system. For example: APPLID(CICSD1).

If CICS APPLID is not specified, then Image or Group must be specified.

Image Specifies the MVS Image of the CICS systems to be reported.

1. If specified in conjunction with a CICS APPLID, then Image is only used to further qualify the CICS system to be reported.
2. If specified without a CICS APPLID, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all APPLIDs with data in these files (by specifying the NOAPPLID operand).
3. Otherwise, the Image is deemed to be undefined and you will be prompted to correct your specification.

Group Specifies the Group of the CICS system(s) to be reported.

1. If specified in conjunction with a CICS APPLID, then Group is only used to further qualify the CICS system to be reported.
2. If specified without a CICS APPLID, then CICS PA looks for an exact Group System Definition match. If found, the files for all systems in the Group are used and CICS PA will report against all APPLIDs in the Group. The APPLID operand identifies the CICS systems in the specified Group. For example: `APPLID(CICSPTOR,CICSPAOR,CICSPFOR)`.
3. Otherwise, the Group is deemed to be undefined and you will be prompted to correct your specification.

When the CICS System Selection specifies a Group, and the DB2 and Logger System Selections are not specified, then CICS PA will report against all DB2 subsystems and Loggers in this Group.

DB2 system selection

Specifies the DB2 subsystem(s) to be reported by the DB2 report.

DB2 SSID

Specifies the DB2 subsystem(s) to be reported by the DB2 reports.

If specified:

1. CICS PA looks for the first exact System Definition match. If found, the files for this DB2 System Definition are used.
2. Otherwise, CICS PA looks for the first pattern System Definition match. If found, the files for this DB2 System Definition are used. For example, specifying DB2P will match DB2 System Definition DB2*.
3. Otherwise, if the Image is specified, CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used.
4. Otherwise, the DB2 subsystem is deemed to be undefined and you will be prompted to correct your specification.

The SSID operand of the DB2 report identifies the specified DB2 system. For example: `DB2(SSID(DB2P),...)`.

Image Specifies the MVS Image of the DB2 subsystems to be reported.

1. If specified in conjunction with a DB2 subsystem ID, then Image is used to further qualify the DB2 subsystem to be reported.
2. If specified without a DB2 subsystem ID, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all DB2 SSIDs used by the reported CICS systems.
3. Otherwise, the Image is deemed to be undefined and you will be prompted to correct your specification.

Group Specifies the Group of the CICS system(s) to be reported.

1. If specified in conjunction with a DB2 SSID, then Group is only used to further qualify the DB2 subsystem to be reported.
2. If specified without a DB2 SSID, then CICS PA looks for an exact Group System Definition match. If found, all DB2 subsystems in the Group are reported.
3. Otherwise, the Group is deemed to be undefined and you will be prompted to correct your specification.

The SSID operand of the DB2 report identifies the DB2 systems in the group. For example: `DB2(SSID(DB2A,DB2B),...)`.

If you do not specify DB2 System Selection:

1. If your CICS System Selection specifies a Group that contains DB2 systems, then CICS PA will report against all DB2 systems in the Group.
2. Otherwise, the SSID operand is omitted and CICS PA assumes that the DB2 data is contained in the CICS system files and reports against all DB2 subsystems used by the CICS systems.

MQ system selection

Specifies the MQ subsystem(s) to be reported by the WebSphere MQ report.

MQ SSID

Specifies the MQ subsystem(s) to be reported by the WebSphere MQ reports.

If specified:

1. CICS PA looks for the first exact System Definition match. If found, the files for this MQ System Definition are used.
2. Otherwise, CICS PA looks for the first pattern System Definition match. If found, the files for this MQ System Definition are used. For example, specifying MQSX will match MQ System Definition MQ*.
3. Otherwise, if the Image is specified, CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used.
4. Otherwise, the MQ subsystem is deemed to be undefined and you will be prompted to correct your specification.

The SSID operand of the WebSphere MQ report identifies the specified MQ system. For example: `MQ(SSID(MQSX),...)`.

Image Specifies the MVS Image of the MQ subsystems to be reported.

1. If specified in conjunction with a MQ subsystem ID, then Image is used to further qualify the MQ subsystem to be reported.
2. If specified without a MQ subsystem ID, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image

System Definition are used and CICS PA will report against all MQ SSIDs used by the reported CICS systems.

3. Otherwise, the Image is deemed to be undefined and you will be prompted to correct your specification.

Group Specifies the Group of the CICS system(s) to be reported.

1. If specified in conjunction with a MQ SSID, then Group is only used to further qualify the MQ subsystem to be reported.

2. If specified without a MQ SSID, then CICS PA looks for an exact Group System Definition match. If found, all MQ subsystems in the Group are reported.

3. Otherwise, the Group is deemed to be undefined and you will be prompted to correct your specification.

The SSID operand of the WebSphere MQ report identifies the MQ systems in the group. For example: `MQ(SSID(MQSX,MQSZ),...)`.

If you do not specify MQ System Selection:

1. If your global CICS System Selection specifies a Group that contains MQ systems, then CICS PA will report against all MQ systems in the Group.

2. Otherwise, you will be prompted to specify your MQ System Selection.

Logger system selection

Specifies the Logger system(s) to be reported by the System Logger report.

Logger

Specifies the Logger system(s) to be reported.

If specified:

1. CICS PA looks for the first exact Logger System Definition match. If found, the files for this Logger System Definition are used.

2. Otherwise, CICS PA looks for the first pattern Logger System Definition match. If found, the files for this Logger System Definition are used.

3. Otherwise, if the Image is specified, CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used.

4. Otherwise, the Logger system is deemed to be undefined and you will be prompted to correct your specification.

If Logger is not specified, then Image or Group must be specified.

Image Specifies the MVS Image of the Logger systems to be reported.

1. If specified in conjunction with a Logger system name, then Image is only used to further qualify the Logger system to be reported.

2. If specified without a Logger system name, then CICS PA looks for an exact Image System Definition match. If found, the files for the Image System Definition are used and CICS PA will report against all Logger systems with data in the SMF files.

3. Otherwise, the Image is deemed to be undefined and you will be prompted to correct your specification.

Group Specifies the Group of the Logger system(s) to be reported.

1. If specified in conjunction with a Logger system name, then Group is only used to further qualify the Logger system to be reported.

2. If specified without a Logger system name, then CICS PA looks for an exact Group System Definition match. If found, all Logger systems in the Group are reported.

3. Otherwise, the Group is deemed to be undefined and you will be prompted to correct your specification.

If you do not specify Logger System Selection:

1. If your CICS System Selection specifies a Group that contains Logger systems, then CICS PA will report against all Logger systems in the Group.

2. Otherwise, you will be prompted to specify your Logger System Selection.

Report Set JCL generation failure

```
------------- Report Set JCL Generation Failure -------------

Command ===> _____

Report Set JCL generation failed with the following error:

CPA1029E   Report Set JCL generation failed. System or Group
           has no SMF files
CPA1030E   System=CICSR2, Report=Record Selection Extract,
           Output=CICSR2.RECSEL.EXTRACT

Press Enter to edit System Definitions where you can correct
the error that caused Report Set JCL generation to fail.

Use Exit or Cancel to return.

F1=Help     F3=Exit     F12=Cancel
```

Figure 150. Report Set JCL generation failure

This error panel is displayed when CICS PA is unable to proceed with JCL generation because systems to be reported are either not defined or have no SMF Files. The error messages detail the reasons and the report or extract which has the problem.

To correct the System Definitions details, press Enter to link directly there.

Alternatively, to correct the Report Set details, use Exit or Cancel.

This error panel can be avoided by selecting another **Missing SMF Files Option** on the Run Report Set panel.

Report Set JCL

If you requested to edit the JCL, it will be displayed in an ISPF edit session when Report Set JCL generation is complete.

You can modify the JCL and command input as required. You also have the option here to use the Edit **CREATE** command to store the JCL and command deck in your jobs library for later modification and submission independently of the Report Set.

Running Report Sets

To submit the job from the JCL Edit panel, enter **SUBmit** on the command line.

```
   File  Edit  Confirm  Menu  Utilities  Compilers  Test  Help
 -------------------------------------------------------------------------------
 EDIT       PROFILE.USERID.SPFTEMP2.CNTL                   Columns 00001 00072
 Command ===> SUB_____ Scroll ===> PAGE
 ****** *************************** Top of Data ****************************
 000001 //USERID JOB (ACCOUNT),'NAME',REGION=4M
 000002 //* CICS PA V2R1 Report JCL
 000003 //CICSPA   EXEC PGM=CPAMAIN
 000004 //STEPLIB  DD DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
 000005 //SYSPRINT DD SYSOUT=*
 000006 //* SMF Input Files
 000007 //SMFIN001 DD DSN=CICSP1.CMF.FILE1,
 000008 //           DISP=SHR
 000009 //* Command Input
 000010 //SYSIN DD *
 000011 * Report Set =REPORTP1
 000012 * Description=Sample CICS PA Report Set
 000013 * Reports for System=CICSP1
 000014 *          Image =SYS1
 000015 *          Description=CICS PA Demonstration System
 000016 * Reports for APPLID=CICSP1   Image=SYS1
 000017        CICSPA IN(SMFIN001),
 000018              APPLID(CICSP1),
 000019              LINECNT(60),
 000020              FORMAT(':','/'),
 000021           LIST(OUTPUT(LIST0001))
 000022 /*
 ****** *************************** Bottom of Data ****************************
```

Figure 151. Submitting from JCL Edit

Processing the output

View or print the generated reports using your normal facilities such as as **SDSF** or ISPF option 3.8 **Outlist Utility.**

Process the extract data sets using a method appropriate to each. For example:

- Analyze the Cross-System Work Extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance Export data using external programs such as DB2 or PC tools such as Lotus 1-2-3.
- Specify the Record Selection Extract data sets as your SMF Files in System Definitions to make your CICS PA reporting more efficient.

Chapter 9. Report Forms

Report Forms are used to tailor the format and content of the following CICS PA reports and extracts:
> Performance List report
> Performance List Extended report
> Performance Summary report
> Cross-System Work report
> Export extract
> HDB reports

There are three report types. Each has different default settings, allowed values, and special requirements. The form types, applicable reports and extracts, and characteristics of each form type are:

LIST   Can be used for:
- Performance List report
- Cross-System Work Extended report
- Export extract
- List HDB reports

The Form defines:
- Report titles
- Column headings and content
- Selection Criteria

The default format of the LIST Report Form is shown in Figure 156 on page 301.

LISTX Can be used for:
- Performance List Extended report
- Cross-System Work Extended report (sort sequence and limit ignored)
- Export extract (sort sequence and limit ignored)

The Form defines:
- Report titles
- Column headings and content
- Sort sequence
- Key limit count
- Selection Criteria

The default format of the LISTX Report Form is shown in Figure 158 on page 309.

SUMMARY
Can be used for:
- Performance Summary report
- Export extract
- Summary HDB reports

The Form defines:
- Report titles
- Column headings and content
- Up to 8 key fields to summarize by
- Sort sequence
- Alternate sequencing on a numeric field (optional)
- Selection Criteria

The default format of the SUMMARY Report Form is shown in Figure 160 on page 314.

Specifying a Report Form for a report or extract is optional. If a Form is not specified, the report or extract is produced using the default format.

Maintaining Report Forms

To display the list of Report Forms, select option 3 **Report Forms** from the CICS PA Primary Option Menu.

1. Use the **Options** menu on the action bar to nominate the Report Forms data set (if one has not yet been nominated, or you wish to change the data set).
2.

```
   File  Confirm  Samples  Options  Help
 ------------------------------------------------------------------------------
                               Report Forms                  Row 1 to 3 of 3
 Command ===> _____ Scroll ===> PAGE

 Report Forms Data Set  . . : xxxx.CICSPA.FORM

  /  Name     Type              Description            Changed        ID
  _  LISTX1   LISTX    List Extended Report Form    2005/01/13 09:00 MKR08
  _  LIST1    LIST     List Report Form             2005/01/01 12:27 JCH02
  _  PSUMMY01 SUMMARY  Summary Report Form          2005/01/12 08:57 DAM13
 ******************************** End of list ********************************
```

Figure 152. Report Forms

This panel lists all the Report Forms in the current Report Forms data set. The current Report Forms data set is one of the Control Data Sets in your profile settings. To change it, use **Options** in the action bar, or enter **CDS** from the command line.

From the list of Report Forms, you can select one at a time to view or modify, or you can create new Report Forms.

You can also add a selection of sample Report Forms by selecting **Samples** in the action bar or entering the **SAMPLES** command. See "Sample Report Forms" on page 292.

The Report Forms are listed with the following user-defined attributes:

Name   1-8 character name in ISPF member name format, used to uniquely identify the Report Form within the Report Forms data set. By default, the panel is sorted on the Name field.

Type   The type of Report Form, either LIST, LISTX or SUMMARY.

Description
Free format text up to 32 characters that describes the contents and purpose of the Report Form.

In addition, the Report Forms are listed with the following system-generated attributes:

Changed   Date and time when last updated.

ID   The userid that last updated the Report Form.

Line Actions: The following line actions can be entered against any row in the Report Forms list:

/   Display the menu of line actions.

E   Edit the Report Form.

S   Select the Report Form (same as Edit).

V   View the Report Form. This looks like the Edit panel but has no 'hold' on the data and has no Save capability. SAVEAS is available.

D   Delete the Report Form.

R   Rename the Report Form.

Primary Commands: The following primary commands are valid for this panel:

NEW name type
         This command creates a new Report Form with the specified name. The type is either:
LIST	List Report Form
LISTX or LX	List Extended Report Form
SUMMARY	Summary Report Form
MODEL	Model on an existing Report Form
MODELT	Model on an existing HDB Template

         It displays the New Report Form window populated with values from your entered command or from the last Report Form you created, and prompts you for further details to define the new Report Form.

         Also available from **File** in the action bar or **F6.**

         See "Creating new Report Forms" on page 297 for information on how to proceed.

SELECT name
         This command (or **S**) selects the specified Report Form for editing. If the Report Form does not exist, it is created as if the **NEW** command was used.

         Also available from **File** in the action bar.

SORT Name|Type|Description|Changed|Id
         This command sorts the list of Report Forms on one or two columns. The default sort field is **Name.** The sort disregards upper and lower case, and is ascending for all but the Changed column which is descending. The sort order is retained only until Exit or another SORT command is issued.

LOCATE string
         This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

CONFIRM ON|OFF
         CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Delete a Report Form.

         With **CONFIRM OFF,** Delete requests are actioned immediately. Deleted Report Forms cannot be reinstated.

This command changes the setting only for the current invocation of the Report Forms panel. On exit, it reverts to the default set by **Delete Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

SAMPLES

This command displays the list of Sample Report Forms. You can select one or more Forms from the list to populate your Report Forms data set.

Also available from **Samples** in the action bar.

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data.

To find more occurrences, press **RFIND** (F5). If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Press **RFIND** (F5) to search from the top. If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

Sample Report Forms

A set of sample Report Forms is provided with CICS PA (see Table 6 on page 294). They demonstrate how CICS PA reports can be tailored to reflect the many ways you use and configure your CICS systems. The CICS PA reports and extracts produced using these sample Report Forms will provide a detailed picture of the many aspects affecting CICS system performance.

To add the samples to your Report Forms data set, select **Samples** in the action bar of the Report Forms panel.

```
                   Sample Report Forms
  Command ===> _____ Scroll ===> PAGE

  Select one or more sample Report Forms then press EXIT.

       Name    Type            Description
  _  ABNDLST  LIST     Transaction Abend List
  _  ABNDSUM  SUMMARY  Transaction Abend Summary
  _  ACCTSUM  SUMMARY  Accounting Summary HDB Extract
  _  BADCPU   LISTX    Top 20 Worst CPU Times
  _  BADDB2RQ LISTX    Top 20 Worst DB2 Requests
  _  BADFCRQ  LISTX    Top 20 Worst File Requests
  _  BADRESP  LISTX    Top 20 Worst Response Times
  _  BADRMI   LISTX    Top 20 Worst CICS RMI Times
  _  BADRMIRQ LISTX    Top 20 Worst CICS RMI Requests
  _  BADSUSP  LISTX    Top 20 Worst Suspend Times
  _  BADTDRQ  LISTX    Top 20 Worst Tdqueue Requests
  _  BADTSRQ  LISTX    Top 20 Worst Tsqueue Requests
  _  BADWBRQ  LISTX    Top 20 Worst CICS Web Requests
  _  BTSACLST LIST     CICS BTS Activity - Overview
  _  BTSRQLST LIST     CICS BTS Request Activity
  _  BTSRQSUM SUMMARY  CICS BTS Request Activity
  _  CCLST    LIST     Channel Container Activity
  _  CCSUM    SUMMARY  Channel Container Activity
  _  CC3LST   LIST     Channel Container Activity (V3)
  _  CC3SUM   SUMMARY  Channel Container Activity (V3)
  _  COMMWLST LIST     Transaction Comms Wait Analysis
  _  COMMWSUM SUMMARY  Transaction Comms Wait Analysis
  _  CPULEXTR LIST     CPU Analysis and Extract
  _  CPULST   LIST     Transaction CPU Analysis
  _  CPULST1  LIST     Transaction CPU Analysis (1)
  F1=Help    F3=Exit    F5=Rfind   F6=Resize  F12=Cancel
```

Figure 153. Select Sample Report Forms

This is a list of sample Report Forms that are available for selection.

The sample Report Forms can be added to your Report Forms data set at any time regardless of its current contents. A sample Report Form will not be available for selection if a Report Form of the same name already exists. **Changed** and **ID** are set to **2007/02/22 00:00 CICSPA**

Enter line action **S** (or any non-blank character) to select one or more sample Report Forms.

Alternatively, enter **S *** on the command line to select all the samples. The **RESet** command will clear all line actions.

You can use **FIND** and **RFIND** (F5) to search for a specified character string in any column.

Press **Exit** (F3) to complete your selection.

Available Sample Report Forms

The full selection list of sample Report Forms is shown in the following table.

Table 6. Sample Report Forms

Name	Type	Description
ABNDLST	List	Transaction Abend List
ABNDSUM	Summary	Transaction Abend Summary
ACCTSUM	Summary	Accounting Summary HDB Extract
BADCPU	ListX	Top 20 Worst CPU Times
BADDB2RQ	ListX	Top 20 Worst DB2 Requests
BADFCRQ	ListX	Top 20 Worst File Requests
BADRESP	ListX	Top 20 Worst Response Times
BADRMI	ListX	Top 20 Worst CICS RMI Times
BADRMIRQ	ListX	Top 20 Worst CICS RMI Requests
BADSUSP	ListX	Top 20 Worst Suspend Times
BADTDRQ	ListX	Top 20 Worst Tdqueue Requests
BADTSRQ	ListX	Top 20 Worst Tsqueue Requests
BADWBRQ	ListX	Top 20 Worst CICS Web Requests
BADWMQRQ	ListX	Top 20 Worst WMQ Requests
BTSACLST	List	CICS BTS Activity - Overview
BTSRQLST	List	CICS BTS Request Activity
BTSRQSUM	Summary	CICS BTS Request Activity
CC3LST	List	Channel Container Activity (V3)
CC3SUM	Summary	Channel Container Activity (V3)
CCLST	List	Channel Container Activity
CCSUM	Summary	Channel Container Activity
COMMWLST	List	Transaction Comms Wait Analysis
COMMWSUM	Summary	Transaction Comms Wait Analysis
CPU3LEXT	List	CPU Analysis and Extract (V3)
CPU3SEXT	Summary	CPU Analysis and Extract (V3)
CPU8LST	List	Transaction CPU Analysis (Key 8)
CPU8SUM	Summary	Transaction CPU Analysis (Key 8)
CPU9LST	List	Transaction CPU Analysis (Key 9)
CPU9SUM	Summary	Transaction CPU Analysis (Key 9)
CPULEXTR	List	CPU Analysis and Extract
CPULST	List	Transaction CPU Analysis
CPULST1	List	Transaction CPU Analysis (1)
CPUSEXTR	Summary	CPU Analysis and Extract
CPUSUM	Summary	Transaction CPU Analysis
CPUSUM1	Summary	Transaction CPU Analysis (1)
CSLSALST	List	IP CICS Sockets - Listener Actvt
CSLSASUM	Summary	IP CICS Sockets - Listener Actvt
CSTRCLST	List	IP CICS Sockets - TRUE Calls
CSTRCSUM	Summary	IP CICS Sockets - TRUE Calls
CSTSKLST	List	IP CICS Sockets - Task Usage
CSTSKSUM	Summary	IP CICS Sockets - Task Usage
CSWANLST	List	Cross-System Analysis List
CSWEXLST	List	Cross-System Extract List Report
DHLST	List	CICS Document Handler Analysis
DHSUM	Summary	CICS Document Handler Analysis
DISPSUM	Summary	Transaction Dispatch/CPU Usage
EJBLST	List	Enterprise Java Bean Analysis
EJBSUM1	Summary	Enterprise Java Bean Analysis(1)
EJBSUM2	Summary	Enterprise Java Bean Analysis(2)
ENQLST	List	CICS ENQueue/Lock Delay Analysis
ENQSUM	Summary	CICS ENQueue/Lock Delay Analysis

Table 6. Sample Report Forms (continued)

Name	Type	Description
EXWTLST	List	Exception Wait Analysis
EXWTSUM	Summary	Exception Wait Analysis
FCLST	List	File Request Activity
FCRQRNGC	Summary	File Request Distribution
FCRQRNGP	Summary	File Request Distribution (%)
FCSUM	Summary	File Request Activity
FCTYLST	List	Transaction Facility Analysis
FCWTLST	List	File Wait Analysis
FCWTSUM	Summary	File Wait Analysis
FDSPLST	List	First Dispatch Delay Analysis
FDSPSUM	Summary	First Dispatch Delay Analysis
FEPILST	List	FEPI Request Activity
FEPISUM	Summary	FEPI Request Activity
IC3LST	List	Interval Control Activity (V3)
IC3SUM	Summary	Interval Control Activity (V3)
ICLST	List	Interval Control Activity
ICSUM	Summary	Interval Control Activity
IMSDBLST	List	Transaction DBCTL Usage Analysis
IMSDBSUM	Summary	Transaction DBCTL Usage Analysis
IMSRQLST	List	Transaction DBCTL Req Analysis
IMSRQSUM	Summary	Transaction DBCTL Req Analysis
IMSSUM	Summary	IMS DBCTL PSB Usage Analysis
JCLST	List	Journaling/Logging Activity
JCSUM	Summary	Journaling/Logging Activity
JVMLST	List	Java Virtual Machine Analysis
JVMSUM	Summary	Java Virtual Machine Analysis
OMOEMLST	List	OMEGAMON Third Party Support
OMOEMSUM	Summary	OMEGAMON Third Party Support
OMRLMLST	List	OMEGAMON Resource Limit Warnings
PC3LST	List	Program Request Channel Activity
PC3SUM	Summary	Program Request Channel Activity
PCLST	List	Program Request Activity
PCSUM	Summary	Program Request Activity
PGAPLSUM	Summary	Transactions by Application Prog
PGUSESUM	Summary	Transactions by Initial Program
PSTORLST	List	Program Storage Analysis
PSTORSUM	Summary	Program Storage Analysis
RESPPEAK	Summary	Response Time Peak Percentiles
RESPRNGC	Summary	Response Time Distribution
RESPRNGM	Summary	Response Time Distribution (C+%)
RESPRNGP	Summary	Response Time Distribution (%)
RESPWLMP	Summary	Response Time Distribution (%)
RMIDBLST	List	CICS RMI Analysis - DB2 Overview
RMIDBSUM	Summary	CICS RMI Analysis - DB2 Overview
RMILST1	List	CICS RMI Analysis - Detail (1)
RMILST2	List	CICS RMI Analysis - Detail (2)
RMIMQLST	List	CICS RMI Analysis - MQ Overview
RMIMQSUM	Summary	CICS RMI Analysis - MQ Overview
RMIMSLST	List	CICS RMI Analysis - IMS Overview
RMIMSSUM	Summary	CICS RMI Analysis - IMS Overview
RMIOVLST	List	CICS RMI Analysis - Overview
RMIOVSUM	Summary	CICS RMI Analysis - Overview
RMISUM1	Summary	CICS RMI Analysis - Summary (1)
RMISUM2	Summary	CICS RMI Analysis - Summary (2)

Sample Report Forms

Table 6. Sample Report Forms (continued)

Name	Type	Description
RTETRSUM	Summary	Transaction Routing Analysis (2)
SOAPLST	List	SOAP for CICS Usage - Detail
SOAPSUM	Summary	SOAP for CICS Usage - Summary
SSTORLST	List	Shared Storage Analysis
SSTORSUM	Summary	Shared Storage Analysis
STG24LST	List	Storage Usage - Below 16MB
STG31LST	List	Storage Usage - Above 16MB
SUMBYATD	Summary	Summary by Application Tran ID
TCB3LST	List	CICS TCB Usage and Delays (V3)
TCB3SUM	Summary	CICS TCB Usage and Delays (V3)
TCLDLSUM	Summary	Tclass Delays by Tranclass Name
TCLST1	List	Terminal Control Activity (1)
TCLST2	List	Terminal Control Activity (2)
TCPIPSUM	Summary	Transactions by TCP/IP Service
TCPLST	List	CICS Support for TCP/IP Analysis
TCPSUM	Summary	CICS Support for TCP/IP Analysis
TCSUM2	Summary	Terminal Control Activity (2)
TDLST	List	Transient Data Activity
TDSUM	Summary	Transient Data Activity
TRAPLSUM	Summary	Transactions by Application Tran
TRARLSUM	Summary	Transactions by CICS Release
TRARTSUM	Summary	Transaction Routing Analysis (3)
TRATDSUM	Summary	Transactions by Applid and TOD
TRORGSUM	Summary	Transactions by Origin Type
TRPGMSUM	Summary	Transactions by Program Name
TRRTESUM	Summary	Transaction Routing Analysis (1)
TRTCLSUM	Summary	Transactions by Tranclass Name
TRTESUM	Summary	Transaction Usage by Terminal ID
TRTODSUM	Summary	Transactions by Time-of-Day
TRTRASUM	Summary	Transaction Routing Analysis (4)
TRUSRSUM	Summary	Transactions by Userid
TSLST	List	Temporary Storage Activity
TSSUM	Summary	Temporary Storage Activity
TSWTLST	List	Temporary Storage Wait Analysis
TSWTSUM	Summary	Temporary Storage Wait Analysis
UOWLST	List	Transaction Network Unit-of-Work
USTORLST	List	User (Task) Storage Analysis
USTORSUM	Summary	User (Task) Storage Analysis
WB3LST	List	CICS Web Support Analysis (V3)
WB3SUM	Summary	CICS Web Support Analysis (V3)
WBLST	List	CICS Web Support Analysis
WBR3LST	List	CICS Web Support Repository Use
WBR3SUM	Summary	CICS Web Support Repository Use
WBS3LST	List	CICS Web Support Analysis (V3)
WBS3SUM	Summary	CICS Web Support Analysis (V3)
WBSUM	Summary	CICS Web Support Analysis
WBSV3LST	List	CICS WEBSERVICE Usage (V3)
WBSV3SUM	Summary	CICS WEBSERVICE Usage (V3)

Creating new Report Forms

You can request a new Report Form in either of the following ways:

- In the command line, enter **NEW** followed by the name of the new Report Form and initialization details using the following syntax:

```
►►──NEW──newname──┬─LIST────────┬──────────────────────────────────────────────►◄
                  ├─LISTX│LX────┤
                  ├─SUMMARY─────┤
                  ├─MODEL───────┤
                  └─MODELT──────┘
```

- Select **File** from the action bar, then choose **New.**
- Press **New** (F6).

A pop-up dialog window is displayed as shown in Figure 154. This is always displayed to allow you to initially populate your Report Form with fields for a particular CICS System (including any user fields), Version (VRM), or fields in selected categories. Alternatively, you can model the new Report Form on an existing Report Form or HDB Template.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                          New Report Form
Command ===>

Specify new Report Form options.


Name . . . LIST2___   Version (VRM) . . . ___  +

System Selection:           Field Categories:
 APPLID . . . . CICST1__  +  _   Select to specify Field Categories
 MVS Image . . . _____

Form Type or Model:
 _  1. List                  4. Model (Report Form)
    2. List Extended (Sorted)  5. Model (HDB Template)
    3. Summary

Model . . . . . . . . . . LIST1___  +
Report Forms Data Set . . 'xxxx.CICSPA.FORM'_____  +
HDB Register . . . . . . 'CICSPA.V140.HDB.REGISTER'_____  +


 F1=Help     F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
F11=Right    F12=Cancel
```

Figure 154. Specifying a New Report Form

This panel prompts you for details of the new Report Form.

The options are:

Name   The name of the new Report Form. A 1-8 character name in ISPF member name format. The name must be unique within the Report Forms data set.

APPLID, Image, Version (VRM)
          Specify the CICS System or CICS Version (VRM) that this Report Form applies to.

New Report Form

- If you specify the CICS System (APPLID, or APPLID and MVS Image), CICS PA can extract the associated (active) Dictionary entries for that CICS system, including any user fields. If not specified, CICS PA will assume the default Form, and user fields will not be available.

  The CICS system must be defined in System Definitions, either Personal or Shared depending on your current setting. To select one from a list, use **Prompt** (F4). To link directly to System Definitions or switch between Personal and Shared Systems, use **Systems** in the action bar.

- Alternatively, if you specify the VRM, CICS PA uses it to populate the Form with fields applicable to that release of CICS. The supported releases are:

530	CICS Transaction Server for OS/390 Version 1 Release 3
610	CICS Transaction Server for z/OS Version 2 Release 1
620	CICS Transaction Server for z/OS Version 2 Release 2
630	CICS Transaction Server for z/OS Version 2 Release 3
640	CICS Transaction Server for z/OS Version 3 Release 1
650	CICS Transaction Server for z/OS Version 3 Release 2

  If a CICS System is specified and its VRM or Dictionary record is available, it overrides the VRM specification.

  If you do not specify either a CICS System or a VRM, then CICS PA populates the Form with fields applicable to the latest supported release of CICS.

Field Categories

Enter **/** (or press **F11**) to display the selection list of field categories that you can use to initially populate your new Report Form. For example, you can initialize your Form with Task and Terminal Control fields by selecting DFHTASK and DFHTERM from the list. The default is all categories, except CROSSSYS.

Within the selected categories, the fields added to your Report Form depend on the specified CICS APPLID or VRM. If APPLID is specified, CICS PA obtains the fields from the CMF Dictionary for that APPLID. Otherwise the VRM is used. If APPLID and VRM are not specified, the default is **650**.

See Figure 155 on page 299 for an example of the Field Categories selection list.

Form Type or Model

Select the type of Report Form or model which dictates how the new Form is to be initialized (such as the fields, order, sort sequence). Type is important since a Form can only be used by reports and extracts of compatible type:

1. List   Can be used for:
- Performance List report
- Cross-System Work report
- Export extract
- List HDB reports

2. List Extended (Sorted)

Can be used for:
- Performance List Extended report
- Cross-System Work report (sort sequence and limit ignored)
- Export extract (sort sequence and limit ignored)

3. Summary

Can be used for:
- Performance Summary report
- Export extract
- Summary HDB reports

Alternatively, you can select **Model** to create a new Report Form modelled on an existing Report Form or HDB Template.

4. Model (Report Form)

If the new Report Form is to be modelled on an existing one, specify the name of the model Report Form and data set where it is stored. **Prompt** (F4) is available for both the Report Form data set name and the Report Form member name.

5. Model (HDB Template)

If the new Report Form is to be modelled on an existing HDB Template, specify the name of the model HDB Template and HDB Register where it is stored. **Prompt** (F4) is available for both the HDB Register data set name and the HDB Template name.

For HDB reporting and extract to CSV, it is useful to model a Report Form on an HDB Template. This ensures that the fields requested in the Form match the fields collected in the HDB.

When you have specified all required details, press Enter to create the Report Form.

Select field categories

To display the list of available CICS field categories, enter **/** to select Field Categories or press **F11** from the New Report Form panel.

```
                        Select Field Categories
Command ===> _____


Category Selection:
 _   DFHAPPL - Application naming       _   DFHJOUR - Journal
 _   DFHBTS  - BTS                      _   DFHMAPP - BMS Maps
 _   DFHCHNL - CHANNEL option           /   DFHPROG - Program Control
 /   DFHCICS - CICS task information     _   DFHRMI  - Resource Manager (RMI)
 _   DFHDATA - Data processing          _   DFHSOCK - Secure Sockets
 _   DFHDEST - Transient Data           /   DFHSTOR - Storage Control
 _   DFHDOCH - Document Handler         _   DFHSYNC - Syncpoint processing
 _   DFHEJBS - EJB Server               /   DFHTASK - Task Control
 _   DFHFEPI - Front End (FEPI)         _   DFHTEMP - Temporary Storage
 _   DFHFILE - File Control             /   DFHTERM - Terminal Control
                                        _   DFHWEBB - Web Interface


Region Type:                        User Fields:
 _   AOR     - Application-owning     _   DBCTL   - IMS DBCTL data-owning
 _   FOR     - File-owning           _   CROSSYS - Cross-System
 _   TOR     - Terminal-owning       _   OMCICS  - OMEGAMON
 _   DB2     - DB data-owning
```

Figure 155. Select field categories

This panel displays the field categories that you can select to populate a new Report Form. The categories reflect the various ways of using and configuring your CICS systems. You can choose just the ones that you require for your reporting

Select field categories

needs. Only categories applicable to the specified CICS version are available for selection. If not specified, **650** is assumed.

Enter **/** to select the desired field categories, then press **Next** (F11) or **Exit** (F3). The fields in the selected categories, and relevant to the specified CICS version, will appear in the new Report Form.

Selecting no categories has the same effect as selecting all categories: all fields in all categories (except user fields) will appear in the new Report Form.

To limit the Report Form to fields that are relevant to particular types of CICS region (such as application-owning regions), select one or more region type. Selecting a region type excludes from the Report Form any fields that are not relevant to that region type, as defined in the sample monitoring control tables provided by CICS (in sample library SDFHSAMP members DFHMCT*x*$).

Primary Commands: The following primary commands are valid for this panel:

SELECT
This command selects all field categories.

RESET
This command (or **RES**) resets all field categories by clearing the selection line actions.

Specifying Report Form contents

The Report Form **Edit** panel is displayed when, from the Report Forms panel, you do either of the following:

- Request a new Report Form.

  Use the **NEW** command, select **File->New** in the action bar, or press **New** (F6). Specify the new Report Form options then press Enter.

- Select an existing Report Form.

  Enter line action **E** or **S** against a Report Form, or use the **SELECT** command.

Alternatively, you can enter line action **V** to display the Report Form View panel. Viewing a Report Form works in every way like Edit except there is no exclusive hold on the data and changes cannot be saved. However you can use **SAVEAS.**

There are three different Report Form panels because the contents and processing differs slightly for the different Report Form types: **LIST, LISTX,** and **SUMMARY.** However, most of their operation is similar.

LIST Report Form

The LIST Report Form can be used to tailor the format and content of the following reports and extracts:

    Performance List report
    Cross-System Work report
    Export Extract
    List HDB reports

The Report Form defines the fields to be included, the order of the columns, and a title for the report.

The Report Form panel has two views as there are too many columns of information to display in a single screen view. Scroll **Right** (F11) to toggle between the views.

When you select a Report Form to Edit or View, the first view shown in Figure 156 is displayed by default.

```
   File  Edit  Confirm  Upgrade  Options  Help
 ------------------------------------------------------------------------------
                    EDIT LIST Report Form - SAMPLIST      Row 1 of 310 More: >
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . List Report Form_____    Version (VRM): 650

 Selection Criteria:
 _   Performance  *                                      Page width . . 132_

     Field
 /   Name +      Type        Description
 __   TRAN____    _____     Transaction identifier
 __   STYPE___    _____     Transaction start type
 __   TERM____    _____     Terminal ID
 __   USERID__    _____     User ID
 __   RSYSID__    _____     Remote System ID
 __   PROGRAM_    _____     Program name
 __   TASKNO__    _____     Transaction identification number
 __   STOP____    TIMET__     Task stop time
 __   RESPONSE    _____     Transaction response time
 __   DISPATCH    TIME___     Dispatch time
 __   CPU_____    TIME___     CPU time
 __   SUSPEND_    TIME___     Suspend time
 __   DISPWAIT    TIME___     Redispatch wait time
 __   FCWAIT__    TIME___     File I/O wait time
 __   FCAMCT__    _____     File access-method requests
 __   IRWAIT__    TIME___     MRO link wait time
 __   EOR_____    _____     --------------- End of Report ---------------
 __   EOX_____    _____     --------------- End of Extract ---------------
 __   ABCODEC_    _____     Current ABEND code
  F1=Help      F3=Exit      F4=Prompt    F5=Rfind    F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 156. LIST Report Form (with Default Form) (Part 1 of 2)

LIST Report Form

```
   File  Edit  Confirm  Upgrade Options  Help
 -------------------------------------------------------------------------------
                      EDIT LIST Report Form - SAMPLIST       Row 1 of 310 More: >
 Command ===> _____       Scroll ===> PAGE

 Description  . . . . List Report Form_____   Version (VRM): 650

 Title  . . First half title_____
            Second half title_____

    Field                                                 - User Field -
 /  Name       Type     Length  Dictionary Definition    Offset  Length
 __  TRAN____   _____     4  TRAN      DFHTASK C001     ___     ___
 __  STYPE___   _____     2  TTYPE     DFHTASK C004     ___     ___
 __  TERM____   _____     4  TERM      DFHTERM C002     ___     ___
 __  USERID__   _____     8  USERID    DFHCICS C089     ___     ___
 __  RSYSID__   _____     4  RSYSID    DFHCICS C130     ___     ___
 __  PROGRAM_   _____     8  PGMNAME   DFHPROG C071     ___     ___
 __  TASKNO__   _____     8  TRANNUM   DFHTASK P031     ___     ___
 __  STOP____   TIMET__    12  STOP      DFHCICS T006     ___     ___
 __  RESPONSE   _____     8  RESP      CICSPA  D901     ___     ___
 __  DISPATCH   TIME___     8  USRDISPT  DFHTASK S007     ___     ___
 __  CPU_____   TIME___     8  USRCPUT   DFHTASK S008     ___     ___
 __  SUSPEND_   TIME___     8  SUSPTIME  DFHTASK S014     ___     ___
 __  DISPWAIT   TIME___     8  DISPWTT   DFHTASK S102     ___     ___
 __  FCWAIT__   TIME___     8  FCIOWTT   DFHFILE S063     ___     ___
 __  FCAMCT__   _____     8  FCAMCT    DFHFILE A070     ___     ___
 __  IRWAIT__   TIME___     8  IRIOWTT   DFHTERM S100     ___     ___
 __  EOR_____   _____                                   ___     ___
 __  EOX_____   _____                                   ___     ___
 __  ABCODEC_   _____     4  ABCODEC   DFHPROG C114     ___     ___
  F1=Help     F3=Exit      F4=Prompt   F5=Rfind    F7=Backward  F8=Forward
 F10=Actions F11=Right    F12=Cancel
```

Figure 156. LIST Report Form (with Default Form) (Part 2 of 2)

The LIST Report Form consists of the following:

Form Description
> Up to 32 characters of text to describe the purpose of the Report Form. This description is shown on the Report Forms panel to help you identify the Forms in the list. It is initially set to **List Report Form.**

Version (VRM)
> This identifies the CICS release that this Report Form was created for. It determines which CMF fields are available for selection in this Report Form.

Selection Criteria
> Optionally, you can specify Selection Criteria to filter the data on time periods and field values to restrict the reporting to only the data that is of interest to you.
>
> When a report specifies a Report Form and both have Selection Criteria specified, records must match both criteria to be included in the report.

Line Actions: The available line actions are:

/ Display the selection list of line actions.

S Select (edit) the Selection Criteria. See "Specifying Selection Criteria" on page 176 for information on specifying Selection Criteria.

A Activate the Selection Criteria so they will be included for reporting.

Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here will not be used in reporting.

Page Width

Page width of the report, in the range 80 to 8000. The default is **132.**

When you increase the page width, you can include more fields in the report. Move EOR down the list or move fields above EOR to include the fields of interest. CICS PA automatically adjusts the EOR marker when the fields overflow the page width.

When you view the report output (using SDSF), scroll right to see the additional fields. Note that when you print the report, data that exceeds the maximum printer page width will be truncated.

Title   Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on the report takes precedence.

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

The title is ignored for extracts.

Field rows

One row for each field. The order of the fields in the Report Form dictates the order of the columns in the report or extract. The fields have the following attributes: Field Name, Type (clock and time stamp fields only), Description, Length, Dictionary Definition, User Field Offset and Length (character user fields only).

Field Name

The CICS PA field name. For CICS CMF fields, this is usually the Informal name or similar. The names for user fields are derived from the MCT. Use line action **S** or **Prompt** (F4) to select from a list of fields applicable to this Form type and CICS version.

EOR and EOX are special entries:

- **EOR** is managed by CICS PA. It signals the end of the report line. The fields listed above EOR fit on the report line and are included in the report in the same order as they appear in the list. Those below EOR will not be reported and are ignored.

  CICS PA automatically sets EOR when the Report Form is created and resets it if necessary when the Form is changed to ensure that the maximum page width of 132 is not exceeded. In positioning EOR, CICS PA allows for one blank separator between each field.

  To produce a report line shorter than 132, either move EOR towards the top of the Form, delete unwanted fields, or move them below EOR.

- **EOX** signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. EOX is

initially positioned just below EOR. Fields above EOX are included in the extract, those below EOX are ignored. If EOX is not specified, EOR is used.

Format Type

The presentation format of fields.

For numeric (A) fields, optionally specify one of the following:

K	Divide value by 1000, typically for count fields.
M	Divide value by 1000000, typically for count fields.
KB	Kilobytes (divide by 1024), typically for storage fields.
MB	Megabytes (divide by 1024x1024), typically for storage fields.

For clock (S) fields, you must specify either:

<u>**TIME**</u>	Accumulation of elapsed time in seconds with requested precision of 0.0001 to 0.000001. Default: TIME with PRECISION(4).
COUNT	Number of occurrences of the condition.

For time (T) fields START and STOP, you must specify one of:

<u>**TIMET**</u>	Time in the format *hh:mm:ss.thm* (default)
TIMEM	Time in the format *hh:mm*
TIMES	Time in the format *hh:mm:ss*
DATE	Date in the format *mm/dd/yyyy*
DATEISO	Date in the format *yyyy-mm-dd*
DATEM	Date in the format *mm/dd*
DATEYR	Date in the format *mm/dd/yy*

Field Description

This is a short description of the field. Enter line action **H** (Help) to see a more detailed description. See Figure 84 on page 185 for an example of the help details displayed in a pop-up window.

Length

The length of the field in the report or extract. This is used to calculate the width of the print line.

Dictionary Definition

The description of the CMF data field in the format *informalname owner xnnn* where:

- *informalname* is the CMF field name

- *owner* is the CICS component that 'owns' the field

- *x* indicates the data type:
    - **A** - 32- or 64-bit count
    - **C** - character string
    - **D** - CICS PA derived time
    - **P** - packed decimal number
    - **S** - clock (time-count)
    - **T** - STCK time stamp
    - **X** - CICS PA calculated count

- *nnn* is the field identifier

Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given an owner of 'CICSPA'. They are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

User Field Offset and Length

This is used for character user fields when only part of the field is to be reported. **Offset** is the position of the first character and **Length** is the number of characters from this position to be reported. For example, if the user field contains the value ABCDEFG, then specifying offset 1 and length 4 gives the output ABCD. Both values are required for character user fields and default to the entire field (offset 1 and maximum length).

CICS PA JCL generation translates these values to `FIELDS(CHARACTER(SUBSTR(offset,length),...`

Line Actions: The following line actions are valid on this panel:

/   Display the menu of line actions.

S   Select a field name from a list of all CMF fields appropriate to the type of Report Form and CICS release. See "Performance field selection" on page 308 for an example of the field selection panel.

I   Insert a blank row after this row for entry or selection of another field.

R   Repeat this row.

RR   Repeat a block of rows bounded by two RRs.

C   Copy this row.

CC   Copy a block of rows bounded by two CCs.

M   Move this row.

MM   Move a block of rows bounded by two MMs.

A   Move/Copy after this row.

B   Move/Copy before this row.

D   Delete this row.

DD   Delete a block of rows bounded by two DDs.

H   Field Help. Display a detailed explanation of the field. See Figure 84 on page 185 for an example of the field help panel.

Notes:

1. Line operations can span the EOR and EOX rows. CICS PA will reset EOR after the operation has completed to ensure the page width is not exceeded. Only one EOR and one EOX is retained, that closest to the top of the list. If EOX is deleted, EOR is assumed to define the length of the extract.
2. Fields can appear more than once in a Report Form with different types specified. For example: FCWAIT(TIME), FCWAIT(COUNT).
3. Deleted user fields (LIST and SUMMARY Forms) cannot be recovered.

Primary Commands: The following primary commands are valid for the LIST, LISTX, and SUMMARY Report Form panels:

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data.

To find more occurrences, use **F5** or the **RFIND** command repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** or **RFIND** to search from the top. If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

SAVE This command is only available from Edit mode and saves any changes you have made. To save any changes made in View mode, use **SAVEAS.**

Also available from **File** in the action bar.

SAVEAS formname|datasetname(formname)
This command is available from both Edit and View mode to save the contents of this Report Form under another name, either in the current data set (assumed if no data set name is provided) or in another suitable data set (if the name of a valid PDS is provided).

Also available from **File** in the action bar.

RESET
This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

CONFIRM ON|OFF
CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Report Form panel when there have been updates.

With **CONFIRM OFF,** Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the value set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.
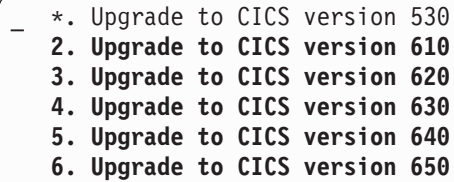
UPGRADE vrm
This command is used to upgrade the Report Form to the specified CICS version (vrm) provided it is a later release. CMF Fields for all CICS releases after the current release and up to the specified release are added to the bottom of the Form.

Also available from **Upgrade** in the action bar.

Upgrading Report Forms

Report Forms are release-dependent. When you define a new Report Form you specify the CICS System or CICS Version (VRM) so that CICS PA can initialize the Form with fields appropriate to that release. However, you can later upgrade the Report Form to a later release by using **Upgrade** in the action bar of the Report Form panels. This facility is available for all Report Form types.

```
_   *. Upgrade to CICS version 530
    2. Upgrade to CICS version 610
    3. Upgrade to CICS version 620
    4. Upgrade to CICS version 630
    5. Upgrade to CICS version 640
    6. Upgrade to CICS version 650
```

Figure 157. Upgrading your Report Form

Select **Upgrade** in the action bar or enter the **UPGRADE** command to introduce the new CMF fields of a later release of CICS into your Report Form. The new fields are inserted at the bottom of the Form as candidate fields. Upgrading does not affect the fields currently in the Form, nor does it affect the format of reports or extracts that use this Form. To then incorporate a new field into your report or extract, move it above the EOR or EOX marker respectively.

You can upgrade your Report Form to a CICS Version (VRM) that is not marked by an asterisk *****. To do this, select the VRM and press Enter. Otherwise, press Cancel to retain the Report Form at the current level.

Performance field selection

Performance Field Selection allows you to select a field name from a list of available fields for insertion into your Report Form. This is the same facility as that used when specifying Selection Criteria. For more information, refer to:

- "Field selection" on page 182
- "Select a field" on page 183
- "Performance field help" on page 185

LISTX Report Form

The LISTX Report Form can be used to tailor the format and content of the following reports and extracts:

> Performance List Extended report
> Cross-System Work report
> Export extract

The Report Form defines the fields to be included, the order of the columns, sort sequence, and a title for the report.

The Report Form panel has two views as there are too many columns of information to display in a single screen view. Scroll **Right** (F11) to toggle between the views.

When you select to Edit or View a Report Form, the first view shown in Figure 158 is displayed by default.

```
   File  Edit  Confirm  Upgrade  Options  Help
  --------------------------------------------------------------------------------
                   EDIT LISTX Report Form - XMPLISTX     Row 1 of 310 More: >
  Command ===> _____     Scroll ===> PAGE

  Description  . . . . List Extended Report Form_____   Version (VRM): 650

  Selection Criteria:
  _  Performance  *                                        Page width . . 132_

      Field
  /   Name +     S   Type     Limit     Description
  __   TRAN_____  A   _____   _____   Transaction identifier
  __   STYPE____  *   _____   _____   Transaction start type
  __   USERID__   *   _____   _____   User ID
  __   RSYSID__   *   _____   _____   Remote System ID
  __   PROGRAM_   *   _____   _____   Program name
  __   TASKNO__   *   _____   _____   Transaction identification number
  __   STOP_____  *   TIMET__  _____   Task stop time
  __   RESPONSE   *   _____   _____   Transaction response time
  __   DISPATCH   *   TIME___  _____   Dispatch time
  __   CPU_____   *   TIME___  _____   CPU time
  __   SUSPEND_   *   TIME___  _____   Suspend time
  __   DISPWAIT   *   TIME___  _____   Redispatch wait time
  __   FCWAIT__   *   TIME___  _____   File I/O wait time
  __   FCAMCT__   *   _____   _____   File access-method requests
  __   IRWAIT__   *   TIME___  _____   MRO link wait time
  __   EOR_____   _   _____   _____   ----------- End of Report ---------
  __   EOX_____   _   _____   _____   ----------- End of Extract --------
   F1=Help      F3=Exit      F4=Prompt   F5=Rfind     F7=Backward  F8=Forward
  F10=Actions  F11=Right    F12=Cancel
```

Figure 158. LISTX Report Form (with Default Form) (Part 1 of 2)

LISTX Report Form

```
   File  Edit  Confirm  Upgrade  Options  Help
 -----------------------------------------------------------------------------
                  EDIT LISTX Report Form - XMPLISTX      Row 1 of 310 More: >
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . List Extended Report Form_____   Version (VRM): 650

 Title  . . First half title_____
            Second half title_____

     Field
 /   Name +     S    Type      Limit      Length  Dictionary Definition
 __  TRAN____   A    _____   _____        4   TRAN     DFHTASK C001
 __  STYPE___   *    _____   _____        2   TTYPE    DFHTASK C004
 __  USERID__   *    _____   _____        8   USERID   DFHCICS C089
 __  RSYSID__   *    _____   _____        4   RSYSID   DFHCICS C130
 __  PROGRAM_   *    _____   _____        8   PGMNAME  DFHPROG C071
 __  TASKNO__   *    _____   _____        8   TRANNUM  DFHTASK P031
 __  STOP____   *    TIMET__  _____       12   STOP     DFHCICS T006
 __  RESPONSE   *    _____   _____        8   RESP     CICSPA  D901
 __  DISPATCH   *    TIME___  _____        8   USRDISPT DFHTASK S007
 __  CPU_____   *    TIME___  _____        8   USRCPUT  DFHTASK S008
 __  SUSPEND_   *    TIME___  _____        8   SUSPTIME DFHTASK S014
 __  DISPWAIT   *    TIME___  _____        8   DISPWTT  DFHTASK S102
 __  FCWAIT__   *    TIME___  _____        8   FCIOWTT  DFHFILE S063
 __  FCAMCT__   *    _____   _____        8   FCAMCT   DFHFILE A070
 __  IRWAIT__   *    TIME___  _____        8   IRIOWTT  DFHTERM S100
 __  EOR_____   _    _____   _____
 __  EOX_____   _    _____   _____
   F1=Help     F3=Exit     F4=Prompt   F5=Rfind    F7=Backward  F8=Forward
  F10=Actions F11=Right   F12=Cancel
```

Figure 158. LISTX Report Form (with Default Form) (Part 2 of 2)

The LISTX Report Form consists of the following:

Form Description
> Up to 32 characters of text to describe the purpose of the Report Form.
> This description is shown on the Report Forms panel to help you identify
> the Forms in the list. It is initially set to **List Extended Report Form.**

Version (VRM)
> This identifies the CICS release that this Report Form was created for. It
> determines which CMF fields are available for selection in this Report Form.

Selection Criteria
> Optionally, you can specify Selection Criteria to filter the data on time
> periods and field values to restrict the reporting to only the data that is of
> interest to you.
>
> When a report specifies a Report Form and both have Selection Criteria
> specified, records must match both criteria to be included in the report.

Line Actions: The available line actions are:

/   Display the selection list of line actions.

S   Select (edit) the Selection Criteria. See "Specifying Selection
Criteria" on page 176 for information on specifying Selection
Criteria.

A   Activate the Selection Criteria so they will be included for reporting.

Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here will not be used in reporting.

Page Width

Page width of the report, in the range 80 to 8000. The default is **132.**

When you increase the page width, you can include more fields in the report. Move EOR down the list or move fields above EOR to include the fields of interest. CICS PA automatically adjusts the EOR marker when the fields overflow the page width.

When you view the report output (using SDSF), scroll right to see the additional fields. Note that when you print the report, data that exceeds the maximum printer page width will be truncated.

Title   Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on the report takes precedence.

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

The title is ignored for extracts.

Field rows

One row for each field. The order of the fields in the rows dictates the order of the columns in the report or extract. The fields have the following attributes: Name, Sort Sequence (only certain fields), Type (only clock and time stamp fields), Limit (only one of the sort fields), Description, Length, Dictionary Definition.

Field Name

The CICS PA field name for fields defined in the CMF Dictionary. Use line action **S** to select from a list of fields applicable to this Form type and CICS version.

EOR and EOX are special entries:

- **EOR** is managed by CICS PA. It signals the end of the report line. The fields listed above EOR fit on the report line and are included in the report in the same order as they appear in the list. Those below EOR will not be reported and are ignored.

  CICS PA automatically sets EOR when the Report Form is created and resets it if necessary when the Form is changed to ensure that the maximum page width of 132 is not exceeded. In positioning EOR, CICS PA allows for one blank separator between each field.

  To produce a report line shorter than 132, either move EOR towards the top of the Form, delete unwanted fields, or move them below EOR.

- **EOX** signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. EOX is initially placed just below EOR. Fields above EOX are included in the extract, those below are ignored. If EOX is not specified, EOR is used.

LISTX Report Form

S (Sort Sequence)

Specify a sort sequence of **A** (ascending) or **D** (descending) for one to three fields listed in the order of the desired sort precedence. At least one sort field must be specified. The default is **TRAN ascending.**

Candidate sort fields are indicated by an asterisk *****. To change a candidate sort field to an active sort field, move it above EOR and overtype the asterisk with an **A** or **D.** To remove a sort field, either move it below EOR, delete it, or overtype the sort sequence with a blank or asterisk.

For one sort field only, you can specify a limit on the number of records to process at that level in the sort order.

Format Type

The presentation format of fields.

For numeric (A) fields, optionally specify one of the following:

K	Divide value by 1000, typically for count fields.
M	Divide value by 1000000, typically for count fields.
KB	Kilobytes (divide by 1024), typically for storage fields.
MB	Megabytes (divide by 1024x1024), typically for storage fields.

For clock (S) fields, you must specify either:

<u>TIME</u>	Accumulation of elapsed time in seconds with requested precision of 0.0001 to 0.000001. Default: TIME with PRECISION(4).
COUNT	Number of occurrences of the condition.

For time (T) fields START and STOP, you must specify one of:

TIMET	Time in the format *hh:mm:ss.thm* (default)
TIMEM	Time in the format *hh:mm*
TIMES	Time in the format *hh:mm:ss*
DATE	Date in the format *mm/dd/yyyy*
DATEISO	Date in the format *yyyy-mm-dd*
DATEM	Date in the format *mm/dd*
DATEYR	Date in the format *mm/dd/yy*

Limit For one sort field only, you can specify a limit on the number of records to process at that level in the sort order.

For example, to produce a report of the worst 10 response times for each transaction id, specify the following at the top of the Form:

```
   File  Edit  Confirm  Upgrade  Options  Help
 ---------------------------------------------------------------------------
                    EDIT LISTX Report Form - SAMPLX         Row 1 to 6 of 6
 Command ===> _____  Scroll ===> PAGE

 Description  . . . . List Extended Report Form_____   Version (VRM): 650

 Selection Criteria:
  _  Performance  *                                      Page width . . 120_

     Field
 /  Name +      S    Type     Limit     Description
 __  TRAN_____  A    _____   _____  Transaction identifier
 __  RESPONSE   D    _____   10_____  Transaction response time
 __  CPU_____   *    TIME___  _____  CPU time
 __  PROGRAM_   *    _____   _____  Program name
 __  EOR_____   _    _____   _____  ----------- End of Report ---------
 __  APPLID__   *    _____   _____  CICS Generic APPLID
```

Figure 159. LISTX Report Form (showing Sort Sequence and Limit)

Field Description

> This is a short description of the field. Enter line action **H** (Help) for a more detailed description as shown in the example in Figure 84 on page 185.

Length

> The length of the field in the report or extract. This is used to calculate the width of the report line.

Dictionary Definition

> The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page 304 for further information.

Line Actions: For the list of valid line actions for the LISTX Report Form panel, see page 305.

Primary Commands: For the list of valid primary commands for the LISTX Report Form panel, see page 305.

SUMMARY Report Form

The SUMMARY Report Form defines the format and content of the Performance Summary Report and Export Extract.

The Report Form defines the fields to be included, the order of the columns, sort sequence, statistical functions, and a title for the report.

The Report Form panel has three views as there are too many columns of information to display in a single screen view. Scroll **Right** (F11) to toggle between the views.

When you select to Edit or View a Report Form, the first view shown in Figure 160 on page 314 is displayed by default. This first view displays field descriptions. The second view displays data dictionary information for each field. The third view is relevant only when you use the RNG (Range) function.

SUMMARY Report Form

```
   File  Edit  Confirm  Upgrade  Options  Help
 -------------------------------------------------------------------------------
                  EDIT SUMMARY Report Form - SAMPSUMM      Row 1 of 285 More: >
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Summary Report Form_____  Version (VRM): 650

 Selection Criteria:
   _   Performance                                        Page width . . 132_

     Field
 /   Name +   Sort  Type    Fn   Description
 __   TRAN____  K  A  _____ ___   Transaction identifier
 __   TASKCNT_  _  _____ ___   Total Task count
 __   RESPONSE  _  _____ AVE   Transaction response time
 __   RESPONSE  _  _____ MAX   Transaction response time
 __   DISPATCH  _  TIME___ AVE   Dispatch time
 __   CPU_____  _  TIME___ AVE   CPU time
 __   SUSPEND_  _  TIME___ AVE   Suspend time
 __   SUSPEND_  _  TIME___ MAX   Suspend time
 __   DISPWAIT  _  TIME___ AVE   Redispatch wait time
 __   FCWAIT__  _  TIME___ AVE   File I/O wait time
 __   FCAMCT__  _  _____ AVE   File access-method requests
  F1=Help      F3=Exit      F4=Prompt    F5=Rfind     F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 160. SUMMARY Report Form (with Default Form) (Part 1 of 3)

```
   File  Edit  Confirm  Upgrade  Options  Help
 -------------------------------------------------------------------------------
                  EDIT SUMMARY Report Form - SAMPSUMM      Row 1 of 285 More: >
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Summary Report Form_____  Version (VRM): 650

 Title  . . First half title_____
            Second half title_____

     Field                                              - User Field -
 /   Name +   Sort  Type    Fn    Length  Dictionary Definition  Offset  Length
 __   TRAN____  K  A  _____ ___        8  TRAN     DFHTASK C001    ___    ___
 __   TASKCNT_  _  _____ ___        8  TASKCNT  CICSPA  X902    ___    ___
 __   RESPONSE  _  _____ AVE        8  RESP     CICSPA  D901    ___    ___
 __   RESPONSE  _  _____ MAX        8  RESP     CICSPA  D901    ___    ___
 __   DISPATCH  _  TIME___ AVE        8  USRDISPT DFHTASK S007    ___    ___
 __   CPU_____  _  TIME___ AVE        8  USRCPUT  DFHTASK S008    ___    ___
 __   SUSPEND_  _  TIME___ AVE        8  SUSPTIME DFHTASK S014    ___    ___
 __   SUSPEND_  _  TIME___ MAX        8  SUSPTIME DFHTASK S014    ___    ___
 __   DISPWAIT  _  TIME___ AVE        8  DISPWTT  DFHTASK S102    ___    ___
 __   FCWAIT__  _  TIME___ AVE        8  FCIOWTT  DFHFILE S063    ___    ___
 __   FCAMCT__  _  _____ AVE        8  FCAMCT   DFHFILE A070    ___    ___
  F1=Help      F3=Exit      F4=Prompt    F5=Rfind     F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 160. SUMMARY Report Form (with Default Form) (Part 2 of 3)

```
   File  Edit  Confirm  Upgrade  Options  Help
 ------------------------------------------------------------------------------
                   EDIT SUMMARY Report Form - SAMPSUMM     Row 1 of 285 More: >
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Summary Report Form_____  Version (VRM): 650

 Selection Criteria:
   _  Performance                                         Page width . . 132_

    Field    Sort                --------- Range ------------
 /  Name +   K  O  Type    Fn   From        To        Report
 __ TRAN____ K  A  _____  ___  _____  _____  _____
 __ TASKCNT_    _  _____       _____  _____  _____
 __ RESPONSE    _  _____  AVE  _____  _____  _____
 __ RESPONSE    _  _____  MAX  _____  _____  _____
 __ DISPATCH    _  TIME___ AVE  _____  _____  _____
 __ CPU_____    _  TIME___ AVE  _____  _____  _____
 __ SUSPEND_    _  TIME___ AVE  _____  _____  _____
 __ SUSPEND_    _  TIME___ MAX  _____  _____  _____
 __ DISPWAIT    _  TIME___ AVE  _____  _____  _____
 __ FCWAIT__    _  TIME___ AVE  _____  _____  _____
 __ FCAMCT__    _  _____  AVE  _____  _____  _____
  F1=Help      F3=Exit      F4=Prompt   F5=Rfind    F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 160. SUMMARY Report Form (with Default Form) (Part 3 of 3)

The SUMMARY Report Form consists of the following:

Form Description
Up to 32 characters of text to describe the purpose of the Report Form. This description is shown on the Report Forms panel to help you identify the Forms in the list. It is initially set to **Summary Report Form.**

Version (VRM)
This identifies the CICS release that this Report Form was created for. It determines which CMF fields are available for selection in this Report Form.

Selection Criteria
Optionally, you can specify Selection Criteria to filter the data on time periods and field values to restrict the reporting to only the data that is of interest to you.

When a report specifies a Report Form and both have Selection Criteria specified, records must match both criteria to be included in the report.

Line Actions: The available line actions are:

/   Display the selection list of line actions.

S   Select (edit) the Selection Criteria. See "Specifying Selection Criteria" on page 176 for information on specifying Selection Criteria.

A   Activate the Selection Criteria so they will be included for reporting. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here will not be used in reporting.

SUMMARY Report Form

Page Width

Page width of the report, in the range 80 to 8000. The default is **132.**

When you increase the page width, you can include more fields in the report. Move EOR down the list or move fields above EOR to include the fields of interest. CICS PA automatically adjusts the EOR marker when the fields overflow the page width.

When you view the report output (using SDSF), scroll right to see the additional fields. Note that when you print the report, data that exceeds the maximum printer page width will be truncated.

Title   Title of the report. Specify up to 128 characters of text to describe the report. CICS PA concatenates the two lines of 64 exactly as entered to make one line which prints at the top of each page of the report below the heading. The default is blank (no title).

If the report uses a Report Form, and a title is specified on both, the title on the report takes precedence.

This option generates the `TITLE1('left-half')` and `TITLE2('right-half')` operands.

The title is ignored for extracts.

Field rows

One row for each field. The order of the fields in the rows dictates the order of the columns in the report or extract. The fields have the following attributes: Name, Sort Sequence (only certain fields), Type (clock and time stamp fields only), Statistical Function (clock and count fields only), Description, Length, Dictionary Definition, Offset and Length (character user fields only).

Field Name

The CICS PA field name for fields defined in the CMF Dictionary. The names for user fields are derived from the MCT. Use line action **S** to select from a list of fields applicable to this Form type and CICS version.

EOR and EOX are special entries:

- **EOR** is managed by CICS PA. It signals the end of the report line. The fields listed above EOR fit on the report line and are included in the report in the same order as they appear in the list. Those below EOR will not be reported and are ignored.

  CICS PA automatically sets EOR when the Report Form is created and resets it if necessary when the Form is changed to ensure that the maximum page width of 132 is not exceeded. In positioning EOR, CICS PA allows for one blank separator between each field.

  To produce a report line shorter than 132, either move EOR towards the top of the Form, delete unwanted fields, or move them below EOR.

- **EOX** signals the end of the extract record. There are no restrictions on record length so EOX can be positioned anywhere in the list. EOX is initially positioned just below EOR. Fields above EOX are included in the extract, those below are ignored. If EOX is not specified, EOR is used.

Sort Sequence

SUMMARY Sort fields are identified by **K** in the **SORT K** column. The report can be ordered in ascending or descending sequence, as specified in the **SORT O** column, **A** and **D** respectively.

Sort fields identify the grouping required for summarization, and can be START and STOP time, or any character field, including character user fields.

A Sort Order of ***** (asterisk) identifies a candidate sort field, and is ignored for reporting purposes.

To activate a candidate sort field, move it to the top of the Form and set Sort Sequence to A or D.

Key fields above EOR must appear first in the list of fields. The only fields that can appear ahead of a key field are TASKCNT or TASKTCNT. Key fields below EOR are ignored. Up to 8 key fields can be specified, and at least one must be specified. The order of the key fields in the list defines the sort and summarization precedence, with the first key field being the major sort field.

Alternate Sequencing

In addition to the Sort Key fields, one numeric field can be selected as Ascending or Descending to activate Alternate Sequencing. This will change the order of report lines from Sort Key to numeric field sequence. For example, specify Alternate Sequencing of D for RESPONSE time to see the transactions with the highest response time at the top of the report. Note that grouping by Sort Key for summarization remains unaffected.

Format Type

The presentation format of fields.

For numeric (A) fields, optionally specify one of the following:

K	Divide value by 1000, typically for count fields.
M	Divide value by 1000000, typically for count fields.
KB	Kilobytes (divide by 1024), typically for storage fields.
MB	Megabytes (divide by 1024x1024), typically for storage fields.

For clock (S) fields, you must specify either:

<u>TIME</u>	Accumulation of elapsed time in seconds with requested precision of 0.0001 to 0.000001. Default: TIME with PRECISION(4).
COUNT	Number of occurrences of the condition.

For time (T) fields START and STOP, you must specify one of:

TIMET	Time in the format *hh:mm:ss.thm*
TIMEM	Time in the format *hh:mm*
<u>TIMES</u>	Time in the format *hh:mm:ss* (default)
<u>DATE</u>	Date in the format *mm/dd/yyyy*
DATEISO	Date in the format *yyyy-mm-dd*
DATEM	Date in the format *mm/dd*
DATEYR	Date in the format *mm/dd/yy*
DATETIM	Date and Time in the format *yyyy-mm-dd hh:mm:ss*

Fn (Function)

The required statistical representation of clock and count fields. The valid functions are:

<u>AVE</u>	Average value (this is the default).
<u>DEV</u>	Standard deviation.
MAX	Maximum value.

MIN Minimum value.

TOT Total.

nn Peak percentile nn% (for example, 85%).

RNG Range. This function calculates the number of tasks where the value of a field falls within a specified range or matches a single value. You can display the result in the report either as a count or as a percentage of tasks. You can use this function to answer questions such as: How many transactions had a response time between 0.4 and 0.6 seconds? What percentage of transactions had a response time of 1 second or longer?

To specify the parameters for this function, press the Right (F11) key until the Range columns scroll into view:

```
───────── Range ──────────
From        To       Report
─────────  ───────  ──────
```

Tip: If you type RNG in the Fn column and then press Enter, the panel scrolls the Range columns into view for you.

You can only enter values in the Range columns if you have entered the RNG function in the Fn column.

Specifying the RNG function with a Report value of COUNT (the default value) generates the `RNGCOUNT()` operand; a Report value of PERCENT generates the `RNGPERCENT()` operand.

From and **To** (RNG function only)

Specify a range of values or a single value:

- To specify a single value, in the From column enter an equal sign (=) followed immediately by the value you want to match (for example, =0). Leave the To column blank.

- To specify a range with only an upper limit or a lower limit, in the From column enter one of the following comparison operators:

  > >= < <=

  followed immediately by the limit value (for example, >1.0). Leave the To column blank.

- To specify a range with upper and lower limits, enter the lower limit value in the From column and the upper limit value in the To column, with no comparison operators. To fall within the range, a field value must be greater than or equal to the lower limit, and less than the upper limit:

  lower limit <= field value < upper limit

For time fields, values with a decimal place (such as 1.0) are interpreted as seconds; integers (such as 1000) are interpreted as milliseconds.

Report (RNG function only)

Specifies whether to display the result of the RNG function in the report as a count or as a percentage. Valid values are COUNT and PERCENT. If you leave this column blank, the default value is COUNT.

Tips:

1. If you type C or P and then press Enter, the panel automatically completes the value for you.

2. COUNT and PERCENT generate identical column headings. To distinguish between columns for percentages and counts, check the column values under the headings: percentages appear with a decimal point, whereas counts are integers, and hence have no decimal point.

Field Description

> This is a short description of the field. Enter line action **H** (Help) for a more detailed description as shown in the example in Figure 84 on page 185.

Length

> The length of the field in the report or extract. This is used to calculate the width of the print line.

Dictionary Definition

> The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page 304 for further information.

User Field Offset and Length

> For character user fields when only part of the field is to be reported. **Offset** is the position of the first character and **Length** is the number of characters (1-8) to be reported. For example, if the user field contains the value ABCDEFG, then specifying offset 4 and length 3 gives the output DEF. Both values are required for character user fields and default to offset 1 and maximum field length, limited to eight characters for the Performance Summary report.

> CICS PA JCL generation translates these values to
> FIELDS(CHARACTER(SUBSTR(offset,length),...

```
   File  Edit  Confirm  Upgrade  Options  Help
 ------------------------------------------------------------------------------
                 EDIT SUMMARY Report Form - SUMMUFLD    Row 182 to 236 of 236
 Command ===> _____ Scroll ===> PAGE

 Description  . . . . Summary Report Form_____   Version (VRM): 650

 Selection Criteria:
  _  Performance                                      Page width . . 132_

     Field
 /  Name +   Sort  Type    Fn   Description
 __  WBTOTAL_   _   _____  AVE  Web Total requests
 __  CLOCK1__   _   TIME___ AVE  User field: CMF ID=USERNM1  S001
      . . .
 __  FIELD1__ K  *  _____ ___  User field: CMF ID=USERNM2  C001
 ******************************* End of list ********************************
```

Figure 161. SUMMARY Report Form (with User Fields) (Part 1 of 2)

SUMMARY Report Form

```
   File  Edit  Confirm  Upgrade  Options  Help
  ------------------------------------------------------------------------------
                  EDIT SUMMARY Report Form - SUMMUFLD    Row 182 to 236 of 236
  Command ===> _____ Scroll ===> PAGE

  Description  . . . . Summary Report Form_____  Version (VRM): 650

  Title  . . First half title_____
             Second half title_____

     Field                                              - User Field -
  /  Name +   Sort  Type   Fn    Length  Dictionary Definition  Offset  Length
  __  WBTOTAL_   _  _____ AVE      8  WBTOTWCT DFHWEBB A235    ___     ___
  __  CLOCK1__   _  TIME___ AVE      8  CLOCK1   USERNM1 S001    ___     ___
      .  .  .
  __  FIELD1__ K  *  _____ ___     12  FIELD1   USERNM2 C001    1__     8__
  ******************************** End of list ********************************
```

Figure 161. SUMMARY Report Form (with User Fields) (Part 2 of 2)

Line Actions: For the list of valid line actions for the SUMMARY Report Form panel, see page 305.

Primary Commands: For the list of valid primary commands for the SUMMARY Report Form panel, see page 305.

Chapter 10. Object Lists

An Object List defines a list of field values that can be used when specifying Selection Criteria for filtering the data for your reports and extracts. A typical use might be to define all the transaction IDs that belong to a particular application system. Object Lists enable you to define a group of related values once, then use it in many reports by simply specifying the name of the Object List in your Selection Criteria. This avoids duplicating the same list of values in different reports.

For example, instead of specifying Select Statements that include transactions B001,B002,B003,..., you pre-define an Object List called BTRANS that has values B001,B002,B003,... Now when you specify the Select Statement, you simply specify BTRANS to include those transactions.

The one Object List must only include values of the same type. They can be one of the following data types:

- Character field values. For example, Transaction IDs or User IDs
- Elapsed time ranges. For example, Response time from 100 to 200 milliseconds
- Count ranges. For example, File Control request count from 10 to 20

Maintaining Object Lists

To display the list of Object Lists:

1. Use the **Options** menu on the action bar to nominate the Object Lists data set (if one has not yet been nominated, or you wish to change the data set).
2. Select option 4 **Object Lists** from the CICS PA Primary Option Menu.

```
   File   Confirm   Options   Help
 ------------------------------------------------------------------------------
                               Object Lists                  Row 1 to 5 of 5
 Command ===> _____  Scroll ===> ____

 Object Lists Data Set  . . : xxxx.CICSPA.OBJL

  /    Name                   Description                Changed        ID
  _   FINANCE    Finance Transactions               2005/01/03 12:27 JCH02
  _   FINRESP    Finance Transaction Response Time  2004/12/27 09:00 MKR08
  _   HQTERMS    Terminals at headquarters          2005/01/02 08:57 DAM13
  _   HQUSERS    Users at headquarters              2005/01/05 10:49 SEC22
  _   STOCK      Stock Transactions                 2005/01/05 16:57 DOC17
 ******************************* End of list ********************************
```

Figure 162. Object Lists

This panel lists all the Object Lists in the current Object Lists data set and allows you to select one at a time to view or modify.

The Object Lists are listed with the following user-defined attributes:

Name 1-8 character name in ISPF member name format, used to uniquely identify the Object List within the Object Lists data set. By default, the panel is sorted on the Name field.

Description
> Free format text up to 32 characters that describes the contents and purpose of the Object List.

In addition, the Object Lists are listed with the following system-generated attributes:

Changed
> Date and time when last updated.

ID   The userid that last updated the Object List.

Line Actions: The following line actions can be entered against an Object List:

/   Display the menu of line actions.
E   Edit the Object List.
S   Select the Object List (same as Edit).
V   View the Object List. This looks like the Edit panel but has no 'hold' on the data and has no Save capability. SaveAs is available.
D   Delete the Object List.
R   Rename the Object List.

Primary Commands: The following primary commands are valid for this panel:

NEW name [MODEL dsn(modelname)]
> This command creates a new Object List. If all required parameters are specified, the Edit panel for the new Object List is displayed. Otherwise, the New Object List window is displayed where you specify the name of the new Object List and optionally the name of an existing Object List to be used as a model. If the model is in the current Object Lists data set, specify just the name of the Object List. If it is in another data set, specify the name of the data set and the Object List in the format **datasetname(modelname).**

> Also available from **File** in the action bar.

> See "Creating new Object Lists" on page 323 for information on how to proceed.

SELECT name
> This command (or **S**) selects the specified Object List for editing. If the Object List does not exist, it is created as if the **NEW** command was used.

> Also available from **File** in the action bar.

SORT Name|Description|Changed|Id
> This command sorts the list of Object Lists on one or two columns. The default sort field is **Name.** The sort disregards upper and lower case, and is ascending for all but the Changed column. The sort order is retained only until Exit or another SORT command is issued.

LOCATE string
> This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

CONFIRM ON|OFF
> **CONFIRM ON** (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Delete an Object List.

With **CONFIRM OFF,** Delete requests are actioned immediately. Deleted Object Lists cannot be reinstated.

This command changes the setting only for the current invocation of the Object Lists panel. On exit, it reverts to the default set by **Delete Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

Creating new Object Lists

To create a new Object List, do either of the following:

- In the command line, enter **NEW** followed by the name of the new Object List and initialization details using the following syntax:

```
►►──NEW──newname─────────────────────────────────────────────────────►◄
                  └─MODEL──┬─modelname──────────────┬─┘
                          └─datasetname(modelname)─┘
```

- Select **File** from the action bar, then choose **New.** A pop-up dialog window is displayed as shown in Figure 163.

```
                      New Object List
Command ===> _____

Specify the name of the new Object List and optional model.

Name  .  .  .  ASSETS__

Model  .  .  STOCK_____
```

Figure 163. Specifying a New Object List

This panel allows you to create a new Object List. You must give the new Object List a name. Optionally, you can model it on an existing Object List, otherwise it will be created empty with no Object Lists defined.

You can bypass this panel by specifying all required details on the **NEW** command.

Name The name of the new Object List. A 1-8 character name in ISPF member name format. The name must be unique within the Object Lists data set.

Model

You can specify the name of an existing Object List as a model so that your new Object List will be initialized with the same contents as the model. If the model is in the current Object Lists data set, specify just the name of the Object List. If it is in another data set, specify both the data set name and the Object List name in the format *datasetname(modelname).*

When you have specified the required details, press Enter to create the Object List.

Specifying values in Object Lists

The Object List Edit panel is displayed when, from the Object Lists panel, you do either of the following:

- Request a new Object List.

  Use the **NEW** command or select **File->New** in the action bar.

- Select an existing Object List.

  Enter line action **E** or **S** against an Object List or use the **SELECT** command.

Alternatively, you can enter line action **V** to display the Object List View panel. Viewing an Object List works in every way like Edit except there is no exclusive hold on the data and changes cannot be saved. However you can use **SAVEAS.**

```
   File  Edit  Confirm  Options  Help
 ------------------------------------------------------------------------------
                        EDIT Object List — BILLING         Row 1 to 4 of 4
 Command ===> _____  Scroll ===> PAGE

 Description  . . . . Billing Transactions_____

 Specify the Object List values:

 /  1st Value    2nd Value    Sublist
 _  BIL1_____    _____    _____
 _  BIL2_____    _____    _____
 _  %TRA*____    _____    _____
 _  _____    _____    _____
 ****************************** End of list *******************************
```

Figure 164. Specifying Values for Character Fields in an Object List

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------------
                        EDIT Object List — BILRESP         Row 1 to 3 of 3
 Command ===> _____  Scroll ===> PAGE

 Description  . . . . Billing Transact'n Response Time

 Specify the Object List values:

 /  1st Value    2nd Value    Sublist
 _  100_____    200_____    _____
 _  _____    _____    B1RESP__
 _  _____    _____    B2RESP__
 ****************************** End of list *******************************
```

Figure 165. Specifying Values for Numeric Fields in an Object List

Use this panel to specify values in an Object List. The Object List can then be 'reused' many times in **Selection Criteria** in Report Sets.

You can specify any number of values in an Object List. You can also specify any number of Object Lists as sublists to form a meaningful hierarchical grouping of values.

The order of entries in the list is of no consequence to CICS PA reporting.

You must specify separate Object Lists for character field values and numeric field values:

- For a **character field value** you can specify up to eight characters of free text entered in the **1st Value** column. Masking characters **%** and ***** are allowed. Or in the **Sublist** column, specify the name of another Object List containing character values. Character field values are typically names. For example, for USERID, TRAN, or PROGRAM fields. There is no validation by the dialog of Object List character field values. However, at run time they are validated against the fields in the Selection Criteria. If the value length is shorter than the field length, it is padded to the right. If the value length is longer than the field length, a command error occurs.

- For a **numeric field value** you can specify an integer in the range 0 to 999999999. Enter single values in the **1st Value** column. For value ranges (spans), enter the 'From' value as the **1st Value** and the 'To' value as the **2nd Value.** Masking is not supported. Or in the **Sublist** column, specify the name of another Object List containing numeric values. Numeric values are for Decimal, Count, or Clock field types. For example, CPU, RESPONSE, TASKNO, FCAMCT, DISPWAIT fields.

  Note: A Clock type field has two parts: an elapsed time in units of thousandths of a second, and a count of the number of occurrences of the condition. Integer values are appropriate for both parts.

The field lengths and formats are available in the Performance Select Statement, where Object Lists are used.

The Object List panel consists of the following:

Description
Up to 32 characters of text to describe the purpose of the Object List. This description is shown on the Object Lists panel to help you distinguish between the Object Lists displayed. It is initially set to **CICS PA Object List.**

1st Value
A field value.

- If this is an Object List for **character field values,** the value can be up to eight characters of any nature. Masking characters **%** and ***** are allowed. The percent **%** is for a single character substitution and the asterisk ***** is for many or none. For example, you might specify **%%T*** to select all programs which have T as the third character of their name. LETTERS, PETE, KAT, and KAT99 match this pattern.

- If this is an Object List for **numeric field values** for Decimal, Count, or Clock type fields, the value can be up to nine digits. The 1st value represents a single value if the 2nd value is blank, otherwise it represents the 'From' value in a range (span). Masking is not supported for numeric fields.

2nd Value
The 'To' value for a range (span) of numeric values for Decimal, Count, or Clock type fields. The value can be up to nine digits.

For character type fields, this value must be blank as value ranges are not supported.

Sublist
The name of an Object List in the current Object Lists data set. The values

in the sublist are inserted at JCL generation time. An Object List and its sublists must contain values for the same type of field, either all character type or all numeric type.

This facility enables reuse of Object Lists and allows you to build up a hierarchy of lists of related values.

When CICS PA generates the Report Set JCL, the values in the sublist are listed in the **SELECT** statements along with the explicitly specified values. The order in which the values are listed in the SELECT statement is the same order as they are specified on the Object List panel(s), however this order is of no consequence to the reporting process.

Line Actions: The following line actions are valid on this panel:

/	Display the menu of line actions
I	Insert a new row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

Primary Commands: The following primary commands are valid for this panel:

SAVE This command is only available from Edit mode and saves any changes you have made. To save any changes made in View mode, use **SAVEAS.**

Also available from **File** in the action bar.

SAVEAS objlname|datasetname(objlname)
This command is available from both Edit and View mode to save the contents of this Object List under another name, either in the current data set (assumed if no data set name is provided) or in another suitable data set (if the name of a valid PDS is provided). If you then Cancel from this panel, the contents of the current Object List remain unchanged.

Also available from **File** in the action bar.

RESET
This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

CONFIRM ON|OFF
CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Object List panel when there have been updates.

With **CONFIRM OFF,** Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the default set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

Part 4. Requesting reports using batch commands

The chapters in this part provide a description of the command language together with sample JCL to produce many of the reports and extracts.

Chapter 11. JCL for reports and extracts

The CICS PA dialog automatically generates the JCL and batch commands to produce requested reports and extracts within a Report Set using specified SMF input files. The JCL may be directly submitted, or edited before submitting. You may save the JCL in an external library to edit and submit independently of the CICS PA dialog.

Alternatively, you can setup the JCL independently of the dialog, but this bypasses the comprehensive validation provided by the dialog.

JCL generation

The following JCL is an example of the job stream for requesting reports and extracts from CICS PA. The sample library **SCPASAMP** provided with CICS PA includes JCL members to generate all the CICS PA reports and extracts. Refer to Chapter 13, "Sample library," on page 471 for a complete list of these job streams.

```
//CPASAMP  JOB (Job Accounting)
//*
//CICSPA   EXEC PGM=CPAMAIN,PARM='UPPER'
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//CMDLIB   DD  DSN=CICSPA.CMDLIB,DISP=SHR
//CPAHDBRG DD  DSN=USER.CICSPA.HDB.REGISTER,DISP=SHR
//*
//* CICS PA messages
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Files for APPLID=CICSP
//SMFIN001 DD  DSN=CICS.APPL1.FILE1,DISP=SHR
//         DD  DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
//*
//* Report output files - dynamically allocated by CICS PA,
//* or you can specify them in the JCL
//MYLIST   DD  SYSOUT=*
//*
//* Extract data sets
//CPAOXSYS DD  DSN=CICSPA.CROSSSYS.EXTRACT,
//             UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,CATLG)
//CPAOEXPT DD  DSN=CICSPA.EXPORT.EXTRACT,
//             UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,CATLG)
//CPAORSEL DD  DSN=CICSPA.RECSEL.EXTRACT,
//             UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,CATLG)
//*
```

Figure 166. JCL for generating CICS PA reports and extracts (Part 1 of 2)

JCL for reports and extracts

```
//*
//* External work files for use by reports that invoke SORT
//CPAXW001 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW002 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW003 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW004 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPAXW005 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//*
//* Sort work files
//CPASWK01 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK02 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK03 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK04 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//CPASWK05 DD  UNIT=SYSDA,SPACE=(CYL,(10,10)),DISP=(NEW,DELETE)
//SYSOUT   DD  SYSOUT=*
//*
//* Command input
//SYSIN    DD  *
* Report Set : SAMPLE
* Description: Sample CICS PA Report Set
   CICSPA  SMFSTART(2005/01/12,),
           SMFSTOP(2005/01/13,)
* Reports for APPLID=CICSP
   CICSPA  IN(SMFIN001),
           APPLID(CICSP),
       LIST(OUTPUT(MYLIST),
           SELECT(PERFORMANCE(INCL(USERID(MYID))))),
       LISTX,
       SUMMARY,
       TOTAL,
       WAITANAL,
       CROSS,
       TRANGROUP,
       BTS,
       WORKLOAD,
       LISTEXCEPTION,
       SUMEXCEPTION,
       RESUSAGE,
       DB2,
       MQ,
       LOGGER,
       GRAPH(TRANRATE,RESPONSE),
       EXPORT,
       RECSEL
       HDB(LOAD(hdbname))
/*
//* Dictionary records
//CPADICTR DD DISP=SHR,DSN=CICSPA.CICSP.DICT
//
```

Figure 166. JCL for generating CICS PA reports and extracts (Part 2 of 2)

JOB, EXEC and DD statements

The job stream to generate batch reports and extract data sets consists of the following:

JOB

>   **Job Statement Information** from the CICS PA Settings profile options.

PGM=CPAMAIN,PARM='*parameter list*'

>   Request CICS PA reporting with optional parameters:

>   **UPPER**

>   >   **UPPER** translates all report output to upper case. This parameter is generated if you specify YES for **Reports in Upper Case** in the CICS PA Settings profile options. The default is mixed case (**UPPER** not specified).

STEPLIB DD

>   This is the library containing the CICS PA modules. It is specified in **CICS PA Load Library** in the CICS PA Settings profile options.

CMDLIB DD

>   This is the optional CICS PA command library containing pre-coded batch commands which may be inserted in the SYSIN command stream using the COPY or INCLUDE command.

CPAHDBRG DD

>   This identifies the HDB Register data set. The HDB Register is a VSAM KSDS that is the repository for all definitions associated with an HDB. It is also the repository for shared system definitions. It is required for all HDB command requests, including Load, Report, Extract, and Take-up.

SYSPRINT DD

>   CICS PA message data set.
>   This DD statement defines the file used by CICS PA for its messages and run time information. It must be specified and should be checked for error messages.

SYSIN DD

>   Command input.
>   This DD statement contains the CICS PA commands.

>   The CICS PA dialog automatically builds these commands at job submission time, based on the reports and extracts activated in the Report Set.

JCL for reports and extracts

Report Output Files DD

These DD statements define the report output files. These files are specified using the **OUTPUT(ddname)** operand.

If not specified, CICS PA assigns a default DDname **xxxxnnnn** where nnnn is a sequential number **0001-9999** to uniquely identify the report, and xxxx identifies the type of report:

LIST	Performance List report
LSTX	Performance List Extended report
SUMM	Performance Summary report
TOTL	Performance Totals report
WAIT	Wait Analysis report
CROS	Cross-System Work report
TRGP	Transaction Group report
CBTS	BTS report
WKLD	Workload Activity report
XLST	Exception List report
XSUM	Exception Summary report
RESU	Transaction Resource Usage reports
DB2R	DB2 report
MQ00	WebSphere MQ report
OMEG	OMEGAMON reports
LOGR	System Logger report
GRTE	Transaction Rate graph report
GRSP	Transaction Response Time graph report
CROX	Cross-System Work Extract Recap report
EXPT	Export Extract Recap report
RSEL	Record Selection Extract Recap report
HDBL	HDB Load Recap report
LOEX	System Logger Extract Recap report

For example, if two LIST reports were requested without the OUTPUT operand specified, CICS PA writes the output to files with DDnames LIST0001 and LIST0002.

If a Report Output File is not specified in the JCL, CICS PA will dynamically allocate it with the same attributes as SYSPRINT, regardless of whether the OUTPUT operand was specified or not.

CPAOxxxx DD

Extract output data sets.

These DD statements define the Extract Data Sets. The Extract Output Files are specified using the **DDNAME(ddname)** operand. CICS PA will accept any DDname via the DDNAME operand; it need not be prefixed by CPAO. However, if the DDNAME operand is omitted, CICS PA expects that the default Extract Output DDname is specified in the JCL. Refer to Table 7 on page 335 for the default DDname for each type of Extract.

The CICS PA dialog automatically generates the DD statements at Report Set run time. When generating the JCL, CICS PA assigns a default DDname **CPAOxxnn** where nn is a sequential number **01-99** to ensure DDnames are unique, and xx indicates the type of extract data set:

XS	Cross-System Work Extract data set
EX	Export Extract or System Logger data set
RS	Record Selection Extract data set

If the extract data set is not cataloged, CICS PA uses the allocation details specified for **Extract Data Sets** in the Reporting Allocation Settings profile options. If the data set is already cataloged, CICS PA uses **DISP=MOD** or **DISP=OLD** to either append or overwrite the data set contents according to your specification on the Extract panel. Alternatively, you can use a GDG to create a new data set each time the Extract is run.

SMFINnnn DD

SMF data set.

These DD statements define the SMF data sets to be processed by CICS PA. CICSPA commands refer to these DD statements via the **INPUT** operand (see "INput" on page 353). This determines which SMF Files are processed by the reports.

The CICS PA dialog automatically generates these DD statements at job submission time, based on the CICS APPLIDs selected for reporting and their associated SMF Files.

SMF File DDnames need not be prefixed by SMFIN. CICS PA will accept any DDname via the INPUT operand.

CPADICTR DD

Dictionary data set.

These DD statements define the data sets which contain Dictionary records. It is only required if you want to include User Fields in your reporting.

Usually, the SMF File contains a Dictionary record to define the format of its performance records. If the Dictionary record is missing from the file, CICS PA will look in the CPADICTR data sets to find a Dictionary record for the particular CICS system (APPLID or APPLID/MVS) so report processing can proceed. If not present, CICS PA will use the default Dictionary record for the CICS system being processed.

External sorting

Some CICS PA reports and extracts sort records to produce their output. CICS PA uses the SORT utility (DFSORT or equivalent product) to perform External Sorting.

The reports and extracts that use sort are:
    Performance List Extended
    Performance Summary (optional)
    Cross-System Work
    Transaction Group
    BTS
    Workload Activity
    DB2
    System Logger
    Export (optional for Summary Form)

The CICS PA reports and extracts use External Work data sets to save records that are to be sorted.

If the EXTERNAL operand is not specified, CICS PA assigns an External Work File from a pool specified in the JCL. External Work Files in the pool are identified with unique DDnames prefixed by **CPAXW.** Each report that requires an External Work File and does not specify the EXTERNAL operand is assigned one from the pool. You must ensure that there are enough External Work Files in the pool to handle all the reports that need one.

JCL for reports and extracts

The Summary Report can perform either an External Sort or an internal program sort. If the EXTERNAL operand is specified, CICS PA performs the External Sort. Otherwise, CICS PA sorts the records in virtual storage. In most cases, an internal program sort can be used. However, if the SUMMARY report sort key has too many unique values, an External Sort should be considered. For example:

- **FIELDS(TRAN)** will generate a report line for each Transaction ID and can usually be handled by an internal sort.
- **FIELDS(USERID,TRAN)** will generate a report line for every Userid/Transaction ID combination. In this case, you may consider using an External Sort.

The following DD statements are required for External Sorting:

CPAXWnnn DD
> External Work Files.
> These DD statements define the External Work Files used by the reports that sort their records. CICSPA commands refer to these DD statements via the **EXTERNAL** operand (see "EXTERNAL" on page 345).

> The CICS PA dialog automatically generates these DD statements at job submission time, based on the **External Work Data Sets** specification in the Reporting Allocation Settings profile options.

> External Work DDnames need not be prefixed by CPAXW. CICS PA will accept any DDname via the EXTERNAL operand.

CPASWKnn DD
> Sort Work Data Sets.
> These DD statements define the Sort Work Files used by DFSORT (or equivalent product) on behalf of the reports that sort their records. **nn** is the Sort Work File sequence number. Refer to Table 7 on page 335 for a list of reports that use SORT.

> The CICS PA dialog automatically generates four (4) DD statements at job submission time, based on the **Sort Work Data Sets** specification in the Reporting Allocation Settings profile options.

SORTLIB DD
> This is the library in which DFSORT (or equivalent product) is installed, and can be omitted if SORT is installed in the link-list. Refer to Table 7 on page 335 for a list of reports that use SORT.

SYSOUT DD
> Sort Message Data Set.
> This DD statement defines the file used for SORT messages. It is required if DFSORT is used. Refer to Table 7 on page 335 for a list of reports that use SORT.

Table 7. CICS PA reports, default DDnames, and external sort requirements

Report or Extract	Description	Default Report Output DDname	Default Extract Output DDname	External Sort Required?
LIST	Performance List Report	LISTnnnn	N/A	N
LISTX	Performance List Extended Report	LSTXnnnn	N/A	Y
SUMMARY	Performance Summary Report	SUMMnnnn	N/A	Optional
TOTAL	Performance Totals Report	TOTLnnnn	N/A	N
WAITANALYSIS	Wait Analysis Report	WAITnnnn	N/A	N
CROSS	Cross-System Work Report	CROSnnnn	N/A	Y
TRANGROUP	Transaction Group Report	TRGPnnnn	N/A	Y
BTS	BTS Report	CBTSnnnn	N/A	Y
WORKLOAD	Workload Activity Report	WKLDnnnn	N/A	Depends
LISTEXCEPTION	Exception List Report	XLSTnnnn	N/A	N
SUMEXCEPTION	Exception Summary Report	XSUMnnnn	N/A	N
RESUSAGE	Transaction Resource Usage Reports	RESUnnnn	N/A	N
DB2	DB2 Report	DB2Rnnnn	N/A	Y
MQ	WebSphere MQ Report	MQ00nnnn	N/A	N
LOGGER	System Logger Report or Extract	LOGRnnnn	CPA0EXPT	Depends
OMEGAMON	OMEGAMON Reports	OMEGnnnn	N/A	N
GRAPH(TRANRATE)	Transaction Rate Graph Report	GRTEnnnn	N/A	N
GRAPH(RESPONSE)	Response Time Graph Report	GRSPnnnn	N/A	N
CROSS	Cross-System Work Extract	XSYSnnnn	CPAOXSYS	Y
EXPORT	Exported Performance Data Extract	EXPTnnnn	CPAOEXPT	Depends
RECSEL	Record Selection Extract	RSELnnnn	CPAORSEL	N

JCL for reports and extracts

Chapter 12. Using the CICS PA commands

The CICS PA commands are used to request reports and extracts. If you use the CICS PA dialog to build and submit Report Sets, the commands are generated automatically, but you are given the opportunity to edit them before job submission.

The commands are specified in the **SYSIN DD** statement of your CICS PA batch JCL. There are three ways to include the commands in your job stream:

1. You can code the commands directly under **//SYSIN DD ***

2. You can precode the commands and store them in a member of a PDS which is then referenced in your JCL using
   //SYSIN DD DSN=pdsname(member),DISP=SHR

3. You can precode commands and store them for future use in the CICS PA command library referenced by the **CMDLIB DD** statement in your JCL. The precoded commands can then be included in your job stream using the **COPY** or **INCLUDE** instruction under **//SYSIN DD *** (for further information see "COPY instruction" on page 469)

Refer to Chapter 11, "JCL for reports and extracts," on page 329 for a description and examples of the JCL for producing CICS PA reports and extracts.

General command format

The standard command format for producing reports and extracts is:

Name	Command	Operands	Comments
name in columns 1-8 (or blank)	**CICSPA**	one or more operands	comments (or blank)

The general format of the command as it appears in the **SYSIN DD** statement of your job stream is:

```
CICSPA operand[(suboperand)][,operand[(suboperand)],...]
```

Name
Optional. Identifies the command. It is a label from one to eight characters long and must start in column 1. It must not be a command name or an acceptable abbreviation of a command name.

Command
Required. The **CICSPA** command requests CICS PA reports and extracts.

Operands
One or more operands are required to specify which reports and extracts you want, and specify options for these.

An operand is either a report operand or a control operand:

1. A **report operand.** Each time one is specified, a new report or extract is created.

2. A **control operand.** When specified as a global operand before report operands, it affects *all* the following reports and extracts until it is next specified. Each time it is specified, it overrides its previous setting. This is

useful if you want to run multiple variations of a number of reports. (Note that **SELECT** is an exception to this rule; new selection criteria are *added* to those previously specified.)

Some control operands, such as **SELECT** and **LINECount,** may be specified as suboperands of report operands. As report-level operands, they apply only to the particular report or extract, and override the global specification.

Operands may be specified as many times as desired, separated by commas. They may have suboperands and value lists. The rules for continuations, delimiters, and the formats of the operand values are described in "Rules for operands."

Comments
Optional. Separated by at least one blank from the last operand on the line.

General conventions

The format of the commands follows these general conventions:

- Any line with ∗ (an asterisk) in column 1 is treated as a comment (unless the asterisk is part of a continued quoted string).
- Column 72 is for continuation in some cases.
- Columns 73 through 80 of all lines are ignored.
- Blank lines are ignored.
- A single command can contain a maximum of 8191 characters.

Rules for operands

The **CICSPA** command requires one or more operands, separated by commas, to identify the particular reports and extracts to produce, and their desired options. Many operands may be abbreviated by truncation. They may contain suboperands and a list of values, positionally dependent, and enclosed in parentheses. For example, **ACTIVE(FROM(date,time),TO(date,time))**

Continuation rules
An operand is normally continued by ending the first line with a comma and continuing anywhere on the next line.

You may use any number of continuation lines as long as you observe the following limits:

- The maximum operand length is 4000 characters
- The maximum length of a character string in single quotation marks is 256 characters
- The maximum number of operands is 1000
- The maximum nesting depth is 254.

It is permissible to extend an operand to column 71, put a nonblank character in column 72, and continue anywhere on the next line. There are no restrictions as to where the operand must be divided when continuing.

A special rule applies to continuation of character strings enclosed in single quotation marks. To continue a quoted string, enter a nonblank character in column 72 and continue the string beginning in column 1 of the next line (this is the only

case in which a restriction is placed on the beginning column of the continuation). Comments or blank lines enclosed in single quotation marks are processed as part of the quoted string.

Delimiters

Certain characters are used as operand delimiters. The characters and their use are as follows:

Quotation mark

Designates the beginning or ending of a literal, as for example, a heading. When a quoted string contains a quotation mark, use two quotation marks; for example, 'THAT''S ALL FOLKS'. CICS PA replaces each pair of consecutive quotation marks with a single quotation mark before processing the command string. The ending quotation mark of a quoted string may be followed by a comma or a left or right parenthesis. Quoted strings cannot exceed 256 characters.

Dash or hyphen

Separates a range of values and, except when used in a quoted string, is treated as such. If a dash is followed by another delimiter, the second value is null.

Parentheses

Enclose suboperands or values. The right parenthesis must be followed by another right parenthesis, a comma, a space, or a left parenthesis.

Equal sign

Designates that a value follows. or example, A = B is treated as A(B). The equal sign may be used in this way only when followed by a single value. If you assign more than one value, use parentheses. When the equal sign is followed by a left parenthesis, it is ignored.

Comma

Delimits operands. (Omit the comma when its use is redundant). Consecutive commas cause generation of a null in the scan list, and must be counted toward the maximum number of operands allowed.

Operand value formats

Certain types of operand values are used in more than one command and have a standard format. These types are:

Numeric values

In general, numeric values can be up to nine digits. Exceptions and specific maximum values are set by the individual command processors.

Name values

In general, name values are from one to eight characters. They contain any combination of letters, numbers, and special characters except for blanks and the delimiters described previously.

Date and Time values

These values are used with **FROM** and **TO** operands to assign a time value, a date value, or both. Specific rules for each are as follows.

Time

Time is always expressed as **hhmmssth** for hours, minutes, seconds, and hundredths of a second. You may use delimiters to separate the time components (for example, **hh.mm.ss.th** or **hh:mm:ss:th**).

Command format and rules

When delimiters are not used, the first two digits are assumed to be the hour, unless they exceed 23. In this case, only the first digit is the hour. For example, 55 is 5:50, 257 is 2:57, and 187 is 18:70 (an error).

When delimiters are used, each value component is checked for validity. For example, 35.54 is an error, but 3554 is assumed to be 3:55:40, which is valid.

Date
A date may be either a calendar date or a relative date. If both the **FROM** and **TO** dates are specified, they must both be calendar dates or both relative dates.

Calendar dates
A calendar date may be either Gregorian (**yyyy/mm/dd** for year/month/day) or Julian (**yy/ddd** for year/day-of-year). Several formats for each are allowed.

The date is recognized as Gregorian if the slash is used as a delimiter. Allowable forms are:

> **yyyy/mm/dd**
> **mm/dd** (the current year is assumed)

Leading zeros may be omitted from both month and day.

When the slash is not used, the date is assumed to be Julian. Allowable forms are:

> **yy.ddd**
> **yyddd**
> **ddd** (the current year is assumed and leading zeros may be omitted in this form only)

Note: Two digit years provided as input are converted to:

> **19yy** if yy is 50–99
> **20yy** if yy is 00–49

For example, 99097 will be converted to 1999097 (April 7, 1999) whereas 05026 will be converted to 2005026 (January 26, 2005).

Relative dates
A Relative Date may be specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both **FROM** and **TO** dates are specified, they must be in the same format.

Single Date or Time Values
If you need to specify only the date, use a comma to designate the missing time value. For example:

> **TO=(2005/01/13,)**

If you need to specify only the time, it is unnecessary to precede the value with a comma to designate the missing date value. For example:

> **TO=1230** or **FROM=510**

Pairs of Date or Time values
Most commands allow a pair of date and time values.
For example: **FROM(2005/01/16,09:00),TO(2005/01/17,17:30)**

Defaults are provided if one or more values are omitted:

Missing values	Default
FROM date	1973/01/01 (January 1, 1973)
TO date	2025/12/31 (December 31, 2025)
FROM time	00:00:00.00
TO time	23:59:59.99

CICSPA report operands

A **report operand** requests a report or extract each time it is specified. Report operands may be specified as many times as desired.

Table 8 lists all the CICS PA reports and extracts. Each has a default format which you will get if you use only the command shown in the table.

Table 8. CICS PA report operands (default reports and extracts)

Command	Report/Extract	Page Ref.
Performance Reports		
CICSPA LIST	Performance List	357
CICSPA LISTX	Performance List Extended, Cross-System Work Extended	366
CICSPA SUMMARY	Performance Summary	377
CICSPA TOTAL	Performance Totals	397
CICSPA WAIT	Wait Analysis	399
CICSPA CROSSsystem	Cross-System Work	402
CICSPA TRANGROUP	Transaction Group	410
CICSPA BTS	CICS Business Transaction Services	412
CICSPA WORKLOAD	Workload Activity	414
Exception Reports		
CICSPA LISTEXCeption	Exception List	417
CICSPA SUMEXCeption	Exception Summary	419
Transaction Resource Usage Reports		
CICSPA RESUSAGE	File Usage Summary, Temporary Storage Usage Summary, Transaction Resource Usage List	420
Subsystem Reports		
CICSPA DB2	DB2 Activity	426
CICSPA MQ	WebSphere MQ Activity	432
CICSPA OMEGAMON	Adabas, CA-Datacom, CA-IDMS, or Supra Activity (as monitored by OMEGAMON)	434
System Reports		
CICSPA LOGGER	System Logger (Report or Extract)	436
Performance Graph Reports		
CICSPA GRAPH(TRANRATE)	Transaction Rate	442
CICSPA GRAPH(RESPONSE)	Transaction Response Time	442
Performance Extracts		
CICSPA CROSSsystem	Cross-System Work	402
CICSPA EXPORT	Performance Data Export	445
CICSPA LIST(DDNAME(xx))	Performance List Export	357
CICSPA SUMMARY(DDNAME(xx))	Performance Summary Export	377
CICSPA RECSEL	Record Selection	447
CICSPA HDB(LOAD(hdbname))	HDB Load	450

If you want to tailor the reports and extracts to meet your particular information requirements, you must specify additional operands, suboperands, and possibly value lists. For example, **APPLID, INput,** and **SELECT** (see "CICSPA control operands" on page 350) are typically required to control the input, so too are **OUTPUT(ddname)** to control report output and **DDNAME(ddname)** to control extract output.

For details on how to use the report operands to request variations of the reports and extracts, turn to the corresponding page reference in Table 8 on page 342. For information on the output produced, refer to the *CICS Performance Analyzer for z/OS Report Reference.*

Some suboperands are common to many of the reports and extracts. See "Common options" for a general discussion of these.

Other suboperands are peculiar to individual reports and extracts. Turn to the page references in Table 8 on page 342 for a discussion of these for each report and extract.

All CICS PA reports and extracts use CMF data as input and can be tailored by choosing which CMF data records and which fields will be processed. There are two filtering methods:

1. The most versatile method to use is **SELECT** which allows inclusion (or exclusion) of specific records according to values in the fields of individual CMF records.
2. **FIELDS** can be used for the **LIST, LISTX,** and **SUMMARY** reports to specify which CMF fields to report, the order of the fields, and how the fields are summarized.

There are five data types for CICS-defined fields: **character, count, decimal, clock, time stamp.** For both filtering methods (**SELECT** and **FIELDS**), you will need to specify additional suboperands for CMF field types of **clock** and **time stamp** (unless defaults are assumed) to identify which of their formats you want.

There are effectively four data types for user fields: **character, count, clocktime, clockcount.** You will need to specify additional suboperands for user fields depending on the data type.

See "Tailoring using FIELDS" on page 346 and "Using SELECT statements" on page 452 for further information and examples.

Common options

The following suboperands can be specified for many of the CICS PA reports or extracts:
> **OUTPUT**
> **DDNAME**
> **EXTERNAL**
> **LINECount**
> **TITLE1** and **TITLE2**

Example:

CICSPA report operands — common options

```
CICSPA LISTX(
            TITLE1('Report includes all transactions'),
            TITLE2('**Please check response time in the Response field'),
       LISTX(OUTPUT(LISTX2),
            EXTERNAL(LISTXW2),
            LINEC(50),
            TITLE1('Report includes just the CPAX transaction'),
            TITLE2('**Please check response time in the Resp field'),
            SELECT(PERFORMANCE(INCLUDE(TRAN(CPAX)))))
```

This example will produce two Performance List Extended reports:

1. The first report will be routed to the default DDname LSTX0001 with the default line count of 60. The work file used by the external sort will have the default DDname CPAXW001. The title line that will print on each page of the report is:

```
Report includes all transactions                          **Please check response time in the Response field
```

2. Since the SELECT operand is used in the second report, it will contain records from the CPAX transaction only. It will be routed to the DDname LISTX2 with a line count of 50. The work file used by the external sort will have the DDname LISTXW2. The title line that will print on each page of the report is:

```
Report includes just the CPAX transaction                 **Please check response time in the Resp field
```

OUTPUT
The syntax is **OUTPUT(ddname)** or **OUTPUT=ddname.**

This provides the DDname of the output data set where a report is to be printed. It is important when you are running more than one report. To interleave multiple reports in a single output data set, specify the same DDname for each report. To direct each report to its own output data set, specify unique DDnames that refer to separate data sets.

If not specified, CICS PA assigns a default DDname **xxxxnnnn** where nnnn is a sequential number **0001-9999** to uniquely identify the report, and xxxx identifies the type of report:

LIST	Performance List report
LSTX	Performance List Extended report
SUMM	Performance Summary report
TOTL	Performance Totals report
WAIT	Wait Analysis report
CROS	Cross-System Work report
TRGP	Transaction Group report
CBTS	BTS report
WKLD	Workload Activity report
XLST	Exception List report
XSUM	Exception Summary report
RESU	Transaction Resource Usage reports
DB2R	DB2 report
MQ00	WebSphere MQ report
OMEG	OMEGAMON reports
LOGR	System Logger report
GRTE	Transaction Rate graph report
GRSP	Transaction Response Time graph report
CROX	Cross-System Work Extract Recap report
EXPT	Export Extract Recap report
RSEL	Record Selection Extract Recap report

HDBL	HDB Load Recap report
LOEX	System Logger Extract Recap report

DDNAME

The syntax is **DDNAME(ddname)** or **DDNAME=ddname.**

This provides the DDname of the output data set where extract records are written. If not specified, CICS PA assigns a default DDname **CPAOxxnn** where nn is a sequential number **01-99** to ensure the data sets are uniquely identified, and xx indicates the type of extract:

XS	Cross-System Work Extract data set
EX	Export Extract or System Logger data set
RS	Record Selection Extract data set

EXTERNAL

The syntax is **EXTERNAL(ddname)** or **EXTERNAL=ddname.**

This provides the DDname of the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is a sequential number **001-999** to uniquely identify the work file. There must be one External Work File specified in the JCL for each report that needs one. Refer to page 334 for information on the DD statements for External Work Files.

The following reports and extracts use external sorting:

LISTX	Performance List Extended report
SUMMARY	Performance Summary report (optional)
CROSS	Cross-System report and extract
TRANGROUP	Transaction Group report
BTS	BTS report
WORKLOAD	Workload Activity report (possibly)
DB2	DB2 report
LOGGER	System Logger report
EXPORT	Export Extract (optional for Summary Form)

LINECount

The syntax is **LINEC(nnn)** or **LINEC=nnn.**

Use this to specify the maximum number of lines, including headings, to print on each page of the report. The default is **60.**

LINECount can be specified as a global operand applying to multiple reports, or a suboperand of a particular report. The report-specific value takes precedence over the global for that report only.

This operand does not apply to the Extracts and System Logger report.

TITLE1 and TITLE2

The syntax is **TITLE1('title_first_half')** and **TITLE2('title_second_half').** This allows you to specify a title for your report to print on each page of the report below the report heading (see the example in Figure 167 on page 346). The maximum length of the title field is **128** characters. Specify the first 64 characters, enclosed in single quotation marks, as **TITLE1.** If your title exceeds 64 characters, specify the remainder of the title, enclosed in single quotation marks, as **TITLE2.**

CICSPA report operands — common options

The **TITLE1** text is aligned with the left margin of the report, and the **TITLE2** text starts in column 65. To produce a centered title, use leading spaces.

```
V1R2M0                              CICS Performance Analyzer
                                       Performance List

LIST0001 Printed at  9:06:18  1/13/2005   Data from 11:10:51  1/12/2005          APPLID CICSPAOR      Page      1
This is TITLE1 on the left                              This is TITLE2 on the right

Tran SC Term Userid RSID Program  TaskNo Stop           Response Dispatch User CPU  Suspend DispWait  FC Wait  FCAMRq IR Wait
                                         Time              Time    Time     Time     Time    Time      Time             Time
CSSY U       CBAKER      DFHAPATT  16 11:10:51.123        .0139   .0007    .0006    .0133   .0000     .0000      0    .0000
CSSY U       CBAKER      DFHAPATT  17 11:10:51.213        .0185   .0010    .0014    .0175   .0001     .0000      0    .0000
  . . .
```

Figure 167. Example of a report title

Filtering using SELECT and SELECT2

The **SELECT** and **SELECT2** operands allow inclusion or exclusion of specific records according to values in the fields of individual records. SELECT and SELECT2 provide the same Selection Criteria functionality. SELECT2 is generated by the CICS PA dialog when the Report Form has Selection Criteria. If both SELECT and SELECT2 are specified, the record must match both for the record to be processed. For a detailed discussion, see "Using SELECT statements" on page 452.

Tailoring using FIELDS

The **FIELDS** operand allows you to tailor reports by requesting which CMF fields are reported, the order of the fields, and how the fields are summarized. For details on how to do this for the particular reports:
- For the Performance List report, see "LIST(FIELDS" on page 358.
- For the Performance List Extended report, see "LISTX(FIELDS" on page 368.
- For the Performance Summary report, see "SUMMARY(FIELDS" on page 379.

There are five types of CMF fields. The types are determined by CICS, defined in the CMF Dictionary record, and determine the field data type. The CMF field types are listed in Table 9.

Table 9. CMF field types

CMF field type	Description	Output length
C – Character	Character string	Variable
A – Count	Binary counter	8
P – Decimal	Packed decimal number	8
S – Clock	Accumulation of Clock time:	
Time	Elapsed Time in seconds	8
Count	Number of occurrences	8
T – Time Stamp	STCK Date/Time Stamp	5-12

Suboperands for Clock type fields

Use the suboperands **TIME** and **COUNT** when specifying a clock type field. Clock type fields contain two parts: one is an accumulation of elapsed time (TIME), and the other is a count of the number of times the condition occurred (COUNT). You may request one or both types; they are treated as separate fields. For example:

```
LIST(FIELDS(SUSPEND(TIME),SUSPEND(COUNT),DISPATCH(TIME)))
```

Any clock type field specified in **FIELDS** without TIME or COUNT is assigned the default of **TIME.** However, no default exists when a clock type field is requested in a **SELECT** statement, so in this case you ***must*** specify either TIME or COUNT.

The precision of TIME fields is 0.0001 to 0.000001 (microseconds) controlled by the global operand **PRECISION(n)** where n represents 4, 5 or 6 decimal places. The default is **4.**

Suboperands for Time Stamp fields

You need to specify the format in which you want time stamp type fields reported. The date and time formats are shown in the following table. Any time stamp field specified in **FIELDS** without a format is assigned the default of **TIMET.**

Table 10. Time stamp field formats

Type	Output format	Output field length
DATE	mm/dd/yyyy	10
DATEISO	yyyy-mm-dd	10
DATEM	mm/dd	5
DATEYR	mm/dd/yy	8
TIMET	hh:mm:ss.thm	12
TIMEM	hh:mm	5
TIMES	hh:mm:ss	8
DATETIM	yyyy-mm-dd hh:mm:ss	19

These format options are most commonly used with the **START** and **STOP** operands.

The syntax for using these is to list the options separated by commas and enclosed in parentheses, following **START** or **STOP.** For example:

```
CICSPA LIST(FIELDS(TRAN,TERM,USERID,
                   START(DATEYR,TIMET),
                   STOP(TIMEM)))
```

Suboperands for User fields

CICS PA can access user fields in the CMF performance records. The user fields are defined in the CICS Monitoring Control Table (MCT) as either character type, count type, or clock type. As with CICS-defined clock type fields, user clock type fields have two parts: an elapsed time and a count of the number of times the condition occurred. When specifying user fields to CICS PA, the elapsed time part of clock type fields is called **CLOCKTIME,** and the count part of clock type fields is called **CLOCKCOUNT.** Therefore, CICS PA makes it appear as if there are four types of user fields: **CHARACTER, COUNT, CLOCKTIME, CLOCKCOUNT.**

When specifying user fields in the command stream, certain suboperands must be used to identify the user fields in the CMF performance record. The **OWNER** suboperand is common to all user fields. Use **OWNER** to specify the eight-character owner name of the user field.

The owner of the User Field is the entry name assigned to the User Field in the DFHMCT ID= macro specification. If the entry name is not specified in the ID= parameter, CICS assigns a default entry name or owner of 'USER'. CICS PA does not have a default owner name. Even if the owner name is USER, the **OWNER** suboperand must be specified.

CICSPA report operands — using FIELDS

The remaining suboperands are different for CHARACTER type fields versus numeric (COUNT, CLOCKTIME, CLOCKCOUNT)

CHARACTER type

Use the **OWNER** suboperand when specifying **CHARACTER** type fields. Only one character user field can be defined for each owner name.

The syntax is:

CHARACTER(OWNER(owner)[,SUBSTR(offset,length)])

When printing a character user field on the Performance List or Performance Summary report, CICS PA defaults to using the entire length (up to 8 characters for the Performance Summary report) of the character user field.

Use the **SUBSTR** suboperand to specify that only part of the character user field is to be printed.

The first value (**offset**) is the position of the first character to be printed (starting at 1), and the second value (**length**) is how many characters are to be printed. For example, if the character field value is "1234567", specifying **SUBSTR(1,2)** results in "12", and specifying **SUBSTR(3,3)** results in "345".

When character user fields are used in a SELECT statement, the SUBSTR operand *must* be specified.

COUNT, CLOCKTIME, and CLOCKCOUNT types

Use the **OWNER** and **NUMBER** operands when specifying user field types **COUNT**, **CLOCKTIME**, and **CLOCKCOUNT**. Up to 256 count type fields and up to 256 lock type fields can be defined for each owner. The **OWNER** operand specifies the eight-character name of the user field owner. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of 'USER'. **NUMBER** operand specifies the three-digit number that identifies a specific count or clock type field.

The operand syntax is

```
COUNT(OWNER(owner),NUMBER(nnn))
CLOCKTIME(OWNER(owner),NUMBER(nnn))
CLOCKCOUNT(OWNER(owner),NUMBER(nnn))
```

All **COUNT, CLOCKTIME,** and **CLOCKCOUNT** type fields can be summarized in the Performance Summary report. Additional operands are then required to define the type of summarization (see "SUMMARY - Performance Summary report" on page 377).

Example:

Consider the DFHMCT User Fields definition below for owner (or group) USEREMP which consists of the following fields:
*   Character field FIELD1 with a length of 16
*   Count field COUNT1
*   Clock field CLOCK1

```
DFHMCT TYPE=EMP,
       CLASS=PERFORM,
       ID=(USEREMP.1),
       CLOCK=(1,CLOCK1),
       COUNT=(1,COUNT1),
       FIELD=(1,FIELD1),
       PERFORM=(SCLOCK(1),
       ADDCNT(1,1),
       MOVE(1,16))
```

The command below generates a Performance List report that shows the following user field values:
*   The first 8 characters of FIELD1
*   The last 8 characters of FIELD1
*   The counter in COUNT1
*   The elapsed time in CLOCK1
*   The counter in CLOCK1

```
CICSPA LIST(FIELDS(TRAN,STYPE,USERID,
                   CHARACTER(OWNER(USEREMP),SUBSTR(1,8)),
                   CHARACTER(OWNER(USEREMP),SUBSTR(9,8)),
                   COUNT(OWNER(USEREMP),NUMBER(001)),
                   CLOCKTIME(OWNER(USEREMP),NUMBER(001)),
                   CLOCKCOUNT(OWNER(USEREMP),NUMBER(001))))
```

CICSPA control operands

Control operands are used to specify factors that affect the content of reports and extracts.

The following table lists all the control operands showing the format of the command and description of the function.

Table 11. CICSPA control operands

Command	Control Function
CICSPA APPLID	Application identifier of the CICS system(s) from which data is processed. Most reporting occasions will filter on APPLID. However, if reporting on all APPLIDs is required, the command **CICSPA NOAPPLID** may be used.
CICSPA PRECISION	Precision of numeric fields. Specifies 4, 5, or 6 decimal places to report up to microseconds.
CICSPA FORMAT	Time and date delimiters to use for the reports and extracts.
CICSPA INput	DDnames of the SMF input data set(s). This required operand identifies the source of SMF records for the reports and extracts that follow.
CICSPA LINECount	Number of lines per page for the reports.
CICSPA SELECT|SELECT2	Record selection for the reports and extracts. This is a powerful and flexible mechanism for filtering the input data.
CICSPA SMFSTART|SMFSTOP	Start/Stop time period to limit the time range of SMF input data processed by CICS PA based on the SMF record time stamp.
CICSPA ZONE	Time zone for all reports and extracts, in number of hours west or east of Greenwich Mean Time (GMT).

Control operands are important for specifying how reports and extracts are created. These operands are normally coded before report operands, allowing them to apply to multiple reports. For example,

```
CICSPA ZONE=-8,TOTAL,SUMEXC
```

causes both the Performance Totals and Exception Summary reports to print as though the data came from time zone -8 (U.S. Pacific time).

If a control operand is specified more than once, the report operands will use the control operand immediately preceding it. This is useful if you want to create variations of one report. For example,

```
CICSPA ZONE=10,TOTAL,SUMEXC,ZONE=-8,TOTAL
```

This example creates two Performance Total reports, with the first printed as though the data came from time zone 10 (for example, Sydney), and the second printed as though from time zone -8. The Exception Summary report will be printed as though the data came from time zone 10.

Except for SELECT, values will be reset with a new CICSPA command. For example,

```
CICSPA ZONE=-8,TOTAL
CICSPA TOTAL
```

This example creates two Performance Totals reports, with the first report printed as though the data came from time zone -8, and the second one printed as though from the default of the local time zone.

When a control operand is used, it affects all reports and extracts until a control operand is respecified or a new CICSPA command is issued. Note, however, that the CICSPA command does *not* reset the SELECT operand (see "Using SELECT statements" on page 452).

APPLID

The syntax for this operand is **APPLID(applid1,...,applidn)** if one or more CICS systems, or **APPLID=applid** if only one. This operand specifies the generic application identifiers of the CICS systems whose data you want to process. When data from two or more systems is combined in one input data set, this operand can be used to select which set of data to process. APPLID can be coded before report operands to apply to multiple reports.

NOAPPLID can be used to report all APPLIDs with records in the SMF File.

Example 1:

```
CICSPA APPLID(CICSPROD),LIST,SUMMARY
```

This example shows the Performance List and Performance Summary reports requested for a CICS system identified by APPLID CICSPROD.

Example 2:

```
CICSPA APPLID(CICSP1,CICSP2),LIST
CICSPA SUMMARY
CICSPA NOAPPLID,TOTAL
```

This example generates the Performance List and Performance Summary reports for APPLIDs CICSP1 and CICSP2, and the Performance Totals report for *all* APPLIDs with records in the input file.

PRECISION

The syntax is **PRECISION(n)** or **PRECISION=n.**

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. For example, specify PRECISION(6) to report microseconds. The default is **4.**

FORMAT

The FORMAT operand specifies the time and date delimiters for the reports and extracts. The syntax for this operand is **FORMAT(t,d)**.

t   The first operand specifies the separator character for time-of-day displays. The default is a colon (:), which produces time displays such as 08:30:12.321.

d   The second operand specifies the separator character for the date. The default is a slash (/), which produces date displays such as 2005/01/13.

CICSPA Control Operands

Any character may be specified, but special characters such as a space, comma, or parenthesis must be enclosed within single quotation marks.

A single quotation mark, which is a special character, may be used as a delimiter. To specify it, use *two* single quotation marks to request the delimiter character, enclosed within the single quotation marks needed with special characters.

Example 1:
```
CICSPA FORMAT(' ',/)
```

specifies a space for the time delimiter and a slash for the date delimiter.

Example 2:
```
CICSPA FORMAT('''',/)
```

specifies a single quotation mark for the time delimiter and a slash for the date delimiter.

Example 3:
```
CICSPA FORMAT(:,/),LIST
```

specifies the default delimiters with a Performance List report.

Example 4:
```
CICSPA FORMAT('.',' '),LIST
```

specifies a period for the time delimiter and a space for the date delimiter in this Performance List report.

INput

The syntax for this operand is **INPUT(ddname1,ddname2,...)** if one or more CICS systems, or **INPUT=ddname** if only one. Use this operand to specify the DDname(s) of the input data set(s) for each CICS system to be reported. If not specified, the default DDname is **SMFIN.** The CICS PA dialog, however, assigns DDnames in the format **SMFINnnn** where nnn is a sequential number in the range **001-999** to uniquely identify each CICS system's data sets.

Example:
```
CICSPA INPUT(SMFIN004),
       LIST,
       SUMMARY
```

The input for the Performance List and Summary reports is taken from SMFIN004.

Specifying data input

The input data sets to be processed by CICS PA reports and extracts must be specified in your JCL. To do this:

1. Nominate the data sets in the **SMFINnnn DD** statements of your JCL, where nnn is a sequential number **001-999** to uniquely identify the data sets. (CICS PA will accept other DDnames of your choosing.)

2. Code the command **CICSPA INput(ddname)** where ddname is **SMFINnnn** corresponding to the data files to be processed.

Figure 168 on page 354 shows an example of the JCL.

CICSPA Control Operands

```
//CICSPA JOB (Job Accounting)
//CPA      EXEC PGM=CPAMAIN
//SYSPRINT DD  SYSOUT=*
//* SMF Files for APPLID=APPL1
//SMFIN001 DD  DSN=CICS.APPL1.FILE1,DISP=SHR
//         DD  DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
//* SMF Files for APPLID=APPL2
//SMFIN002 DD  DSN=CICS.APPL2.FILE1,DISP=SHR,UNIT=AFF=SMFIN001
//         DD  DSN=CICS.APPL2.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
  . . .
//SYSIN    DD  *
   CICSPA IN(SMFIN001),APPLID(APPL1),
          LIST(OUTPUT(LIST0001)),
          SUMMARY(OUTPUT(SUMM0001))
   CICSPA IN(SMFIN002),APPLID(APPL2),
          LIST(OUTPUT(LIST0002)),
          SUMMARY(OUTPUT(SUMM0002))
/*
//
```

Figure 168. Sample JCL Specifying Data Input

LINECount

LINECount is a control operand or suboperand for any report. The syntax is
LINEC(nnn) or **LINEC=nnn**. Use this operand to specify the maximum number of
lines, including headings, to print on each page of the report. The default line count
is 60.

Example 1:
```
CICSPA LINEC(40),
       LIST,
       LISTEXC
```

The number of lines per page will be 40 for both the Performance List report and
the Exception List report.

Example 2:
```
CICSPA LISTEXC,
       LIST(LINEC(40))
```

In this case, the LINECount suboperand only affects the Performance List report.

SELECT

Use the SELECT operand to filter the input data that is reported. This operand
allows you to select specific records for the reports according to values in individual
CMF record fields.

One or more SELECT operands may be coded to allow control of multiple reports.
It may also be used as a suboperand for any particular report or extract. For a
detailed discussion on how this important operand works, see "Using SELECT
statements" on page 452.

SELECT2

The SELECT2 operand is the same as SELECT. When Selection Criteria are specified in a Report Form and also in a report that uses that Report Form, both SELECT and SELECT2 operands are used. CICS PA checks both, and both must match for the record to be processed.

SMFSTART and SMFSTOP

Use these control operands to specify a time period to filter the SMF input data prior to processing by all commands in the command input. CICS PA processes only those records with an SMF time stamp within the specified time period. If not specified, the entire input file is processed.

The syntax is:

```
CICSPA SMFSTART(date,time),
       SMFSTOP(date,time)
```

Date is either a calendar date in the format *yyyy/mm/dd* or a relative date specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on.
- If both START and STOP dates are specified, they must be in the same format.
- If STOP date is not specified, it defaults to the end of file.
- If START date is not specified, it defaults to the first record in the data input file.

Time is a time-of-day in the format *hh:mm:ss.th*
- If START time is not specified, it defaults to the start of the day.
- If STOP time is not specified, it defaults to the end of the day.
- Times can span midnight.

Notes:
1. These operands apply to the SMF record time stamps. Do not confuse them with the SELECT FROM and TO report interval operands which operate on transaction start and stop times.
2. For the DB2 report, if protected threads are in use, specify an SMFSTOP time that is at least 5 minutes past the required time (FROM/TO report interval). This is to ensure that no DB2 accounting statistics are excluded that relate to CMF performance records that are included in the report.

Example 1:

```
CICSPA SMFSTART(-1,08:30:00.00),
       SMFSTOP(0,17:30:00.00)
```

CICS PA will process only the data from 8:30a.m. yesterday until 5:30p.m. today. Data outside this time period is ignored.

Example 2:

```
CICSPA SMFSTART(2005/02/19,),
       SMFSTOP(,)
```

CICS PA will process the data from February 19, 2005 until the end of file. Data before this date is ignored.

ZONE

The syntax is **ZONE(n)** or **ZONE=n.**

This provides a way to override your local CPU time zone setting and convert CMF, DB2, MQ, and System Logger clock fields to a different time zone. It is only useful if the data you are reporting was generated by a system running with a different time zone.

CMF, DB2, MQ, and Logger records have clock fields in STCK format based on Greenwich Mean Time (GMT). CMF records have conversion factors that enable the clock fields to be converted to local time. However, if you are running the DB2, MQ, or System Logger reports against records from a system with a different time zone, then you must specify the time zone option.

Specify the time zone as an integer from -12 to +12 to represent the number of hours that local time is west or east of GMT. For example, specify -5 for New York, 10 for Sydney. CICS PA will then convert GMT STCK values to the required local time for all record types.

CICS PA JCL generation translates this field to the ZONE operand.

The default is blank (not specified). In this case, when the time zone is not specified, CICS PA does the following:
- For CMF records, the conversion factors SMFMNLSO (Leap Second Offset) and SMFMNDTO (Date/Time Offset) in the CMF record are used.
- For DB2, MQ, and Logger records, the conversion factors CVTLSO (Leap Second Offset) and CVTLDTO (Date/Time Offset) in the CVT are used, that is, the reporting system's time zone is used.

Example 1:
```
CICSPA ZONE(-5),
       LIST,
       SUMMARY
```

This example shows ZONE applied to multiple reports. Both the Performance List and Performance Summary reports will be produced as if the input data came from the zone 5 hours west of GMT (for example, Toronto, New York, Lima).

Example 2:
```
CICSPA ZONE(8),
       LIST,
       SUMMARY
```

Both the Performance List and Performance Summary reports will be produced as if the input data came from the zone 8 hours east of GMT (for example, Singapore, Perth).

LIST - Performance List report

The **LIST** operand requests the Performance List report or an Export file (see "Exported Performance Data extract" on page 258).

The command format for the Performance List report is:

```
CICSPA LIST(
          [OUTPUT(ddname),]
          [FIELDS(field1[(options)],...),]
          [LINECount(nnn),]
          [TITLE1('...1st 64 characters of title...'),]
          [TITLE2('...2nd 64 characters of title...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The command format for the List Export is:

```
CICSPA LIST(
          [OUTPUT(ddname),]
          [DDNAME(ddname),]
          [DELIMIT('field-delimiter'),]
          [LABELS|NOLABELS,]
          [FLOAT,]
          [FIELDS(field1[(options)],...),]
          [TITLE1('...1st 64 characters of title...'),]
          [TITLE2('...2nd 64 characters of title...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

OUTPUT

Controls the report output DDname. See "OUTPUT" on page 344 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output, and xxxx is:

  LIST for the Performance List report.

  EXPT for the Recap report for the List Export.

DDNAME

Specifies the DDname of the extract data set where the exported performance data is written. When this operand is specified, instead of producing the report, CICS PA produces the extract file, and a Recap of the extract process is written to the OUTPUT operand report file.

The DDname can be up to 8 alphanumeric characters, with the first non-numeric. The CICS PA dialog assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99.** (See the sample JCL in Figure 166 on page 329).

DELIMIT

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon DELIMIT(';').

LABELS|NOLABELS

LABELS indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

NOLABELS indicates that CICS PA is not to write a field labels record to the extract data set.

FLOAT

Write numeric fields in the extract in S390 FLOAT format. This only applies to the List Export when the FIELDS operand is specified.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

FIELDS

Specifies which fields are included in the report or extract, their order, and format. See "LIST(FIELDS" for details.

LINECOUNT

Controls the number of lines per page in the List report. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the report title (left and right half of the subheading line) for the List report or the Export Recap. See "TITLE1 and TITLE2" on page 345 for further information.

SELECT|SELECT2(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

LIST(FIELDS

The Performance List report may be tailored by modifying which fields are reported and the order in which they appear in the report. This is done with the **FIELDS** operand followed by the field names:

```
CICSPA LIST[(FIELDS(field1[(options)],...))]
```

If FIELDS is not specified, the default is:

```
CICSPA LIST(FIELDS(TRAN,         Transaction ID
                  STYPE,        Start type of transaction
                  TERM,         Terminal ID
                  USERID,       User ID
                  RSYSID,       Remote System ID
                  PROGRAM,      Initial program name
                  TASKNO,       Transaction number
                  STOP(TIMET),  Stop time (hh:mm:ss.thm)
                  RESPONSE,     Response time
                  DISPATCH,     Dispatch time
                  CPU,          CPU time
                  SUSPEND,      Suspend time
                  DISPWAIT,     Dispatch wait time
                  FCWAIT,       File Control I/O wait time
                  FCAMCT,       File Control access method calls
                  IRWAIT))      Inter-Region (MRO) I/O wait time
```

Notes:

1. The report format cannot be changed on an individual field basis. Even if only one field is required to be changed from the default, the entire list of field names must be entered.

2. Some field types require additional operands. These are:
   - "Clock (Time-Count) fields" on page 359.
   - "Time Stamp fields" on page 359.

- "User fields" on page 360.

  CPU, DISPATCH, and FCWAIT above are examples of clock type fields. Therefore, they could have been specified as CPU(TIME), DISPATCH(TIME), and FCWAIT(TIME). Instead they are allowed to assume the default TIME.

Character fields
The command format is:

`CICSPA LIST[(FIELDS(fieldnames))]`

The character fields that can be selected for the Performance List report are listed in Table 18 on page 740. Refer to the **LIST Report Form** column and the fields with data type **C** in their CMF Field ID.

Time Stamp fields
The command format is:

`CICSPA LIST[(FIELDS(START|STOP(date-time-format)))]`

The time stamp fields are:
START   Task start time
STOP   Task stop time

One or more of the following formats can be selected for the time stamp fields for the Performance List report:
DATE   Date in the format *mm/dd/yyyy*
DATEISO   Date in the format *yyyy-mm-dd*
DATEM   Date in the format *mm/dd*
DATEYR   Date in the format *mm/dd/yy*
<u>**TIMET**</u>   Time in the format *hh:mm:ss.thm*. This is the default if START or STOP is specified without a format.
TIMEM   Time in the format *hh:mm*
TIMES   Time in the format *hh:mm:ss*

For more information on specifying time stamp fields, see "Suboperands for Time Stamp fields" on page 347.

Count fields
The command format is:

`CICSPA LIST[(FIELDS(fieldnames))]`

The count fields that can be selected for the Performance List report are listed in Table 18 on page 740. Refer to the **LIST Report Form** column and the fields with data type **A** in their CMF Field ID.

Optionally, numeric values can be converted for reporting by specifying one of the following:
K   Divide value by 1000, typically for count fields
M   Divide value by 1000000, typically for count fields
KB   Kilobytes (divide by 1024), typically for storage fields
MB   Megabytes (divide by 1024x1024), typically for storage fields

Clock (Time-Count) fields
The format of the command is:

`CICSPA LIST[(FIELDS(fieldname1(TIME|COUNT),...))]`

LIST - Performance List report

For clock type fields, you can report the first part of the field (elapsed TIME) or the second part (COUNT of the number of times the condition occurred). If neither is specified, the default is TIME. For more information on specifying clock fields, see "Suboperands for Clock type fields" on page 346.

The clock fields that can be selected for the Performance List report are listed in Table 18 on page 740. Refer to the **LIST Report Form** column and the fields with data type **S** in their CMF Field ID.

Special (Time) fields
The command format is:

```
CICSPA LIST[(FIELDS(fieldnames))]
```

Special time fields are accumulations of several CMF time fields.

The special time fields that can be selected for the Performance List report are:

COMMWAIT	Communications wait time.
	The total time value of the communications related fields IRWAIT,ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT.
IOWAIT	Total I/O wait time.
	The total time value of FCWAIT, JCWAIT, TDWAIT, and TSWAIT.
IRESP	Transaction internal response time
JVMMTIME	JVM Method time
	JVMTIME-(JVMITIME+JVMRTIME)
RESPONSE	Transaction response time
RMIOTIME	Resource Manager Interface (RMI) Other time
	RMISUSP-(IMSWAIT+DB2RDYQW+DB2CONWT+DB2WAIT)
	Note that RMIOTIME was formerly RMIOTHER. RMIOTHER is now a CICS CMF Field in the new DFHRMI class.

User fields
User fields can be one of the following types:

CHARACTER	Character string
COUNT	Binary or Packed counter
CLOCKTIME and **CLOCKCOUNT**	
	The two parts of clock type fields:
	CLOCKTIME — The elapsed time part
	CLOCKCOUNT — The count of the number of times the condition occurred

The format of the command for requesting user fields in the Performance List report is:

For character type user fields:

```
CICSPA LIST[(FIELDS(CHARACTER(OWNER(owner)
            [,SUBSTR(offset,length)]))))]
```

For numeric type user fields:

```
CICSPA LIST[(FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
            OWNER(owner),NUMBER(nnn))))]
```

The options are:

OWNER(owner)
Must be specified for all user field types. It is the 1-8 character owner of the

user field, identified by the entry name in the ID= parameter of the
TYPE=EMP entry in the MCT, or the CICS-assigned default name of *USER*
(no entry name in the ID= parameter).

SUBSTR(offset,length)
>Optional. Applies to character fields only. It specifies that only part of the
user field is to be reported; that part starting at the *offset* position (where 1
is the first character in the field) for the number of characters specified by
length. If SUBSTR is not specified, the default is the entire field (although
limited to 8 characters for the Performance Summary report).

NUMBER(nnn)
>Must be specified for all numeric types (COUNT, CLOCKTIME,
CLOCKCOUNT). It specifies the three-digit number that identifies a specific
count or clock type field. For each owner, up to 256 count type and up to
256 clock type user fields can be defined to CICS, whereas for character
user fields, only one can be defined for each owner.

For more information on specifying user fields, see "Suboperands for User fields" on
page 347.

DBCTL fields

The command format is:

```
CICSPA LIST[(FIELDS(DBCTL(field1,field2,...)))]
```

If your MCT collects DBCTL User Data (using the DFH$MCTD macro in
SDFHSAMP), then the FIELDS operand can specify the DBCTL fields. See
Table 18 on page 740 for a list of these fields. Refer to the **LIST Report Form**
column and the fields with owner **DBCTL** in their CMF Field ID.

Note: The IMS Performance Analyzer (IMS PA) can provide a comprehensive
analysis of IMS DBCTL performance.

LIST examples

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 294
for the sample LIST Report Forms. You can use these sample Report Forms with
your Performance List report or Export. They provide a detailed picture of the many
aspects affecting CICS system performance.

Example 1: Default report.

```
CICSPA LIST
```

Example 2:

This example generates a Performance List report where most of the "time spent"
fields are requested. For the FCWAIT field, both the TIME part and the COUNT part
are requested. The DISPATCH, IOWAIT, IRWAIT, TSWAIT, TCWAIT, and JCWAIT
fields default to show the TIME part. The SUSPEND field could also default to
TIME.

```
CICSPA LIST(FIELDS(TRAN,RESPONSE,IRESP,DISPATCH,
                   SUSPEND(TIME),IOWAIT,FCWAIT(TIME,COUNT),
                   IRWAIT,TSWAIT,TCWAIT,JCWAIT))
```

Example 3:

LIST examples

This example generates a Performance List report where most of the File Control related fields are requested.

```
CICSPA LIST(FIELDS(TRAN,FCTOTAL,FCADD,FCAMCT,
                   FCBROWSE,FCDELETE,FCGET,FCPUT,
                   FCWAIT(TIME,COUNT)))
```

Example 4:

This example generates a Performance List report that contains user fields.

```
CICSPA LIST(FIELDS(TRAN,STYPE,USERID,
                   CHARACTER(OWNER(USEREMP),SUBSTR(1,8)),
                   CHARACTER(OWNER(USEREMP),SUBSTR(9,8)),
                   COUNT(OWNER(USEREMP),NUMBER(001)),
                   CLOCKTIME(OWNER(USEREMP),NUMBER(001)),
                   CLOCKCOUNT(OWNER(USEREMP),NUMBER(001))))
```

Example 5:

This example generates a Performance List report of only the performance class records with a transaction identifier of ABCD.

```
CICSPA IN(SMFIN002),
       SELECT(PERFORMANCE(INCLUDE(TRAN(ABCD)))),
       LIST
```

Example 6:

Few transaction abends have the value USER. This example generates a Performance List report of only those performance class records with an abend code of USER.

```
CICSPA SELECT(PERFORMANCE(INCLUDE(ABCODEC(USER)))),
       LIST
```

Example 7:

```
CICSPA LIST(FIELDS(TRAN,          Transaction ID
                   STYPE,         Start type of transaction
                   TERM,          Terminal ID
                   USERID,        User ID
                   START(TIMES),  Start time (hh:mm:ss)
                   STOP(TIMES),   Stop time (hh:mm:ss)
                   RESPONSE,      Response time
                   IRESP,         Internal response time
                   DISPATCH,      Dispatch time
                   CPU,           CPU time
                   SUSPEND,       Suspend time
                   DISPWAIT,      Dispatch wait time
                   RMISUSP,       RMI suspend time
                   IRWAIT,        Inter-Region (MRO) I/O wait time
                   FCWAIT,        File Control I/O wait time
                   FCAMCT))       File Control access method calls
```

This example produces a Performance List report like that shown in Figure 169 on page 363.

```
V2R1M0                                    CICS Performance Analyzer
                                               Performance List

LIST0001 Printed at 10:56:22  2/18/2005    Data from 11:16:47  2/14/2005                    APPLID IYK2Z1V1      Page      3

Tran SC Term Userid   Start     Stop     Response Int Resp Dispatch User CPU  Suspend DispWait RMISusp  IR Wait  FC Wait  FCAMRq
                      Time      Time      Time     Time     Time     Time      Time    Time     Time     Time     Time
CSAC TO TC26 GBURGES  11:17:25 11:17:25    .0023    .0023    .0022    .0013     .0001   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:29 11:17:29    .0021    .0021    .0020    .0015     .0001   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:29 11:17:32   2.6211    .0017    .0017    .0011    2.6193   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:32 11:17:32    .4257    .0159    .0157    .0041     .4100   .0002    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:32 11:17:35   2.9266    .0015    .0015    .0008    2.9251   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:35 11:17:44   9.3535    .0016    .0016    .0008    9.3519   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:44 11:17:46   1.4981    .0012    .0012    .0008    1.4969   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:46 11:17:47    .9179    .0010    .0010    .0008     .9169   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:47 11:17:50   3.3607    .6967    .3832    .3533    2.9774   .0012    .0000    .0000    .0000       0
RMST TO P012 CBAKER   11:17:55 11:17:55    .0220    .0220    .0035    .0029     .0186   .0000    .0000    .0185    .0000       0
RMST TO P012 CBAKER   11:17:55 11:17:57   1.8028    .0110    .0083    .0010    1.7945   .0000    .0000    .0027    .0000       0
STAT TO P012 CBAKER   11:17:59 11:17:59    .0025    .0025    .0024    .0016     .0001   .0000    .0000    .0000    .0000       0
STAT TO P012 CBAKER   11:17:59 11:18:00    .5878    .0013    .0013    .0008     .5865   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:17:50 11:18:01  10.8639    .0018    .0018    .0008   10.8621   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:01 11:18:02    .9011    .0017    .0017    .0008     .8994   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:02 11:18:02    .2401    .0026    .0026    .0008     .2374   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:02 11:18:02    .2184    .0017    .0017    .0008     .2167   .0000    .0000    .0000    .0000       0
STAT TO P012 CBAKER   11:18:00 11:18:04   3.6050    .0020    .0020    .0014    3.6030   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:02 11:18:04   1.5901    .0015    .0015    .0008    1.5886   .0000    .0000    .0000    .0000       0
STAT TO P012 CBAKER   11:18:04 11:18:05    .8993    .0014    .0014    .0010     .8979   .0000    .0000    .0000    .0000       0
STAT TO P012 CBAKER   11:18:05 11:18:07   2.1660   1.8732   1.3918   1.2435     .7742   .0016    .0000    .0000    .0000       0
STAT TO P012 CBAKER   11:18:07 11:18:07    .5329    .0016    .0016    .0012     .5313   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:04 11:18:08   4.2871    .0017    .0017    .0008    4.2855   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:08 11:18:09    .5435    .0017    .0017    .0008     .5418   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:09 11:18:09    .3935    .0016    .0016    .0008     .3919   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:09 11:18:11   1.6852    .0020    .0020    .0011    1.6832   .0000    .0000    .0000    .0000       0
CEMT TO P056 CBAKER   11:16:37 11:18:12  95.0977    .0042    .0042    .0035   95.0935   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:11 11:18:13   2.1833    .0010    .0010    .0008    2.1823   .0000    .0000    .0000    .0000       0
STAT TO TC26 GBURGES  11:18:13 11:18:17   4.2176    .0016    .0016    .0009    4.2160   .0001    .0000    .0000    .0000       0
```

Figure 169. Performance List report example (using FIELDS)

Example 8:

This example shows the Performance List report tailored to present File Control information.

```
CICSPA IN(SMFIN001),
     APPLID(applid1),
     SELECT(PERFORMANCE(INCLUDE(
          FCTOTAL(1-999999999)))),
     LIST(
         OUTPUT(LIST0001),
         FIELDS(TRAN,            Transaction identifier
                PROGRAM,         Program name
                STOP(TIMES),     Task stop time
                RESPONSE,        Transaction response time
                DISPATCH(TIME),  Dispatch time
                CPU(TIME),       CPU time
                SUSPEND(TIME),   Suspend time
                FCWAIT(TIME),    File I/O wait time
                FCAMCT,          File access-method requests
                FCADD,           File ADD requests
                FCBROWSE,        File Browse requests
                FCDELETE,        File DELETE requests
                FCGET,           File GET requests
                FCPUT,           File PUT requests
                FCTOTAL))        File Control requests
```

Example 9:

This example shows the Performance List report tailored to present Program Control information.

```
CICSPA IN(SMFIN002),
     APPLID(applid2),
     SELECT(PERFORMANCE(INCLUDE(
```

LIST examples

```
                PCLOADTI(1-999999999)))),
        LIST(OUTPUT(LIST0002),
            FIELDS(TRAN,              Transaction identifier
                    PROGRAM,          Program name
                    PCLINK,           Program LINK requests
                    PCLOAD,           Program LOAD requests
                    PCLOADTM(TIME),   Program Library wait time
                    PCSTGHWM,         Program Storage HWM above and below 16MB
                    PCXCTL,           Program XCTL requests
                    PC24BHWM,         Program Storage HWM below 16MB
                    PC24CHWM,         Program Storage (CDSA) HWM below 16MB
                    PC24RHWM,         Program Storage (RDSA) HWM below 16MB
                    PC24SHWM,         Program Storage (SDSA) HWM below 16MB
                    PC31AHWM,         Program Storage HWM above 16MB
                    PC31CHWM,         Program Storage (ECDSA) HWM above 16MB
                    PC31RHWM,         Program Storage (ERDSA) HWM above 16MB
                    PC31SHWM))        Program Storage (ESDSA) HWM above 16MB
```

Example 10:

In this example, the Performance List report lists all transactions that use DBCTL.

```
CICSPA LIST(
        SELECT(PERFORMANCE(EXCLUDE(
          CHARACTER(OWNER(DBCTL), Exclude transaction if no PSB name
          SUBSTR(1,1),VALUE(' '))))),
        FIELDS(TRAN,              Transaction identifier
                PROGRAM,          Program name
                STOP(TIMES),      Task stop time
                RESPONSE,         Transaction response time
                DISPATCH(TIME),   Dispatch time
                CPU(TIME),        CPU time
                SUSPEND(TIME),    Suspend time
                DBCTL(
                  PSBNAME,        PSB Name
                  DLICALLS,       Total DL/I Database calls
                  POOLWAIT,       Elapsed wait time for Pool Space
                  INTCWAIT,       Elapsed wait time for Intent Conflict
                  SCHTELAP,       Elapsed time for Schedule Process
                  DBIOELAP,       Elapsed time for Database I/O
                  PILOCKEL,       Elapsed time for PI Locking
                  THREDCPU)))     Thread TCB CPU time
```

Example 11:

```
CICSPA IN(SMFIN004),
        SELECT(PERFORMANCE(EXCLUDE(
          CHARACTER(OWNER(DBCTL), Exclude transaction if no PSB name
          SUBSTR(1,1),VALUE(' '))))),
      LIST(FIELDS(
                TRAN,             Transaction identifier
                DBCTL(PSBNAME),   PSB name
                START,            Task start time
                RESPONSE,         Transaction response time
                CPU,              CPU time
                DISPATCH,         Dispatch time
                SUSPEND,          Suspend time
                DBCTL(
                  POOLWAIT,       Elapsed wait time for Pool Space
                  INTCWAIT,       Elapsed wait time for Intent Conflict
                  SCHTELAP,       Elapsed time for Schedule Process
                  DBIOELAP,       Elapsed time for Database I/O
                  PILOCKEL,       Elapsed time for PI Locking
                  DBIOCALL,       Number of Database I/Os
                  DLICALLS)))     Total DL/I Database calls
```

This DBCTL example produces a Performance List report like that shown in Figure 170.

Note: The IMS Performance Analyzer (IMS PA) can provide a more comprehensive analysis of IMS DBCTL performance.

```
V2R1M0                                         CICS Performance Analyzer
                                                   Performance List

LIST0001 Printed at 11:49:51  3/24/2004    Data from 15:58:48  2/19/2004                       APPLID CICPAOR1      Page      1
DBCTL transactions
Tran PSB       Start       Response User CPU Dispatch  Suspend PoolWait   ICwait SchedElp DBIOElap PILockEl DBIOcall DLIcalls
               Time          Time     Time    Time      Time     Time     Time     Time     Time     Time
DLI0 DDLPSB51 15:58:47.251  1.0479   .0483   .9427     .1052    .0000    .0000    .0079    .0000    .0000       0        0
DLI0 DDLPSB51 15:58:49.634   .0615   .0118   .0168     .0447    .0000    .0000    .0034    .0000    .0000       0        0
DLI0 DDLPSB51 16:51:16.979  1.4467   .0474  1.2820     .1648    .0000    .0000    .0080    .0000    .0000       0        0
DLI0 DDLPSB51 16:58:03.662   .0934   .0114   .0176     .0758    .0000    .0000    .0034    .0000    .0000       0        0
DLI0 DDLPSB51 16:58:04.244   .0933   .0114   .0161     .0772    .0000    .0000    .0035    .0000    .0000       0        0
DLI2 DDLPSB51 17:00:16.874  3.0710   .0110   .1065    2.9644    .0000    .0000    .0034    .0000    .0000       0        0
DLI7 DDLPSB51 17:00:17.180  3.0274   .0116   .1441    2.8833    .0000    .0000    .0245    .0000    .0000       0        0
DLI3 DDLPSB51 17:00:17.212  3.2297   .0129   .0108    3.2189    .0000    .0000    .0056    .0000    .0000       0        0
DLI4 DDLPSB51 17:00:17.213  3.7488   .0109   .0112    3.7375    .0000    .0000    .0036    .0000    .0000       0        0
DLI9 DDLPSB51 17:00:17.217 18.7260   .0108  2.8553   15.8707    .0000    .0000    .0034    .0000    .0000       0        0
DLI1 DDLPSB51 17:00:17.218 18.8168   .0131   .0227   18.7941    .0000    .0000    .0041    .0000    .0000       0        0
DLI0 DDLPSB51 17:00:17.217 18.9042   .0130  2.7601   16.1441    .0000    .0000    .0034    .0000    .0000       0        0
 . . .
DLI0 DDLPSB51 13:14:14.187   .5046   .0439   .1369     .3676    .0000    .0000    .0035    .0000    .0000       0        0
DLI0 PSB99    13:01:22.918  5.9288  2.1340  3.8341    2.0947    .0000    .0000   1.0004    .0000    .0000       0        2
DLI0 PSB99    13:17:35.232  3.5302  2.1659  2.7387     .7914    .0000    .0000    .0010    .0000    .0000       0        2
DLI0 PSB99    13:45:38.833  3.4382  2.1744  2.4742     .9640    .0000    .0000    .0010    .0000    .0000       0        2
DLI0 PSB99    13:48:16.354  1.0711   .0428   .2282     .8429    .0000    .0000    .0024    .0000    .0000       0        1
DLI0 PSB99    13:48:24.131   .2516   .0118   .0184     .2332    .0000    .0000    .0010    .0000    .0000       0        1
DLI0 PSB99    13:48:25.012   .3658   .0117   .0168     .3490    .0000    .0000    .0011    .0000    .0000       0        1
DLI0 PSB99    13:48:25.963   .3745   .0118   .0174     .3571    .0000    .0000    .0010    .0000    .0000       0        1
DLI0 PSB99    13:48:26.919   .2871   .0116   .0180     .2691    .0000    .0000    .0010    .0000    .0000       0        1
DLI0 PSB99    13:48:27.907   .2511   .0117   .0170     .2341    .0000    .0000    .0010    .0000    .0000       0        1
DLI0 PSB99    15:36:20.458   .7925   .0451   .2664     .5261    .0000    .0000    .0010    .0000    .0000       0        1
DLI0 PSB99    15:38:29.047   .6985   .0466   .1953     .5032    .0000    .0000    .0011    .0000    .0000       0        2
DLI0 PSB99    15:38:50.508   .5742   .0457   .1260     .4482    .0000    .0000    .0010    .0000    .0000       0        2
DLI0 PSB99    15:49:07.072   .9596   .0486   .1879     .7717    .0000    .0000    .0010    .0000    .0000       0        2
DLI2 PSB99    15:53:29.716 91.8213  1.8717  2.0128   89.8085    .0000    .0000    .0010    .0000    .0000       0        1
DLI3 PSB99    15:53:30.402 156.501  1.9866 24.4980  132.003     .0000    .0000    .0055    .0000    .0000       0        1
DLI5 PSB99    15:53:30.497 233.355  1.9771 18.1590  215.196     .0000    .0000    .0049    .0000    .0000       0        1
DLI1 PSB99    15:56:53.478 95.2870  1.9511 16.4508   78.8363    .0000    .0000    .0050    .0000    .0000       0        1
```

Figure 170. Performance List report (DBCTL transactions)

Example 12:

```
CICSPA LIST(OUTPUT(EXPT0001),
             DDNAME(CPAOEX01),
             DELIMIT(';'),
             LABELS,
             TITLE1('LIST Exported Performance Data Extract'),
             FIELDS(TRAN,RESPONSE,TERM,STYPE,
                    USERID,RSYSID,PROGRAM))
```

This example produces a List Export extract data set and a Recap report like that shown in Figure 171. See "Exported Performance Data extract" on page 258 for more information on the Export facility.

```
V2R1M0                                         CICS Performance Analyzer
                                                   Performance List

EXPT0001 Printed at 21:11:10  6/26/2004    Data from 15:41:29  6/12/2004                       APPLID CICPAOR1      Page      1
LIST Exported Performance Data Extract

CPAOEX01 Extract has completed successfully
         Data Set Name . . . . CICSPA.LIST.EXPORT
         Record count  . . . .       339
```

Figure 171. Performance List Export extract (Recap report)

LISTX - Performance List Extended report

The **LISTX** operand requests the Performance List Extended report or the Cross-System Work Extended report.

The command format for the Performance List Extended report is:

```
CICSPA LISTX(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [BY(by1(ASCEND|DESCEND),
                by2(ASCEND|DESCEND),
                by3(ASCEND|DESCEND)),]
            [LIMIT(fieldname(proclim)),]
            [FIELDS(field1[(options)],...),]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
            [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The command format for the Cross-System Work Extended report is:

```
CICSPA LISTX(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [BY(UOWID),]
            [PRINTMultiple|NOPRINTMultiple,]
            [PRINTSingle|NOPRINTSingle,]
            [FIELDS(field1[(options)],...),]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
            [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **LSTXnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

BY

- For the Performance List Extended report:

  BY dictates the summarization order of the report. Up to three fields may be specified, where *by1* is the major sort field, *by2* the intermediate, and *by3* the minor sort field. Not all fields can be sort fields. See "LISTX(BY(field1,field2,field3)" on page 367 for the list of fields which are sort candidates.

  The default sort order is ASCEND (ascending). Specify DESCEND if you want a field sorted in descending order.

  If BY is not specified, the default is BY(TRAN,TERM).

- For the Cross-System Work Extended report:

BY(UOWID) identifies that the CMF records are grouped by network unit-of-work. No other BY fields may be specified.

PRINTMultiple
Print only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default for the report.

NOPRINTMultiple
Do not print the transaction performance records consisting of units-of-work that include multiple CMF records.

PRINTSingle
Print the transaction performance records consisting of units-of-work that include only a single CMF record. To get a listing containing these records only, you must suppress the default PRINTMultiple option by specifying NOPRINTMultiple as well.

LIMIT Optional. Limits the number of selected performance class records which will be processed. Only one field may be specified. The LIMIT *fieldname* must be the same as one of the field names specified in the BY operand. See "LISTX(LIMIT" on page 368 for the list of eligible fields.

proclim specifies the maximum number of records to be processed at a level corresponding to the location of the field parameter in the BY operand.

FIELDS
Specifies which fields are reported, the order of the columns, and the format of any time stamp fields. The sort fields specified in the BY operand must also be specified in the FIELDS operand. See "LISTX(FIELDS" on page 368 for the complete list of fields and their options by field type.

LINECOUNT
Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2
Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT|SELECT2(PERFORMANCE(INCLUDE|EXCLUDE
Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

LISTX(BY(field1,field2,field3)

The summarization order of the Performance List Extended report may be modified. This is done with the BY operand followed by one to three field names specified in the order of the desired sort precedence:

```
CICSPA LISTX[(BY(field1(ASCEND|DESCEND),...))]
```

Ascending sequence is the default. Specify DESCEND for descending sequence.

If BY is not specified, the default is **BY(TRAN).**

The sort fields that can be specified for the Performance List Extended report are listed in Table 18 on page 740. Refer to the **LISTX Report Form** column and the fields marked **S**.

Up to three sort fields may be selected from the list.

LISTX - Performance List Extended report

LISTX(BY(UOWID)

```
CICSPA LISTX[(BY(UOWID))]
```

This requests the Cross-System Work Extended report in which the CMF records are grouped by network unit-of-work in ascending sequence. No other BY fields may be specified.

LISTX(LIMIT

The LIMIT operand may be specified for the Performance List Extended report to limit the number of records processed for a particular field. This field must be the same as one of the fields specified in the BY clause.

The format of the command is:
```
CICSPA LISTX[(LIMIT(fieldname(proclim)))]
```

where *fieldname* is one of the fields selected for "LISTX(BY(field1,field2,field3)" on page 367.

LISTX(FIELDS

The Performance List Extended report and Cross-System Work Extended report may be tailored by modifying which fields are reported and the order in which they appear in the report. This is done with the FIELDS operand followed by the field names:
```
CICSPA LISTX[(FIELDS(field1[(options)],...))]
```

If the BY and FIELDS operands are not specified, the Performance List Extended report is produced with defaults:
```
CICSPA LISTX(BY(TRAN),
        FIELDS(TRAN,           Transaction ID
                STYPE,         Start type of transaction
                USERID,        User ID
                RSYSID,        Remote System ID
                PROGRAM,       Initial program name
                TASKNO,        Transaction number
                STOP(TIMET),   Stop time (hh:mm:ss.thm)
                RESPONSE,      Response time
                DISPATCH,      Dispatch time
                CPU,           CPU time
                SUSPEND,       Suspend time
                DISPWAIT,      Dispatch wait time
                FCWAIT,        File Control I/O wait time
                FCAMCT,        File Control access method calls
                IRWAIT))       Inter-Region (MRO) I/O wait time
```

This produces the default report shown in Figure 172 on page 369.

Notes:

1. The report format cannot be changed on an individual field basis. Even if only one field is required to be changed from the default, the entire list of field names must be entered.

2. Some field types require additional operands:

   - See "Time Stamp Fields" on page 369.
   - See "Clock (Time-Count) Fields" on page 370.

   CPU, DISPATCH, and FCWAIT above are examples of clock type fields. They could have been specified as CPU(TIME), DISPATCH(TIME), and FCWAIT(TIME). Instead they are allowed to assume the default TIME.

```
V2R1M0                                          CICS Performance Analyzer
                                                 Performance List Extended

LSTX0001 Printed at 11:53:45  2/19/2005 Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                    Page        1

Tran  SC Userid RSID Program   TaskNo Stop          Response Dispatch User CPU  Suspend DispWait  FC Wait  FCAMRq  IR Wait
                                      Time              Time     Time     Time     Time     Time     Time            Time
AADD  TO BRENNER      DFHSAALL      52 11:12:54.123   .0945    .0831    .0084    .0114    .0113    .0000       0   .0000
AADD  TO BRENNER      DFHSAALL      54 11:13:06.234   .0636    .0619    .0047    .0017    .0016    .0000       0   .0000
AADD  TP BRENNER      DFHSAALL      65 11:14:27.312   .0029    .0026    .0017    .0003    .0002    .0000       3   .0000
AADD  TO BRENNER      DFHSAALL     551 11:26:41.422   .0016    .0016    .0013    .0001    .0000    .0000       0   .0000
AADD  TP BRENNER      DFHSAALL     561 11:27:02.531   .0026    .0022    .0017    .0003    .0002    .0000       3   .0000
AADD  TO GBURGES      DFHSAALL     136 11:20:04.642   .0011    .0010    .0010    .0001    .0000    .0000       0   .0000
AADD  TO GBURGES      DFHSAALL     137 11:20:08.753   .0022    .0021    .0012    .0001    .0000    .0000       0   .0000
AADD  TP GBURGES      DFHSAALL     138 11:20:15.865   .0023    .0022    .0013    .0001    .0000    .0000       0   .0000
AADD  TO GBURGES      DFHSAALL     183 11:21:51.877   .0022    .0022    .0012    .0001    .0000    .0000       0   .0000
AADD  TP GBURGES      DFHSAALL     184 11:21:58.988   .0023    .0022    .0013    .0001    .0000    .0000       0   .0000
ABRW  TO CBAKER       DFHSABRW     139 11:16:51.099   .6982    .6717    .0385    .0264    .0111    .0051       6   .0000
ABRW  TP CBAKER       DFHSABRW     140 11:16:52.100   .0018    .0018    .0015    .0001    .0000    .0000       7   .0000
ABRW  TP CBAKER       DFHSABRW     141 11:16:52.210   .0021    .0020    .0015    .0001    .0000    .0000       7   .0000
ABRW  TP CBAKER       DFHSABRW     142 11:16:52.320   .0018    .0017    .0014    .0001    .0000    .0000       7   .0000
ABRW  TP CBAKER       DFHSABRW     143 11:16:53.331   .0020    .0019    .0015    .0001    .0000    .0000       7   .0000
ABRW  TP CBAKER       DFHSABRW     144 11:16:53.542   .0038    .0037    .0013    .0001    .0000    .0000       0   .0000
ABRW  TO CBAKER       DFHSABRW     365 11:22:38.653   .0020    .0019    .0015    .0001    .0000    .0000       6   .0000
ABRW  TP CBAKER       DFHSABRW     366 11:22:40.764   .0019    .0016    .0013    .0002    .0000    .0000       7   .0000
ABRW  TP CBAKER       DFHSABRW     367 11:22:41.875   .0018    .0018    .0015    .0001    .0000    .0000       7   .0000
ABRW  TP CBAKER       DFHSABRW     368 11:22:41.886   .0018    .0017    .0012    .0001    .0000    .0000       0   .0000
ABRW  TO CBAKER       DFHSABRW     206 11:24:34.921   .0052    .0021    .0021    .0031    .0000    .0000       0   .0030
ABRW  TO BRENNER      DFHSABRW      53 11:12:19.032   .5819    .0783    .0121    .5037    .0127    .0000       0   .4908
ABRW  TP BRENNER      DFHSABRW      59 11:13:17.140   .0070    .0034    .0029    .0036    .0000    .0000       0   .0036
ABRW  TP BRENNER      DFHSABRW      61 11:13:20.259   .0080    .0028    .0024    .0052    .0000    .0000       0   .0051
ABRW  TP BRENNER      DFHSABRW      62 11:13:21.366   .0064    .0027    .0023    .0036    .0000    .0000       0   .0036
ABRW  TP BRENNER      DFHSABRW      63 11:13:24.475   .0018    .0017    .0014    .0001    .0000    .0000       0   .0000
ABRW  TO GBURGES      DFHSABRW     109 11:19:44.584   .0071    .0040    .0027    .0030    .0000    .0000       0   .0030
ABRW  TP GBURGES      DFHSABRW     110 11:19:49.698   .0064    .0031    .0021    .0033    .0000    .0000       0   .0032
```

Figure 172. Performance List Extended report (default BY and FIELDS)

Character Fields

The command format is:

```
CICSPA LISTX[(FIELDS(fieldnames))]
```

The character fields that can be selected for the Performance List Extended report are listed in Table 18 on page 740. Refer to the **LISTX Report Form** column and the fields with data type **C** in their CMF Field ID.

Time Stamp Fields

The command format is:

```
CICSPA LISTX[(FIELDS(START|STOP(date-time-format)))]
```

The time stamp fields are:

START   Task start time
STOP   Task stop time

One or more of the following formats can be selected for the time stamp fields:

DATE   Date in the format *mm/dd/yyyy*
DATEISO   Date in the format *yyyy-mm-dd*
DATEM   Date in the format *mm/dd*
DATEYR   Date in the format *mm/dd/yy*
TIMET   Time in the format hh:mm:ss.thm. This is the default if START or STOP is specified without a format.
TIMEM   Time in the format hh:mm
TIMES   Time in the format hh:mm:ss

For more information on specifying time stamp fields, see "Suboperands for Time Stamp fields" on page 347.

LISTX - Performance List Extended report

Count Fields

The command format is:

`CICSPA LISTX[(FIELDS(...,fieldname,...))]`

The count fields that can be selected for the Performance List Extended report are listed in Table 18 on page 740. Refer to the **LISTX Report Form** column and the fields with data type **A** in their CMF Field ID.

Optionally, numeric values can be converted for reporting by specifying one of the following:

K Divide value by 1000, typically for count fields
M Divide value by 1000000, typically for count fields
KB Kilobytes (divide by 1024), typically for storage fields
MB Megabytes (divide by 1024x1024), typically for storage fields

Clock (Time-Count) Fields

The command format is:

`CICSPA LISTX[(FIELDS(fieldname1(TIME|COUNT),...))]`

For clock type fields, you can report the first part of the field (elapsed TIME) or the second part (COUNT of the number of times the condition occurred). The default is TIME. For more information on specifying clock fields, see "Suboperands for Clock type fields" on page 346.

The clock fields that can be selected for the Performance List report are listed in Table 18 on page 740. Refer to the **LISTX Report Form** column and the fields with data type **S** in their CMF Field ID.

Special (Time) Fields

The command format is:

`CICSPA LISTX[(FIELDS(fieldnames))]`

Special time fields are accumulations of several CMF time fields.

The special time fields that can be selected for the Performance List Extended report are:

COMMWAIT Communications wait time.
The total time value of the communications related fields IRWAIT,ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT.
IOWAIT Total I/O wait time.
The total time value of FCWAIT, JCWAIT, TDWAIT, and TSWAIT.
IRESP Transaction internal response time
JVMMTIME JVM Method time
JVMTIME-(JVMITIME+JVMRTIME)
RESPONSE Transaction response time
RMIOTIME Resource Manager Interface (RMI) Other time
RMISUSP-(IMSWAIT+DB2RDYQW+DB2CONWT+DB2WAIT)
Note that RMIOTIME was formerly RMIOTHER. RMIOTHER is now a CICS CMF Field in the new DFHRMI class.

LISTX examples

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 294 for the sample LISTX Report Forms. You can use these sample Report Forms with your Performance List Extended and Cross-System Work Extended reports. They provide a detailed picture of the many aspects affecting CICS system performance.

Example 1: Default report

```
CICSPA LISTX
```

This example generates the default Performance List Extended report.

LISTX examples

Example 2: Worst response times (all transactions)

Figure 173 shows an example of using the BY, LIMIT, and FIELDS operands to generate a Performance List Extended report sorted in descending order by response time. The LIMIT statement will limit the number of performance records processed to the first 20 and the resulting report will contain the 20 performance class records with the longest response time.

```
CICSPA LISTX(
        BY(RESPONSE(DESCEND)),
        LIMIT(RESPONSE(20)),
        FIELDS(TRAN,          Transaction ID
               TERM,          Terminal ID
               STYPE,         Start type of transaction
               USERID,        User ID
               RSYSID,        Remote System ID
               PROGRAM,       Initial program name
               TASKNO,        Transaction number
               STOP(TIMES),   Stop time (hh:mm:ss)
               RESPONSE,      Response time
               DISPATCH,      Dispatch time
               CPU,           CPU time
               SUSPEND,       Suspend time
               DISPWAIT,      Dispatch wait time
               FCWAIT,        File Control I/O wait time
               IRWAIT))       Inter-Region (MRO) I/O wait time
```

```
V2R1M0                                    CICS Performance Analyzer
                                          Performance List Extended

LSTX0001 Printed at  9:18:08  2/19/2005   Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005            Page      1

Tran Term SC Userid   RSID Program   TaskNo Stop      Response Dispatch User CPU  Suspend DispWait FC Wait  IR Wait
                                            Time      Time     Time     Time      Time    Time     Time     Time
CSNC      U  CBAKER        DFHCRNP       21 11:34:10  1386.70  1.4058   .0233     1385.29 .0208    .0000    .0000
CSNE      U  CBAKER        DFHZNAC       30 11:34:11  1379.15  .0980    .0226     1379.05 .0034    .0000    .0000
CSHQ      U  CBAKER        DFHSHSY       23 11:33:50  1362.60  .3326    .0344     1362.27 .0140    .0000    .0000
CWXN      U  CBAKER        DFHWBXN      119 11:34:06  1102.23  .0129    .0064     1102.22 .0218    .0000    .0000
CWXN      U  CBAKER        DFHWBXN      331 11:34:12  782.697  .0041    .0037     782.693 .0103    .0000    .0000
CEMT P052 TO CBAKER        DFHEMTP       61 11:23:34  592.514  .1550    .1244     592.359 .0026    .0000    .0000
CEMT S208 TO BRENNER       DFHEMTP       66 11:20:31  308.883  .0021    .0012     308.881 .0000    .0000    .0000
CWXN      U  CBAKER        DFHWBXN      333 11:25:52  282.577  .0068    .0034     282.570 .0048    .0000    .0000
CEMT TC32 TO GBURGES       DFHEMTP      597 11:32:06  187.648  .0999    .0741     187.548 .0003    .0000    .0000
STAT P012 TO CBAKER        DFH0STAT     263 11:33:38  158.917  .2575    .2219     158.659 .0016    .0000    .0000
CEMT P015 TO CBAKER        DFHEMTP       64 11:16:46  144.153  .0131    .0078     144.140 .0001    .0000    .0000
CEMT P056 TO CBAKER        DFHEMTP       67 11:20:33  141.000  .0045    .0032     140.996 .0000    .0000    .0000
CEMT P056 TO CBAKER        DFHEMTP       67 11:22:57  102.494  .0034    .0027     102.490 .0000    .0000    .0000
CEMT P056 TO CBAKER        DFHEMTP       67 11:18:12  95.0977  .0042    .0035     95.0935 .0000    .0000    .0000
CEMT P056 TO CBAKER        DFHEMTP       52 11:14:53  81.3172  .0043    .0031     81.3129 .0000    .0000    .0000
STAT R11  TO CBAKER        DFH0STAT     349 11:22:38  66.7720  .5048    .4620     66.2672 .0007    .0000    65.7887
CEMT P056 TO CBAKER        DFHEMTP       67 11:24:16  66.3943  .0033    .0031     66.3909 .0000    .0000    .0000
CEMT P056 TO CBAKER        DFHEMTP      270 11:33:25  62.1072  .0049    .0041     62.1022 .0000    .0000    .0000
CEMT P056 TO CBAKER        DFHEMTP      235 11:29:00  61.0066  .0015    .0010     61.0051 .0001    .0000    .0000
```

Figure 173. Performance List Extended report (using BY, LIMIT, FIELDS)

Example 3: Exclude CICS-supplied system transactions

Note that in the Performance List Extended report shown in Figure 173 on page 372 some of the worst response times are for the CICS-supplied long running system transactions. So the following command can be used to create a more useful Performance List Extended report as shown in Figure 174 by excluding those types of transactions.

```
CICSPA LISTX(SELECT(PERFORMANCE(
            EXCLUDE(TRAN(CSHQ,CSNC,CSNE,CSSY,CWXN)))),
            BY(RESPONSE(DESCEND)),
            LIMIT(RESPONSE(20)),
            FIELDS(TRAN,          Transaction ID
                   TERM,          Terminal ID
                   STYPE,         Start type of transaction
                   USERID,        User ID
                   RSYSID,        Remote System ID
                   PROGRAM,       Initial program name
                   TASKNO,        Transaction number
                   STOP(TIMES),   Stop time (hh:mm:ss)
                   RESPONSE,      Response time
                   DISPATCH,      Dispatch time
                   CPU,           CPU time
                   SUSPEND,       Suspend time
                   DISPWAIT,      Dispatch wait time
                   FCWAIT,        File Control I/O wait time
                   IRWAIT))       Inter-Region (MRO) I/O wait time
```

V2R1M0   CICS Performance Analyzer
                                          Performance List Extended

LSTX0001 Printed at 8:34:26 2/20/2005   Data from 11:10:51 2/14/2005 to 11:34:13 2/14/2005   Page   1

Tran	Term	SC	Userid	RSID	Program	TaskNo	Stop Time	Response Time	Dispatch Time	User CPU Time	Suspend Time	DispWait Time	FC Wait Time	IR Wait Time
CEMT	P052	TO	CBAKER		DFHEMTP	61	11:23:34	592.514	.1550	.1244	592.359	.0026	.0000	.0000
CEMT	S208	TO	BRENNER		DFHEMTP	66	11:20:31	308.883	.0021	.0012	308.881	.0000	.0000	.0000
CEMT	TC32	TO	GBURGES		DFHEMTP	597	11:32:06	187.648	.0999	.0741	187.548	.0003	.0000	.0000
STAT	P012	TO	CBAKER		DFH0STAT	263	11:33:38	158.917	.2575	.2219	158.659	.0016	.0000	.0000
CEMT	P015	TO	CBAKER		DFHEMTP	64	11:16:46	144.153	.0131	.0078	144.140	.0001	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:20:33	141.000	.0045	.0032	140.996	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:22:57	102.494	.0034	.0027	102.490	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:18:12	95.0977	.0042	.0035	95.0935	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	52	11:14:53	81.3172	.0043	.0031	81.3129	.0000	.0000	.0000
STAT	R11	TO	CBAKER		DFH0STAT	349	11:22:38	66.7720	.5048	.4620	66.2672	.0007	.0000	65.7887
CEMT	P056	TO	CBAKER		DFHEMTP	67	11:24:16	66.3943	.0033	.0031	66.3909	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	270	11:33:25	62.1072	.0049	.0041	62.1022	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	235	11:29:00	61.0066	.0015	.0010	61.0051	.0001	.0000	.0000
STAT	P012	TO	CBAKER		DFH0STAT	248	11:30:42	52.1363	.0021	.0016	52.1341	.0000	.0000	.0000
CEDA	S23C	TO	BRENNER		DFHEDAP	137	11:17:27	51.4018	1.1760	.2138	50.2257	.0281	.3115	.0000
CBAM	S23C	TO	BRENNER		DFHECBAM	43	11:12:50	51.3803	.0607	.0229	51.3196	.0003	.0000	.0000
CEMT	S23D	TO	BRENNER		DFHEMTP	140	11:21:24	51.3442	.0013	.0010	51.3429	.0000	.0000	.0000
CEMT	P056	TO	CBAKER		DFHEMTP	52	11:12:58	50.6951	.0029	.0027	50.6922	.0000	.0000	.0000
RMST	S23D	TO	BRENNER	CJB3		178	11:22:38	48.9210	.0136	.0012	48.9074	.0000	.0000	.0024

Figure 174. Performance List Extended report (filtering using SELECT)

LISTX examples

Example 4: Worst internal response time

But now the report is heavily influenced by some of the conversational transactions such as CBAM, CEDA, and CEMT. However, CICS PA provides a solution to this by using a special field name called IRESP (internal response time) which can be used to more easily interpret the actual response time by subtracting the terminal I/O wait time. So the following command will provide a Performance List Extended report sorted in descending order by Internal Response Time as shown in Figure 175.

```
CICSPA LISTX(SELECT(PERFORMANCE(
           EXCLUDE(TRAN(CSHQ,CSNC,CSNE,CSSY,CWXN)))),
           BY(IRESP(DESCEND)),
           LIMIT(IRESP(20)),
           FIELDS(
                   TRAN,          Transaction ID
                   TERM,          Terminal ID
                   STYPE,         Start type of transaction
                   USERID,        User ID
                   RSYSID,        Remote System ID
                   PROGRAM,       Initial program name
                   TASKNO,        Transaction number
                   STOP(TIMES),   Stop time (hh:mm:ss)
                   RESPONSE,      Response time
                   IRESP,         Transaction internal response time
                   DISPATCH,      Dispatch time
                   CPU,           CPU time
                   SUSPEND,       Suspend time
                   DISPWAIT,      Dispatch wait time
                   TCWAIT,        Terminal Control I/O wait time
                   IRWAIT))       Inter-Region (MRO) I/O wait time
```

```
V2R1M0                              CICS Performance Analyzer
                                    Performance List Extended

LSTX0001 Printed at  9:22:19  2/20/2005 Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                    Page     1

Tran Term SC Userid  RSID Program  TaskNo Stop      Response Int Resp Dispatch User CPU  Suspend DispWait TC Wait  IR Wait
                                          Time      Time     Time     Time     Time      Time    Time     Time     Time
STAT R11  TO CBAKER        DFH0STAT    349 11:22:38 66.7720  66.7720   .5048    .4620  66.2672   .0007    .0000  65.7887
CEDA P0AJ TO CBAKER        DFHEDAP     627 11:31:48 43.9778  43.9778   .6774    .1411  43.3004   .0179    .0000    .0000
CEMT P0AH TO CBAKER        DFHEMTP     603 11:30:16 38.5110  38.5110   .0981    .0190  38.4129   .0113    .0000    .0000
STAT R11  TO CBAKER        DFH0STAT    132 11:16:47 33.4829  33.4829  1.4544   1.3336  32.0285   .0050    .0000  30.3768
STAT P0AF TO CBAKER        DFH0STAT    330 11:21:32 22.9057  22.9057   .0508    .0106  22.8549   .0007    .0000    .0000
CPLT      U  CBAKER        DFHSIPLT      7 11:11:13 20.6297  20.6297   .3608    .0374  20.2689   .0198    .0000    .0000
CEMT P0AC TO CBAKER        DFHEMTP     217 11:25:38 17.4997  17.4997   .0688    .0111  17.4309   .0018    .0000    .0000
CPLT      U  CBAKER        DFHSIPLT      7 11:11:07 15.9915  15.9915   .3383    .0369  15.6532   .0155    .0000    .0000
CEMT P0AG TO CBAKER        DFHEMTP     354 11:21:55 13.3797  13.3797   .1218    .0104  13.2580   .0048    .0000    .0000
STAT P0AE TO CBAKER        DFH0STAT    292 11:20:12 10.5089  10.5089   .5722    .4729   9.9367   .0031    .0000    .0000
CEDA P0AJ TO CBAKER        DFHEDAP     686 11:32:03 10.1006  10.1006   .5349    .0849   9.5657   .0073    .0000    .0000
CALL P056 TO CBAKER        CALLJT1     262 11:30:56  8.2455   8.2452   .0155    .0034   8.2300   .0015    .0003    .0000
CEMT P0AB TO CBAKER        DFHEMTP     207 11:18:42  4.8000   4.8000   .0885    .0094   4.7115   .0024    .0000    .0000
TRUE P012 TO CBAKER        CALLCB1     261 11:30:52  4.5463   4.5463   .0017    .0014   4.5445   .0012    .0000    .0000
CLQ2      U  CBAKER        DFHLUP       28 11:11:13  3.8259   3.8259   .0818    .0068   3.7441   .0035    .0000   3.7344
CSFU      S  CBAKER        DFHFCU       28 11:11:18  3.7417   3.7417  2.8745    .2291    .8672   .0170    .0000    .0000
CEMT P0AG TO CBAKER        DFHEMTP     229 11:26:08  3.2382   3.2382   .0470    .0088   3.1912   .0018    .0000    .0000
CEMT P0AA TO CBAKER        DFHEMTP     127 11:16:03  2.6854   2.6854   .2655    .0161   2.4200   .0016    .0000    .0000
CEMT P0AC TO CBAKER        DFHEMTP     236 11:19:36  2.5078   2.5078   .0712    .0093   2.4365   .0014    .0000    .0000
```

Figure 175. Performance List Extended report (sort by IRESP)

Example 5: Worst response times by transaction

Figure 176 shows another example of using the BY, LIMIT, and FIELDS operands to generate a Performance List Extended report sorted in descending order by response time within ascending order by transaction ID. The LIMIT statement will limit the performance class records processed to the first 10 records for each unique transaction ID. The resulting report will be in ascending order by transaction ID, with a limit of 10 records for each unique transaction IDd. These records will represent the longest response times for each transaction ID.

```
CICSPA LISTX(
        BY(TRAN(ASCEND),
           RESPONSE(DESCEND)),
        LIMIT(RESPONSE(10)),
        FIELDS(TRAN,          Transaction ID
               RESPONSE,      Response time
               TERM,          Terminal ID
               STYPE,         Start type of transaction
               USERID,        User ID
               RSYSID,        Remote System ID
               PROGRAM,       Initial program name
               TASKNO,        Transaction number
               STOP(TIMES),   Stop time (hh:mm:ss)
               DISPATCH,      Dispatch time
               CPU,           CPU time
               SUSPEND,       Suspend time
               DISPWAIT,      Dispatch wait time
               FCWAIT,        File Control I/O wait time
               IRWAIT))       Inter-Region (MRO) I/O wait time
```

```
V2R1M0                              CICS Performance Analyzer
                                    Performance List Extended

LSTX0001 Printed at 11:44:10  2/19/2005    Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005              Page     1
Response Times by Transaction ID                            *** 10 worst times ***
Tran Response Term SC Userid   RSID Program    TaskNo Stop     Dispatch User CPU  Suspend DispWait  FC Wait  IR Wait
     Time                                             Time     Time     Time      Time    Time      Time     Time
AINQ  .0020 S23C TO BRENNER    DFHSAALL    328 11:21:09   .0019    .0012    .0001   .0000    .0000    .0000
AINQ  .0018 S23C TO BRENNER    DFHSAALL    580 11:27:34   .0017    .0014    .0001   .0000    .0000    .0000
AINQ  .0018 S23C TO BRENNER    DFHSAALL    112 11:14:46   .0017    .0016    .0001   .0000    .0000    .0000
AINQ  .0014 R11  TO CBAKER     DFHSAALL    232 11:26:30   .0013    .0012    .0000   .0000    .0000    .0000
AINQ  .0013 S23C TO BRENNER    DFHSAALL    569 11:27:19   .0013    .0013    .0001   .0000    .0000    .0000
AINQ  .0012 TC26 TO GBURGES    DFHSAALL    186 11:22:08   .0011    .0010    .0001   .0000    .0000    .0000
AMNU  .1724 S23D TO BRENNER    DFHSAMNU     50 11:11:53   .1720    .0091    .0004   .0004    .0000    .0000
AMNU  .0713 CAAD TO CBAKER     DFHSAMNU    249 11:19:41   .0519    .0085    .0194   .0042    .0000    .0000
AMNU  .0327 P015 TO CBAKER     DFHSAMNU    138 11:16:47   .0270    .0048    .0057   .0056    .0000    .0000
AMNU  .0228 R11  TO CBAKER     DFHSAMNU    158 11:20:54   .0227    .0012    .0000   .0000    .0000    .0000
AMNU  .0088 R11  TO CBAKER     DFHSAMNU    203 11:24:10   .0088    .0011    .0000   .0000    .0000    .0000
AMNU  .0028 S23C TP BRENNER    DFHSAMNU    576 11:27:28   .0012    .0013    .0017   .0000    .0000    .0000
AMNU  .0027 TC26 TP GBURGES    DFHSAMNU    188 11:22:17   .0026    .0012    .0001   .0000    .0000    .0000
AMNU  .0026 S23C TP BRENNER    DFHSAMNU    356 11:21:54   .0025    .0013    .0001   .0000    .0000    .0000
AMNU  .0023 TC26 TO GBURGES    DFHSAMNU    108 11:19:33   .0022    .0011    .0001   .0000    .0000    .0000
AMNU  .0018 S23C TP BRENNER    DFHSAMNU    566 11:27:14   .0017    .0012    .0001   .0000    .0000    .0000
AUPD  .0665 S208 TP BRENNER    DFHSAALL     64 11:13:38   .0160    .0141    .0505   .0012    .0000    .0056
AUPD  .0488 S208 TO BRENNER    DFHSAALL     54 11:12:27   .0335    .0046    .0154   .0153    .0000    .0000
AUPD  .0321 S208 TO BRENNER    DFHSAALL     57 11:12:34   .0301    .0050    .0019   .0002    .0000    .0016
AUPD  .0046 S23C TO BRENNER    DFHSAALL    362 11:22:19   .0046    .0014    .0001   .0000    .0000    .0000
AUPD  .0045 TC26 TO GBURGES    DFHSAALL    141 11:20:25   .0024    .0015    .0021   .0000    .0000    .0020
AUPD  .0041 TC26 TO GBURGES    DFHSAALL    181 11:21:42   .0025    .0016    .0016   .0000    .0000    .0015
AUPD  .0030 R11  TO CBAKER     DFHSAALL    205 11:24:20   .0018    .0017    .0012   .0000    .0000    .0012
AUPD  .0024 TC26 TP GBURGES    DFHSAALL    182 11:21:45   .0023    .0013    .0001   .0000    .0000    .0000
AUPD  .0022 TC32 TP GBURGES    DFHSAALL    378 11:24:21   .0022    .0012    .0001   .0000    .0000    .0000
AUPD  .0020 S23C TO BRENNER    DFHSAALL    358 11:22:10   .0019    .0015    .0001   .0000    .0000    .0000
B     .0031 TC26 TO GBURGES    ########    134 11:19:59   .0031    .0015    .0001   .0000    .0000    .0000
B     .0024 TC26 TO GBURGES    ########    135 11:19:59   .0024    .0014    .0001   .0001    .0000    .0000
```

Figure 176. Performance List Extended report (Top 10 Response Times by Transaction)

LISTX examples

Example 6:

An example of a Cross-System Work Extended report is shown in Figure 177.

The commands to request this report are shown in the following example:

```
CICSPA IN(SMFIN001),
       LISTX(OUTPUT(CROS0001),
         EXTERNAL(CPAXW001),
         NOPRINTMULTIPLE,PRINTSINGLE,
         BY(UOWID),
         FIELDS(TRAN,              Transaction ID
                RESPONSE,          Response time
                USERID,            User ID
                TASKNO,            Transaction number
                STOP(TIMET),       Stop time (hh:mm:ss.thm)
                DISPATCH(TIME),    Dispatch time
                DISPATCH(COUNT),   Dispatch count
                CPU(TIME),         CPU time
                SUSPEND(TIME),     Suspend time
                SUSPEND(COUNT),    Suspend count
                DISPWAIT(TIME),    Dispatch wait time
                DISPWAIT(COUNT),   Dispatch wait count
                IRWAIT(TIME)))     Inter-Region (MRO) I/O wait time
```

To use the CICS PA dialog to request this report, specify a LIST or LISTX Report Form for the Cross-System Work report.

```
V2R1M0                                     CICS Performance Analyzer
                                           Cross-System Work Extended

CROS0001 Printed at  0:56:39  7/14/2004 Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004                    Page       1

Tran Response Userid      TaskNo Stop         Dispatch Dispatch User CPU  Suspend  Suspend DispWait DispWait  IR Wait
     Time                        Time         Time     Count    Time      Time     Count   Time     Count     Time
CPLT    .3939 CICSUSER        6 15:41:19.419    .0782     3     .0325     .3158        3    .3149        2    .0000
CSSY 71.4053 CICSUSER      III 15:42:30.828  46.9670   401   17.6543   24.4382      401   9.9254      400    .0000
CSSY  4.9137 CICSUSER       12 15:41:24.346    .4928    66     .0476    4.4209       66   2.5618       65    .0000
CSSY  5.3932 CICSUSER       10 15:41:24.822    .8932    59     .2172    4.4999       59   2.7531       58    .0000
CSSY  5.6419 CICSUSER        9 15:41:25.069   1.6045    75     .1472    4.0374       75   2.9273       74    .0000
CSSY  5.9801 CICSUSER       13 15:41:25.434    .7826    87     .1627    5.1975       87   3.3042       86    .0000
CSSY  2.9653 CICSUSER       14 15:41:22.420   1.2597    14     .0555    1.7056       14    .0393       13    .0000
CSSY   .4372 CICSUSER       15 15:41:19.898    .0037     1     .0034     .4335        1    .0000        0    .0000
CSSY   .5093 CICSUSER       16 15:41:19.977    .0065     3     .0084     .5028        3    .0103        2    .0000
CGRP  5.4980 CICSUSER       11 15:41:24.928    .7931    69     .0613    4.7049       69   3.7141       68    .0000
CSSY  3.3315 CICSUSER       17 15:41:22.805    .0995    37     .0269    3.2321       37   1.3057       36    .0000
CPLT   .5196 CICSUSER        6 15:41:29.169    .1771     3     .0316     .3425        3    .3422        2    .0000
 . . .
```

Figure 177. Cross-System Work Extended report

SUMMARY - Performance Summary report

The **SUMMARY** operand requests the Performance Summary report or an Export file (see "Exported Performance Data extract" on page 258).

The command format for the Performance Summary report is:

```
CICSPA SUMMARY(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [NOTOTALS|TOTALS(n),]
            [INTERVAL(hh:mm:ss),]
            [BY(by1[,by2][,by3]),]
            [FIELDS(field1[(options)],...),]
            [LINECount(nnn),]
            [TITLE1('...1st 64 characters of title...'),]
            [TITLE2('...2nd 64 characters of title...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
            [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The command format for the Summary Export is:

```
CICSPA SUMMARY(
            [OUTPUT(ddname),]
            [DDNAME(ddname),]
            [DELIMIT('field-delimiter'),]
            [LABELS|NOLABELS,]
            [FLOAT,]
            [EXTERNAL(ddname),]
            [INTERVAL(hh:mm:ss),]
            [BY(by1[,by2][,by3]),]
            [FIELDS(field1[(options)],...),]
            [TITLE1('...1st 64 characters of title.of Recap...'),]
            [TITLE2('...2nd 64 characters of title of Recap...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
            [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

OUTPUT

Controls the report output DDname. See "OUTPUT" on page 344 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output, and xxxx is:

- **SUMM** for the Performance Summary report
- **EXPT** for the Recap report for the Summary Export

DDNAME

Specifies the DDname of the extract data set where the exported performance data is written. When this operand is specified, instead of producing the Summary report, CICS PA writes the Performance Summary data to the extract file and a Recap of the extract process is written to the OUTPUT operand report file.

The DDname can be up to 8 alphanumeric characters, with the first non-numeric. The CICS PA dialog assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99.** (See the sample JCL in Figure 166 on page 329).

DELIMIT

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon **DELIMIT(';').**

SUMMARY - Performance Summary report

LABELS|NOLABELS

LABELS indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

NOLABELS indicates that CICS PA is not to write a field labels record to the extract data set.

FLOAT

Write numeric fields in the extract in S390 FLOAT format. This only applies to the Summary Export when the FIELDS operand is specified.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

EXTERNAL

Specifies the DDname for the work data set used by the external SORT facility. This is optional for the Summary report and Export. If specified, CICS PA performs an external sort. If not specified, CICS PA performs an internal sort where the records are sorted in storage by CICS PA. The CICS PA dialog always generates the EXTERNAL operand with a DDname in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

NOTOTALS|TOTALS(n)

The totals level applies to the Summary HDB report.

Specify TOTALS(1) to TOTALS(8) to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. Default: **TOTALS(8)**

Specify TOTALS(0) for no subtotals, but print only the grand total.

Specify NOTOTALS for neither subtotals nor grand total.

INTERVAL

Specifies a time interval when the report summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

This operand applies only when the report or extract is sorted by transaction Start or Stop time; that is, when the BY operand specifies START or STOP or both. For reporting, data is accumulated for each interval in the report period and a report line or extract record is written for each interval. If INTERVAL is not specified, the default is **00:01:00** (1 minute).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:
1   becomes 00:01:00

1.1 becomes 00:01:00 (rounded down from 00:01:01)

1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

BY BY is optional. If the FIELDS operand is specified, BY is ignored.

Dictates the summarization order of the report. Up to 8 fields may be specified, and the order in which they are specified dictates the sort precedence. Only character fields, START, and STOP, can be sort fields. See "SUMMARY(BY" for further information and the list of fields that are sort candidates.

FIELDS

Specifies which fields are reported, the order in which they appear in the report or extract, and their summarization presentation. See "SUMMARY(FIELDS" for further information and the complete list of fields and their options by field type.

LINECount

Controls the number of lines per page in the Summary report. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the report title (left and right half of subheading line) for the Performance Summary report or the Export Recap. See "TITLE1 and TITLE2" on page 345 for further information.

SELECT|SELECT2(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

SUMMARY(BY

The summarization order of the Performance Summary report can be modified using the **BY** operand. However, the BY operand is optional. If the **FIELDS** operand is specified with key sort fields, the BY operand is ignored.

SUMMARY(FIELDS

The Performance Summary report may be tailored by specifying which fields are reported, the order in which they appear in the report, and the statistical functions used to summarize the data. This is done with the **FIELDS** operand followed by the field names, and for numeric fields, the function(s), and ordering sequence.

Up to 8 sort key fields can be specified, and at least one must be specified. The order of the key fields in the list defines the sort precedence, with the first key field being the major sort field. For each key field, the report can be ordered in ascending (**ASCEND**) or descending (**DESCEND**) sequence. The default is ascending. Sort key fields identify the grouping required for summarization, and can be START and STOP time, or any character field, including character user fields.

The sort key fields must be specified first in the list ahead of the numeric fields. The only fields that can appear ahead of a key field are TASKCNT or TASKTCNT.

In addition to the sort key fields, one numeric field can be selected as ascending or descending to activate **Alternate Sequencing.** This will change the order of report lines from sort key to numeric field sequence. For example, specify RESPONSE(DESCEND) to see the transactions with the highest response time at the top of the report. Note that grouping by sort key remains unaffected by alternate sequencing.

SUMMARY - Performance Summary report

The format of the command is:
* For CICS-defined character fields (see "Character fields" on page 382):

```
CICSPA SUMMARY(
        FIELDS(field1,field2,...))
```

* For CICS-defined count fields (see "Count fields" on page 383):

```
CICSPA SUMMARY(
        FIELDS(field1(AVE|DEV|MAX|MIN|TOT|nn
                     |RNGCOUNT(range)|RNGPERCENT(range),
                     ASCEND|DESCEND,K|M|KB|MB,...),...))
```

* For CICS-defined clock fields (see "Clock (Time-Count) Fields" on page 383):

```
CICSPA SUMMARY(
        FIELDS(field1(TIME|COUNT(AVE|DEV|MAX|MIN|TOT|nn
                     |RNGCOUNT(range)|RNGPERCENT(range),
                     ASCEND|DESCEND,...),...)))
```

* For character type user fields (see "User Fields" on page 384):

```
CICSPA SUMMARY(
        FIELDS(CHARACTER(OWNER(owner)[,SUBSTR(offset,length)]),...))
```

* For count and clock type user fields (see "User Fields" on page 384):

```
CICSPA SUMMARY(
        FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
              OWNER(owner),NUMBER(nnn),AVE|DEV|MAX|MIN|TOT|nn,
              ASCEND|DESCEND),...))
```

TASKCNT is a special field computed by CICS PA. It reports the number of performance records that are included in each summary line. TASKCNT can be reported anywhere on the print line by including it in the FIELDS specification. **TASKTCNT** is a special field is computed by CICS PA. It gives the total number of CMF task termination records processed. Specify whether to use TASKCNT or TASKTCNT for the summary statistical calculations. If both are specified, the first one is used in the calculations.

If character type fields are specified in the FIELDS list, they must be specified first (except for TASKCNT or TASKTCNT which can be ahead or amongst them).

All numeric fields (except TASKCNT and TASKTCNT) are summarized using any number of the following statistical functions:

AVE   Average (this is the default if a field is specified without a function).

DEV   Standard deviation.

MAX   Maximum value.

MIN   Minimum value.

TOT   Totals.

nn   nn% peak percentile, for example, 95%.

RNGCOUNT(range) or **RNGPERCENT(range)**
> Range. These functions calculate the number of tasks where the value of a field falls within a specified range or matches a single value. RNGCOUNT displays the result as a count; RNGPERCENT displays the result as a percentage of tasks.
>
> The range can be one of:
> * *lower limit - upper limit*
>   For example, RNGCOUNT(0.1-0.2)

To fall within the range, a field value must be greater than or equal to the lower limit, and less than the upper limit:

lower limit <= field value < upper limit

- *operator value*

  That is, one of the following comparison operators:

  = > >= < <=

  followed by a value. For example, `RNGPERCENT(<50)`

For time fields, values with a decimal place (such as 1.0) are interpreted as seconds; integers (such as 1000) are interpreted as milliseconds.

You cannot use RNGCOUNT or RNGPERCENT to report from an HDB.

Tip: RNGCOUNT and RNGPERCENT generate identical column headings. To distinguish between columns for percentages and counts, check the column values under the headings: percentages appear with a decimal point, whereas counts are integers, and hence have no decimal point.

Here are some example uses of RNGCOUNT and RNGPERCENT:

`RESPONSE(RNGCOUNT(<0.9))`
> Count of tasks with response time less than 0.9 seconds.

`RESPONSE(RNGPERCENT(0.5-1.0))`
> Percentage of tasks with response time >= 0.5 and < 1 seconds.

`FCAMCT(RNGCOUNT(>=10))`
> Count of tasks with 10 or more file access-method requests.

`CPU(TIME(RNGCOUNT(>0.5)))`
> Count of tasks with CPU time greater than 0.5 CPU seconds.

`SUSPEND(TIME(RNGCOUNT(>800)))`
> Count of tasks with suspend time greater than 800 milliseconds (0.8 seconds).

`SUSPEND(COUNT(RNGPERCENT(>5)))`
> Percentage of tasks suspended more than 5 times.

`EJBTOTAL(RNGCOUNT(=0))`
> Count of tasks with no EJB activity.

`EJBTOTAL(RNGCOUNT(>0))`
> Count of tasks with EJB activity.

Optionally, count values can be converted for reporting by specifying one of the following:

K	Divide value by 1000, typically for count fields
M	Divide value by 1000000, typically for count fields
KB	Kilobytes (divide by 1024), typically for storage fields
MB	Megabytes (divide by 1024x1024), typically for storage fields

If BY and FIELDS are both omitted, the default is:

```
CICSPA SUMMARY(
       FIELDS(TRAN(ASCEND),        Transaction ID
              TASKCNT,             Number of CMF Records
              RESPONSE(AVE,MAX),   Avg/Max Response Time
              DISPATCH,            Avg Dispatch Time
              CPU,                 Avg CPU Time
              SUSPEND(AVE,MAX),    Avg/Max Suspend Time
```

```
                              DISPWAIT,          Avg Dispatch Wait Time
                              FCWAIT,            Avg File Control I/O Wait Time
                              FCAMCT,            Avg FC Access Method Calls
                              IRWAIT,            Avg Inter-Region I/O Wait Time
                              SC24UHWM,          Avg User Storage HWM below 16MB
                              SC31UHWM))         Avg User Storage HWM above 16MB
```

Notes:

1. CPU, DISPATCH, SUSPEND, DISPWAIT, IRWAIT, and FCWAIT above are clock type fields. They are allowed to default to TIME(AVE), but equally you could specify CPU(TIME) or CPU(TIME(AVE)), DISPATCH(TIME) or DISPATCH(TIME(AVE)).

2. Two statistical functions are selected for the RESPONSE field. Specifying FIELDS(RESPONSE(AVE,MAX)) is the same as specifying FIELDS(RESPONSE,RESPONSE(MAX)) or FIELDS(RESPONSE(AVE),RESPONSE(MAX)).

Character fields

Up to eight character fields are allowed in the FIELDS list. The format of the command is:

- For CICS-defined fields:

  ```
  CICSPA SUMMARY(FIELDS(field1,field2,...))
  ```

  The CICS-defined character fields that can be selected for the Performance Summary report are listed in Table 18 on page 740. Refer to the **SUMMARY Report Form** column and the fields with data type **C** in their CMF Field ID.

- For character type user fields:

  ```
  CICSPA SUMMARY(FIELDS(...,CHARACTER(OWNER(owner)[,SUBSTR(offset,length)]),...))
  ```

  Specify the OWNER and SUBSTR entries exactly as they are in the BY list.

  OWNER   The eight-character name of the owner of the user field. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of *USER*.

  SUBSTR(offset,length)
                  This is used to report only part of the user field, up to 8 characters from the specified offset in the field. If SUBSTR is omitted, the entire field, limited to the first eight (8) characters, is reported.

Time Stamp Fields

The format of the command is:

```
CICSPA SUMMARY(FIELDS([START(TIMES),][STOP(TIMES)],...))
```

If specified, the Performance Summary report summarizes transaction activity over time, in specified intervals of time (default 1 minute).

The time stamp fields are:
START   Task start time
STOP   Task stop time

One or more of the following formats can be selected for the time stamp fields:
DATE   Date in the format *mm/dd/yyyy*
DATEISO   Date in the format *yyyy-mm-dd*
DATEM   Date in the format *mm/dd*
DATEYR   Date in the format *mm/dd/yy*
TIMET   Time in the format *hh:mm:ss.thm*
TIMEM   Time in the format hh:mm

<u>**TIMES**</u>	Time in the format *hh:mm:ss.* This is the default if START or STOP is specified without a format.
DATETIM	Date and time in the format *yyyy-mm-dd hh:mm:ss*

For more information on specifying time stamp fields, see "Suboperands for Time Stamp fields" on page 347.

Count fields

The format of the command is:

```
CICSPA SUMMARY(
       FIELDS(fieldname(AVE|DEV|MAX|MIN|TOT|nn,
                        ASCEND|DESCEND,K|KB|M|MB,...),...))
```

The count fields that can be selected for the Performance Summary report are listed in Table 18 on page 740. Refer to the **SUMMARY Report Form** column and the fields with data type **A** in their CMF Field ID.

Clock (Time-Count) Fields

The format of the command is:

```
CICSPA SUMMARY(
       FIELDS(field1(TIME|COUNT(AVE|DEV|MAX|MIN|TOT|nn,
                     ASCEND|DESCEND,...)),...))
```

For clock type fields, you can report the first part of the field (elapsed TIME) or the second part (COUNT of the number of times the condition occurred).

The default is to present the average elapsed time (**TIME(AVE)**). If only COUNT is specified, the average **(AVE)** will be the default. If another function (other than the average) is desired of either TIME or COUNT parts, both parameters must be specified. For example:

```
CICSPA SUMMARY(FIELDS(...,
       SUSPEND,            average elapsed suspend time
       SUSPEND(COUNT),     average number of times the transaction was suspended
       SUSPEND(TIME(DEV))) standard deviation of the elapsed suspend time
```

For more information on using clock fields, see "Suboperands for Clock type fields" on page 346.

The clock fields that can be selected for the Performance Summary report are listed in Table 18 on page 740. Refer to the **SUMMARY Report Form** column and the fields with data type **S** in their CMF Field ID.

Special (Time) Fields

The command format is:

```
CICSPA SUMMARY(
       FIELDS(fieldname(AVE|DEV|MAX|MIN|TOT|nn,ASCEND|DESCEND,...),...))
```

Special time fields are derived from several CMF time fields. Those that can be selected for the Performance Summary report are:

IRESP   Transaction internal response time

JVMMTIME JVM Method time
              JVMTIME-(JVMITIME+JVMRTIME)

RESPONSE Transaction response time

RMIOTIME Resource Manager Interface (RMI) Other time
              RMISUSP-(IMSWAIT+DB2RDYQW+DB2CONWT+DB2WAIT)

Note that RMIOTIME was formerly RMIOTHER. RMIOTHER is now a CICS CMF Field in the new DFHRMI class.

User Fields

User fields can be one of the following types:

CHARACTER   Character string

COUNT   Binary or packed counter

CLOCKTIME and **CLOCKCOUNT**

The two parts of clock type fields are:
CLOCKTIME   The elapsed time part
CLOCKCOUNT

The count of the number of times the condition occurred

All types of user fields may be specified in the Performance Summary report. The format of the command is:

- For character type user fields:

```
CICSPA SUMMARY(
        FIELDS(CHARACTER(OWNER(owner)[,SUBSTR(offset,length)]),...))
```

- For count and clock type user fields:

```
CICSPA SUMMARY(
        FIELDS(COUNT|CLOCKTIME|CLOCKCOUNT(
                OWNER(owner),NUMBER(nnn),AVE|DEV|MAX|MIN|TOT|nn,
                                         ASCEND|DESCEND,K|KB|M|MB),...))
```

The options are:

OWNER(owner)

Must be specified for all user field types. It is the 1-8 character owner of the user field, identified by the entry name in the ID= parameter of the TYPE=EMP entry in the MCT, or the CICS-assigned default name of *USER*.

SUBSTR(offset,length)

Optional. Applies to CHARACTER fields only. SUBSTR specifies that only part of the user field is to be reported. *Offset* is the starting position (from 1) in the character field, and *length* is the number of characters from that position to include. If SUBSTR is not specified, the default is the entire field up to a limit of 8 characters for this report.

NUMBER(nnn)

Must be specified for all numeric types (COUNT, CLOCKTIME, CLOCKCOUNT). It specifies the three-digit number that identifies a specific count or clock type field. For each owner, up to 256 count type and up to 256 clock type user fields can be defined to CICS, whereas only one character field can be defined for each owner.

AVE|DEV|MAX|MIN|TOT|nn|RNGCOUNT(range)|RNGPERCENT(range)

All count and clock type fields are summarized and can be presented using the same statistical functions available to CICS-defined fields.

However, unlike CICS-defined fields, you may specify only one function per user field. If more than one function is desired, the entire specification must be repeated. For example, the following command generates a Performance Summary report summarized by transaction and terminal, and displaying the maximum, minimum, and average elapsed times.

```
CICSPA SUMMARY(
        FIELDS(TRAN,TERM,TASKCNT,
               CLOCKTIME(OWNER(USER),NUMBER(001),MAX),
               CLOCKTIME(OWNER(USER),NUMBER(001),MIN),
               CLOCKTIME(OWNER(USER),NUMBER(001)))))
```

For more information on specifying user fields, see "Suboperands for User fields" on page 347.

DBCTL fields

The command format is:

```
CICSPA SUMMARY(FIELDS(DBCTL(field1(func,order),field2(func,order),...)))
```

where *func* is one of the functions AVE, DEV, MAX, MIN, TOT, nn, and *order* is ASCEND or DESCEND. The default is **(AVE,ASCEND).**

If your MCT collects DBCTL User Data (using the DFH$MCTD macro in SDFHSAMP), then the FIELDS operand can specify DBCTL fields. These are listed in Table 18 on page 740. Refer to the **SUMMARY Report Form** column and the fields with owner **DBCTL** in the CMF Field ID.

Note: The IMS Performance Analyzer (IMS PA) can provide a comprehensive analysis of IMS DBCTL performance.

SUMMARY examples

A set of sample Report Forms is provided with CICS PA. See Table 6 on page 294 for the sample SUMMARY Report Forms. You can use these sample Report Forms with your Performance Summary reports and exports. They provide a detailed picture of the many aspects affecting CICS system performance.

Example 1: Default report

```
CICSPA SUMMARY
```

Example 2: External sort

This example produces the default Performance Summary report using an external sort. CPAXW001 is the DDname of the External Work File.

```
CICSPA SUMMARY(EXTERNAL(CPAXW001))
```

Example 3: Summarize by user ID and terminal ID

This example shows how to request a Performance Summary report summarized by USERID and TERM. The IRESP field will default to AVE. The RESPONSE field will be displayed in three formats: AVE, MAX, and MIN. The CPU field will default to TIME with AVE. The MAX value of user clock number 1 will also be displayed.

```
CICSPA SUMMARY(
        FIELDS(USERID,
               TERM,
               IRESP,
               RESPONSE(AVE,MAX,MIN),
               CPU,
               SUSPEND(COUNT(AVE,MAX)),
               CLOCKTIME(OWNER(USER),NUMBER(1),MAX)))
```

Example 4: Summarize by user ID

SUMMARY examples

This example uses the FIELDS operand to generate a report summarized by USERID like that shown in Figure 178.

```
CICSPA SUMMARY(
        FIELDS(USERID,
               TASKCNT,
               RESPONSE(AVE,MAX),
               DISPATCH(TIME(AVE,MAX),COUNT),
               CPU(TIME(AVE,MAX,DEV)),
               SUSPEND(TIME(AVE,MAX)),
               DISPWAIT(TIME(AVE,MAX))))
```

```
V2R1M0                                         CICS Performance Analyzer
                                                Performance Summary

SUMM0001 Printed at 15:10:38  3/25/2004     Data from 12:10:51  3/24/2004 to 12:34:13  3/24/2004                  Page      1

                 Avg      Max      Avg      Max      Avg      Avg      Max    S Dev     Avg      Max      Avg      Max
Userid          Response Response Dispatch Dispatch Dispatch User CPU User CPU User CPU Suspend  Suspend DispWait DispWait
         #Tasks   Time     Time     Time     Time    Count    Time     Time     Time    Time     Time     Time     Time
BRENNER    248   4.1091  308.883   .0195   1.1760      16    .0072    .3537    .0279   4.0896  308.881   .0023    .0742
CBAKER     583  15.2302  1386.70   .0825  12.6769      48    .0251   3.1676    .1846  15.1477 1385.29    .0151   1.1645
GBURGES    503    .8682  187.648   .0183   1.4042      40    .0138   1.2888    .0898    .8499  187.548   .0004    .0991
```

Figure 178. Performance Summary report (by USERID)

Example 5: Summarize by transaction ID

Figure 179 shows a Performance Summary report example for CICS Transaction Server Version 1.3 or later. The FIELDS operand is used to generate a report summarized by transaction identifier.

```
CICSPA SUMMARY(
               FIELDS(TRAN,TASKCNT,IRESP,RESPONSE(AVE,MAX),
                      DISPATCH,CPU,SUSPEND,DISPWAIT,RMISUSP,IRWAIT,
                      QRCPU,QRMODDLY,CHMODECT))
```

```
V2R1M0                                         CICS Performance Analyzer
                                                Performance Summary

SUMM0001 Printed at  9:03:52  2/22/2005     Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                  Page      1

                 Avg      Avg      Max      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Tran            Int Resp Response Response Dispatch User CPU Suspend  DispWait RMI Susp IR Wait  QR CPU   QrModDly ChngMode
         #Tasks   Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time
CECI        60   .0199    .5371   5.1445   .0195    .0042    .5176    .0004    .0000    .0000    .0035    .0002       0
CEDA        98   .6086   1.9304  51.4018   .0602    .0218   1.8702    .0008    .0000    .0000    .0185    .0006       2
CEMT       135   .6350  19.2961  592.514   .0155    .0062  19.2806    .0044    .0000    .0000    .0057    .0043       1
CESD        12   .1128    .1128   1.2902   .0211    .0021    .0917    .0916    .0000    .0000    .0018    .0913       0
CESF         6   .0180    .0180    .0468   .0175    .0042    .0004    .0004    .0000    .0000    .0024    .0003       3
CESN        21   .0334    .0334    .2046   .0324    .0090    .0010    .0009    .0000    .0000    .0021    .0006       2
```

Figure 179. Performance Summary report (by TRAN)

Example 6: Summarize by transaction ID, terminal ID and user ID

Figure 180 on page 387 shows a Performance Summary report example using the FIELDS operand with three sort fields. To create a similar report, use the following command:

```
CICSPA SUMMARY(
        FIELDS(TRAN,TERM,USERID,
               TASKCNT,
               RESPONSE(AVE,MAX),
               DISPATCH(TIME(AVE,MAX),COUNT),
               CPU(TIME(AVE,MAX)),
               SUSPEND(TIME(AVE,MAX)),
               DISPWAIT))
```

```
V2R1M0                                    CICS Performance Analyzer
                                           Performance Summary

SUMM0001 Printed at  9:30:06  2/18/2005      Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                    Page     1

                            Avg      Max      Avg      Max      Avg      Avg      Max      Avg      Max      Avg
Tran    Term    Userid  #Tasks Response Response Dispatch Dispatch Dispatch User CPU User CPU Suspend Suspend DispWait
                            Time     Time     Time     Time    Count    Time     Time     Time     Time     Time
AADD    S23C    BRENNER      5   .0330    .0945    .0303    .0831        3   .0035    .0084    .0028    .0114    .0027
AADD    S23C                 5   .0330    .0945    .0303    .0831        3   .0035    .0084    .0028    .0114    .0027
AADD    TC26    GBURGES      5   .0020    .0023    .0019    .0022        1   .0012    .0013    .0001    .0001    .0000
AADD    TC26                 5   .0020    .0023    .0019    .0022        1   .0012    .0013    .0001    .0001    .0000
AADD                        10   .0175    .0945    .0161    .0831        2   .0024    .0084    .0014    .0114    .0013

ABRW    P015    CBAKER      10   .0717    .6982    .0690    .6717        3   .0051    .0385    .0027    .0264    .0011
ABRW    P015                10   .0717    .6982    .0690    .6717        3   .0051    .0385    .0027    .0264    .0011
ABRW    R11     CBAKER       1   .0052    .0052    .0021    .0021        7   .0021    .0021    .0031    .0031    .0000
ABRW    R11                  1   .0052    .0052    .0021    .0021        7   .0021    .0021    .0031    .0031    .0000
ABRW    S23D    BRENNER      5   .1210    .5819    .0178    .0783        7   .0042    .0121    .1032    .5037    .0026
ABRW    S23D                 5   .1210    .5819    .0178    .0783        7   .0042    .0121    .1032    .5037    .0026
ABRW    TC26    GBURGES     57   .0070    .0156    .0033    .0059        7   .0022    .0028    .0037    .0128    .0000
ABRW    TC26                57   .0070    .0156    .0033    .0059        7   .0022    .0028    .0037    .0128    .0000
ABRW    TC32    GBURGES     61   .0030    .0120    .0029    .0120        1   .0016    .0019    .0001    .0002    .0000
ABRW    TC32                61   .0030    .0120    .0029    .0120        1   .0016    .0019    .0001    .0002    .0000
ABRW                       134   .0142    .6982    .0085    .6717        4   .0022    .0385    .0057    .5037    .0002
```

Figure 180. Performance Summary report (by TRAN, TERM, USERID)

SUMMARY examples

Example 7: Summarize by transaction ID and APPLID

Figure 181 shows a Performance Summary report example using the FIELDS operand to generate a report summarized by APPLID within transaction identifier. To create a similar report, use the following command:

```
CICSPA SUMMARY(
            FIELDS(TRAN,APPLID,TASKCNT,IRESP,RESPONSE(AVE,MAX),
                   DISPATCH,CPU,SUSPEND,DISPWAIT,
                   RMISUSP,FCWAIT,IRWAIT,TCWAIT))
```

```
V2R1M0                                     CICS Performance Analyzer
                                             Performance Summary

SUMM0001 Printed at  9:24:51  2/22/2005     Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                    Page     1

                       Avg      Avg      Max      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Tran   APPLID   #Tasks Int Resp Response Response Dispatch User CPU Suspend DispWait RMI Susp FC Wait  IR Wait  TC Wait
                       Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time
AADD   IYK2Z1V1      5 .0020    .0020    .0023    .0019    .0012    .0001    .0000    .0000    .0000    .0000    .0000
AADD   IYK2Z1V3      5 .0330    .0330    .0945    .0303    .0035    .0028    .0027    .0000    .0000    .0000    .0000
AADD                10 .0175    .0175    .0945    .0161    .0024    .0014    .0013    .0000    .0000    .0000    .0000

ABRW   IYK2Z1V1     63 .0160    .0160    .5819    .0044    .0023    .0116    .0002    .0000    .0000    .0113    .0000
ABRW   IYK2Z1V3     71 .0127    .0127    .6982    .0122    .0021    .0004    .0002    .0000    .0001    .0000    .0000
ABRW               134 .0142    .0142    .6982    .0085    .0022    .0057    .0002    .0000    .0000    .0053    .0000

AINQ   IYK2Z1V1      3 .0022    .0022    .0040    .0017    .0013    .0005    .0000    .0000    .0000    .0004    .0000
AINQ   IYK2Z1V3      7 .0019    .0019    .0024    .0018    .0014    .0002    .0000    .0000    .0000    .0000    .0000
AINQ                10 .0020    .0020    .0040    .0017    .0014    .0003    .0000    .0000    .0000    .0001    .0000

AMNU   IYK2Z1V1      5 .0418    .0418    .1724    .0417    .0027    .0001    .0001    .0000    .0000    .0000    .0000
AMNU   IYK2Z1V3      7 .0164    .0164    .0713    .0125    .0028    .0039    .0014    .0000    .0000    .0000    .0000
AMNU                12 .0270    .0270    .1724    .0246    .0028    .0023    .0008    .0000    .0000    .0000    .0000

AUPD   IYK2Z1V1      8 .0203    .0203    .0665    .0112    .0039    .0091    .0021    .0000    .0000    .0015    .0000
AUPD   IYK2Z1V3      4 .0026    .0026    .0046    .0025    .0013    .0001    .0000    .0000    .0000    .0000    .0000
AUPD                12 .0144    .0144    .0665    .0083    .0030    .0061    .0014    .0000    .0000    .0010    .0000

B      IYK2Z1V1      2 .0028    .0028    .0031    .0027    .0015    .0001    .0000    .0000    .0000    .0000    .0000
B                    2 .0028    .0028    .0031    .0027    .0015    .0001    .0000    .0000    .0000    .0000    .0000

BING   IYK2Z1V1      1 .0024    .0024    .0024    .0023    .0016    .0001    .0000    .0000    .0000    .0000    .0000
BING                 1 .0024    .0024    .0024    .0023    .0016    .0001    .0000    .0000    .0000    .0000    .0000
BINQ   IYK2Z1V1      1 .0027    .0027    .0027    .0027    .0015    .0001    .0000    .0000    .0000    .0000    .0000
BINQ                 1 .0027    .0027    .0027    .0027    .0015    .0001    .0000    .0000    .0000    .0000    .0000

CALL   IYK2Z1V1     16 2.5156   2.5159   8.2455   .0059    .0021    2.5100   .0015    2.1244   .0000    .0000    .0003
CALL   IYK2Z1V3      9 2.0918   2.0920   2.1935   .0101    .0021    2.0819   .0009    2.0812   .0000    .0000    .0002
CALL                25 2.3630   2.3633   8.2455   .0074    .0021    2.3559   .0013    2.1088   .0000    .0000    .0003
```

Figure 181. Performance Summary report (by TRAN and APPLID)

Example 8: Summarize by user ID and transaction ID

Figure 182 shows an example of using the FIELDS operand to generate a
Performance Summary report summarized by USERID and TRAN. To create a
similar report, use the following command:

```
CICSPA SUMMARY(
          FIELDS(USERID,TRAN,
                 TASKCNT,
                 RESPONSE(AVE,MAX),
                 DISPATCH(TIME(AVE,MAX),COUNT),
                 CPU(TIME(AVE,MAX)),
                 SUSPEND(TIME(AVE,MAX)),
                 DISPWAIT(TIME(AVE,MAX))))
```

```
V2R1M0                                     CICS Performance Analyzer
                                             Performance Summary

SUMM0001 printed at  9:31:48  2/18/2005     Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                    Page    1
```

Userid	Tran	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Max Dispatch Time	Avg Dispatch Count	Avg User CPU Time	Max User CPU Time	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	Max DispWait Time
BRENNER	AADD	5	.0330	.0945	.0303	.0831	3	.0035	.0084	.0028	.0114	.0027	.0113
BRENNER	ABRW	5	.1210	.5819	.0178	.0783	7	.0042	.0121	.1032	.5037	.0026	.0127
BRENNER	AINQ	7	.0019	.0024	.0018	.0022	1	.0014	.0016	.0002	.0008	.0000	.0000
BRENNER	AMNU	6	.0305	.1724	.0301	.1720	2	.0025	.0091	.0004	.0017	.0001	.0004
BRENNER	AUPD	5	.0308	.0665	.0172	.0335	6	.0053	.0141	.0136	.0505	.0034	.0153
BRENNER	CALL	6	2.1395	2.2128	.0024	.0031	9	.0018	.0028	2.1370	2.2103	.0006	.0010
BRENNER	CBAM	8	14.4793	51.3803	.0198	.0607	6	.0071	.0229	14.4595	51.3196	.0022	.0167
BRENNER	CEDA	23	5.3006	51.4018	.1142	1.1760	8	.0255	.2138	5.1864	50.2257	.0018	.0281
BRENNER	CEMT	41	12.8879	308.883	.0038	.0104	2	.0025	.0046	12.8841	308.881	.0026	.0742
BRENNER	CESF	4	.0250	.0468	.0245	.0462	4	.0049	.0067	.0006	.0009	.0005	.0009
. . . .													
BRENNER	SAL1	8	.0601	.1835	.0040	.0083	7	.0032	.0065	.0562	.1751	.0018	.0074
BRENNER	STAT	16	7.9208	48.7524	.0427	.3774	154	.0286	.3537	7.8781	48.7509	.0006	.0068
BRENNER	STOC	3	.6400	.7984	.0036	.0052	4	.0027	.0030	.6364	.7931	.0015	.0039
BRENNER	TRUE	24	1.1053	2.1009	.0010	.0022	5	.0007	.0014	1.1043	2.0987	.0004	.0016
BRENNER	1111	1	.0021	.0021	.0020	.0020	2	.0016	.0016	.0001	.0001	.0000	.0000
BRENNER	3333	1	.0028	.0028	.0020	.0020	2	.0017	.0017	.0008	.0008	.0000	.0000
BRENNER		248	4.1091	308.883	.0195	1.1760	16	.0072	.3537	4.0896	308.881	.0023	.0742
CBAKER	ABRW	11	.0657	.6982	.0629	.6717	3	.0048	.0385	.0028	.0264	.0010	.0111
CBAKER	AINQ	1	.0014	.0014	.0013	.0013	1	.0012	.0012	.0000	.0000	.0000	.0000
CBAKER	AMNU	4	.0339	.0713	.0276	.0519	4	.0039	.0085	.0063	.0194	.0024	.0056
CBAKER	AUPD	3	.0019	.0030	.0015	.0018	1	.0014	.0017	.0005	.0012	.0000	.0000
CBAKER	CALL	5	3.3511	8.2455	.0183	.0687	10	.0031	.0067	3.3328	8.2300	.0012	.0022
CBAKER	CATA	10	.0280	.0537	.0151	.0438	4	.0062	.0122	.0129	.0281	.0002	.0003
CBAKER	CATD	6	.0372	.0590	.0159	.0437	6	.0056	.0091	.0213	.0306	.0024	.0123
CBAKER	CATR	2	.0290	.0296	.0283	.0287	3	.0047	.0047	.0006	.0009	.0006	.0008
CBAKER	CBAM	3	2.4702	5.0107	.0012	.0013	2	.0010	.0011	2.4690	5.0094	.0000	.0000
CBAKER	CECI	1	3.3215	3.3215	.5039	.5039	9	.0254	.0254	2.8175	2.8175	.0043	.0043
CBAKER	CEDA	2	27.0392	43.9778	.6062	.6774	55	.1130	.1411	26.4331	43.3004	.0126	.0179
CBAKER	CEMT	77	24.2383	592.514	.0229	.2655	5	.0078	.1244	24.2154	592.359	.0062	.2938
CBAKER	CESD	12	.1128	1.2902	.0211	.2044	2	.0021	.0065	.0917	1.0858	.0916	1.0858
CBAKER	CESN	21	.0334	.2046	.0324	.2043	3	.0090	.0406	.0010	.0060	.0009	.0059
CBAKER	CETR	1	.8982	.8982	.1132	.1132	8	.0132	.0132	.7850	.7850	.0068	.0068
CBAKER	CGRP	2	.5862	.7601	.0571	.0721	18	.0076	.0078	.5291	.6880	.4134	.5044
CBAKER	CITS	5	.0111	.0153	.0058	.0096	4	.0035	.0041	.0053	.0091	.0001	.0002

Figure 182. Performance Summary report (by USERID and TRAN)

SUMMARY examples

Example 9: File Control activity

This example shows a Performance Summary report tailored to present File Control information.

```
CICSPA IN(SMFIN001),
       APPLID(applid1),
       SELECT(PERFORMANCE(INCLUDE(FCTOTAL(1-999999999)))),
       SUMMARY(
         OUTPUT(SUMM0001),
         FIELDS(
           TRAN,               Summarize by Transaction ID
           TASKCNT,            Total Task count
           RESPONSE(AVE),      Transaction response time
           DISPATCH(TIME(AVE)), Dispatch time
           CPU(TIME(AVE)),     CPU time
           SUSPEND(TIME(AVE)), Suspend time
           FCWAIT(TIME(AVE)),  File I/O wait time
           FCAMCT(AVE),        File access-method requests
           FCADD(AVE),         File ADD requests
           FCBROWSE(AVE),      File Browse requests
           FCDELETE(AVE),      File DELETE requests
           FCGET(AVE),         File GET requests
           FCPUT(AVE),         File PUT requests
           FCTOTAL(AVE)))      File Control requests
```

Example 10: Program Control activity

This example shows a Performance Summary report tailored to present Program Control information.

```
CICSPA IN(SMFIN002),
       APPLID(applid2),
       SELECT(PERFORMANCE(INCLUDE(PCLOADTM(TIME(1-999999999))))),
       SUMMARY(OUTPUT(SUMM0002),
         FIELDS(
           TRAN,               Summarize by Transaction ID
           TASKCNT,            Total Task count
           PCLINK(AVE),        Program LINK requests
           PCLOAD(AVE),        Program LOAD requests
           PCLOADTM(TIME(AVE)), Program Library wait time
           PCSTGHWM(AVE),      Program Storage HWM above and below 16MB
           PCXCTL(AVE),        Program XCTL requests
           PC24BHWM(AVE),      Program Storage HWM below 16MB
           PC24CHWM(AVE),      Program Storage (CDSA) HWM below 16MB
           PC24RHWM(AVE),      Program Storage (RDSA) HWM below 16MB
           PC24SHWM(AVE),      Program Storage (SDSA) HWM below 16MB
           PC31AHWM(AVE),      Program Storage HWM above 16MB
           PC31CHWM(AVE),      Program Storage (ECDSA) HWM above 16MB
           PC31RHWM(AVE),      Program Storage (ERDSA) HWM above 16MB
           PC31SHWM(AVE)))     Program Storage (ESDSA) HWM above 16MB
```

Example 11: Transaction activity each 30 seconds

In this example, each Transaction ID's activity is broken down into 30 second time intervals. This allows you to measure transaction performance variations over time.

```
CICSPA SUMMARY(
          INTERVAL(00:30),             Time Interval is 30 seconds
          FIELDS(                      Sort by Tran ID and Start Interval
               TRAN,                   Transaction ID
               START,                  Transaction Start Time
               TASKCNT,                Total Task count
               RESPONSE(AVE,MAX),      Transaction response time
               DISPATCH(TIME(AVE)),    Dispatch time
               CPU(TIME(AVE)),         CPU time
               SUSPEND(TIME(AVE)),     Suspend time
               DISPWAIT(TIME(AVE)),    Redispatch wait time
               FCWAIT(TIME(AVE)),      File I/O wait time
               FCAMCT(AVE),            File access-method requests
               IRWAIT(TIME(AVE)),      MRO link wait time
               SC24UHWM(AVE),          UDSA HWM below 16MB
               SC31UHWM(AVE)))         EUDSA HWM above 16MB
```

```
V2R1M0                                    CICS Performance Analyzer
                                            Performance Summary

SUMM0001 Printed at 15:47:48  2/28/2005      Data from 15:04:02  2/27/2005 to 15:07:28  2/27/2005                    Page    1

                       Avg      Max      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Tran   Start    #Tasks Response Response Dispatch User CPU Suspend DispWait FC Wait  FCAMRq   IR Wait SC24UHWM SC31UHWM
       Interval        Time     Time     Time     Time     Time     Time     Time             Time
TR01   15:04:00   89   .0584    .1233    .0012    .0011    .0572    .0015    .0025      3     .0000       0      88363
TR01   15:04:30  109   .0562    .1220    .0011    .0011    .0550    .0016    .0026      3     .0000       0      88360
TR01   15:05:00  104   .0551    .1328    .0013    .0012    .0538    .0017    .0027      3     .0000       0      88356
TR01   15:05:30  106   .0550    .1041    .0011    .0011    .0539    .0018    .0028      3     .0000       0      88355
TR01   15:06:00   86   .0588    .1354    .0012    .0011    .0576    .0016    .0026      3     .0000       0      88362
TR01   15:06:30   99   .0557    .0823    .0012    .0011    .0545    .0018    .0029      3     .0000       0      88352
TR01   15:07:00  117   .0549    .0912    .0012    .0011    .0537    .0016    .0024      3     .0000       0      88353
TR01            710   .0562    .1354    .0012    .0011    .0550    .0016    .0026      3     .0000       0      88357

TR02   15:04:00  101   .1719    .3674    .0030    .0029    .1689    .0055    .0134     18     .0000       0      88358
TR02   15:04:30   98   .1612    .3661    .0029    .0028    .1583    .0056    .0134     18     .0000       0      88353
TR02   15:05:00  105   .1548    .3683    .0029    .0029    .1519    .0045    .0116     18     .0000       0      88356
TR02   15:05:30  104   .1693    .4151    .0030    .0029    .1663    .0048    .0122     19     .0000       0      88363
TR02   15:06:00  105   .1631    .4046    .0030    .0029    .1601    .0043    .0122     18     .0000       0      88359
TR02   15:06:30   89   .1572    .3499    .0030    .0028    .1541    .0049    .0125     18     .0000       0      88357
TR02   15:07:00   88   .1541    .3164    .0031    .0028    .1511    .0050    .0123     18     .0000       0      88354
TR02            690   .1619    .4151    .0030    .0029    .1589    .0049    .0125     18     .0000       0      88357
```

Figure 183. Performance Summary report (by START Interval within TRAN)

SUMMARY examples

Example 12: Transaction activity per minute

In this example, transaction activity is broken down into 1 minute intervals. Every transaction that completed processing during the interval is reported. This allows you to look at periods of time during which performance may be degraded and examine each Transaction ID's usage.

```
CICSPA SUMMARY(
          INTERVAL(01:00),            Time Interval is 1 minute
          FIELDS(                     Sort by Stop Interval and Tran ID
                STOP,                 Transaction Stop Time
                TRAN,                 Transaction ID
                TASKCNT,              Total Task count
                RESPONSE(AVE,MAX),    Transaction response time
                DISPATCH(TIME(AVE)),  Dispatch time
                CPU(TIME(AVE)),       CPU time
                SUSPEND(TIME(AVE)),   Suspend time
                DISPWAIT(TIME(AVE)),  Redispatch wait time
                FCWAIT(TIME(AVE)),    File I/O wait time
                FCAMCT(AVE),          File access-method requests
                IRWAIT(TIME(AVE)),    MRO link wait time
                SC24UHWM(AVE),        UDSA HWM below 16MB
                SC31UHWM(AVE)))       EUDSA HWM above 16MB
```

```
V2R1M0                                  CICS Performance Analyzer
                                         Performance Summary

SUMM0001 Printed at 15:47:48  2/19/2005    Data from 15:04:02  2/13/2005 to 15:07:28  2/13/2005                    Page    1

                     Avg     Max     Avg     Avg     Avg     Avg     Avg     Avg     Avg    Avg      Avg
Stop     Tran   #Tasks Response Response Dispatch User CPU Suspend DispWait FC Wait FCAMRq IR Wait SC24UHWM SC31UHWM
Interval             Time    Time    Time    Time    Time    Time    Time           Time
15:04:00 TR01    198   .0572   .1233   .0012   .0011   .0560   .0016   .0026      3   .0000     0    88361
15:04:00 TR02    199   .0569   .2220   .0012   .0011   .0557   .0016   .0024      3   .0000     0    88359
15:04:00 TR03    201   .1743   .3789   .0030   .0029   .1713   .0053   .0125     18   .0000     0    88360
15:04:00 TR04    199   .1666   .3674   .0029   .0028   .1637   .0056   .0134     18   .0000     0    88356
  . . .
15:04:00 TR10    215   .0069   .0133   .0038   .0037   .0031   .0004   .0026     34   .0000     0    88352
15:04:00 TR11    130   .3033   .5730   .0033   .0032   .3000   .0090   .0193     21   .0000     0    88391
15:04:00 TR12    216   .0901   .1345   .0014   .0013   .0887   .0021   .0049      5   .0000     0    88359
15:04:00 TR13    225   .0888   .1234   .0014   .0013   .0874   .0024   .0050      5   .0000     0    88357
15:04:00        8903   .0473   .6318   .0013   .0013   .0460   .0015   .0035      7   .0000     0    69261

15:05:00 TR01    210   .0551   .1328   .0012   .0011   .0538   .0017   .0027      3   .0000     0    88355
15:05:00 TR02    207   .1609   .4151   .0030   .0029   .1579   .0046   .0119     18   .0000     0    88359
15:05:00 TR03    211   .0062   .0125   .0026   .0025   .0036   .0005   .0031     18   .0000     0    88352
15:05:00 TR04    246   .0069   .0148   .0038   .0037   .0031   .0003   .0026     34   .0000     0    88352
  . . .
15:05:00 TR10    230   .0062   .0119   .0026   .0025   .0036   .0005   .0031     18   .0000     0    88352
15:05:00 TR11    234   .0070   .0173   .0039   .0038   .0031   .0004   .0027     34   .0000     0    88352
15:05:00 TR12    244   .0874   .1227   .0014   .0013   .0860   .0026   .0052      5   .0000     0    88354
15:05:00 TR13    283   .0887   .1924   .0014   .0013   .0873   .0024   .0051      5   .0000     0    88360
15:05:00        9275   .0476   .7551   .0014   .0013   .0462   .0014   .0035      7   .0000     0    70591
```

Figure 184. Performance Summary report (by TRAN within STOP Interval)

Example 13: DBCTL activity

The following Summary report summarizes DBCTL activity by Transaction ID and PSB name.

```
CICSPA SUMMARY(
          FIELDS(                     Sort by Transaction ID and PSB name
                TRAN,                 Transaction identifier
                DBCTL(PSBNAME),       PSB name
                TASKCNT,              Total Task count
                RESPONSE(AVE),        Average Response time
                DISPATCH(TIME(AVE)),  Average Dispatch time
                CPU(TIME(AVE)),       Average CPU time
                SUSPEND(TIME(AVE)),   Average Suspend time
                DBCTL(DLICALLS(AVE),  Total DL/I Database calls
```

```
                              POOLWAIT(AVE),    Elapsed wait time for Pool Space
                              INTCWAIT(AVE),    Elapsed wait time for Intent Conflict
                              SCHTELAP(AVE),    Elapsed time for Schedule Process
                              DBIOELAP(AVE),    Elapsed time for Database I/O
                              PILOCKEL(AVE),    Elapsed time for PI Locking
                              THREDCPU(AVE))))  Thread TCB CPU time
```

Example 14: DBCTL activity with filtering

This DBCTL example produces a Performance Summary report like that shown in
Figure 185.

```
CICSPA IN(SMFIN004),
       SELECT(PERFORMANCE(EXCLUDE(
                 CHARACTER(OWNER(DBCTL),          Exclude transactions
                 SUBSTR(1,1),VALUE(' '))))),  without a PSB name
           SUMMARY(FIELDS(                    Sort by Transaction ID and PSB name
                    TRAN,                     Transaction identifier
                    DBCTL(PSBNAME),           PSB name
                    TASKCNT,                  Total Task count
                    RESPONSE,                 Transaction response time
                    CPU,                      CPU time
                    DISPATCH,                 Dispatch time
                    SUSPEND,                  Suspend time
                    DBCTL(
                       POOLWAIT,       Elapsed wait time for Pool Space
                       INTCWAIT,       Elapsed wait time for Intent Conflict
                       SCHTELAP,       Elapsed time for Schedule Process
                       DBIOELAP,       Elapsed time for Database I/O
                       PILOCKEL,       Elapsed time for PI Locking
                       DBIOCALL,       Number of Database I/Os
                       DLICALLS)))     Total DL/I Database calls
```

```
 V2R1M0                                      CICS Performance Analyzer
                                             Performance Summary

 SUMM0001 Printed at 11:49:51  2/24/2005     Data from 15:58:47  2/19/2005 to 15:58:28  2/21/2005                Page     1
 *** All DBCTL transactions ***
                        Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
                     Response User CPU Dispatch  Suspend PoolWait   ICwait SchedElp DBIOElap PILockEl DBIOcall DLIcalls
 Tran   PSB   #Tasks    Time     Time     Time     Time     Time     Time     Time     Time     Time    Count    Count
 DLI0   DDLPSB51   16   9.3221   .0255    .5016   8.8205   .0000    .0000    .0104    .0000    .0000       0        0
 DLI0   PSB99      13   1.4249   .5201    .7799    .6450   .0000    .0000    .0780    .0000    .0000       0        1
 DLI0              29   5.7820   .2472    .6264   5.1556   .0000    .0000    .0407    .0000    .0000       0        1

 DLI1   DDLPSB51    4  26.4267   .0125    .8290  25.5977   .0000    .0000    .0041    .0000    .0000       0        0
 DLI1   PSB99       1  95.2870  1.9511  16.4508  78.8363   .0000    .0000    .0050    .0000    .0000       0        1
 DLI1               5  40.1988   .4003   3.9534  36.2454   .0000    .0000    .0043    .0000    .0000       0        0

 DLI2   DDLPSB51    4  19.3463   .0125    .2029  19.1433   .0000    .0000    .0040    .0000    .0000       0        0
 DLI2   PSB99       1  91.8213  1.8717   2.0128  89.8085   .0000    .0000    .0010    .0000    .0000       0        1
 DLI2               5  33.8413   .3843    .5649  33.2764   .0000    .0000    .0034    .0000    .0000       0        0

 DLI3   DDLPSB51    4  21.6261   .0124    .9275  20.6986   .0000    .0000    .0047    .0000    .0000       0        0
 DLI3   PSB99       1 156.501   1.9866  24.4980 132.003    .0000    .0000    .0055    .0000    .0000       0        1
 DLI3               5  48.6011   .4073   5.6416  42.9595   .0000    .0000    .0049    .0000    .0000       0        0
```

Figure 185. Performance Summary report (DBCTL activity)

> **Note:** The IMS Performance Analyzer (IMS PA) can provide a more comprehensive
> analysis of IMS DBCTL performance.

SUMMARY examples

Example 15: Summarize by transaction ID

This example produces a Performance Summary report like that shown in Figure 186, summarized by transaction identifier.

Note: This example only applies to the CMF performance class data from CICS Transaction Server Version 1.3 or later.

```
CICSPA SUMMARY(BY(TRAN),
               FIELDS(TRAN,TASKCNT,RESPONSE(AVE,MAX),
                      DISPATCH,CPU,SUSPEND,DISPWAIT,
                      QRDISPT,QRCPU,QRMODDLY,CHMODECT,
                      MSDISPT,MSCPU))
```

```
V2R1M0                                      CICS Performance Analyzer
                                             Performance Summary

SUMM0001 Printed at  9:09:48  5/02/2004    Data from 11:10:52  2/04/2004 to 08:10:28  2/16/2004                        Page     1
```

Tran	#Tasks	Avg Repsonse Time	Max Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg QR Disp Time	Avg QR CPU Time	Avg QRModDly Time	Avg ChngMode	Avg MS Disp Time	Avg MS CPU Time
AADD	13	.0152	.0945	.0129	.0023	.0023	.0011	.0021	.0015	.0010	1	.0108	.0008
ABRW	970	.0830	36.6088	.0026	.0015	.0804	.0000	.0020	.0015	.0000	0	.0005	.0000
ADDD	1	.0482	.0482	.0350	.0049	.0132	.0125	.0024	.0017	.0124	2	.0326	.0032
AINQ	8	.0021	.0033	.0017	.0014	.0004	.0000	.0017	.0014	.0000	0	.0000	.0000
AMNU	10	.0158	.0713	.0125	.0027	.0032	.0015	.0037	.0018	.0014	1	.0088	.0010
AUPD	9	.0165	.0623	.0124	.0025	.0041	.0001	.0024	.0017	.0000	0	.0100	.0008
CALL	9	2.0920	2.1935	.0101	.0021	2.0819	.0009	.0026	.0015	.0002	6	.0073	.0004
CATA	11	.0282	.0882	.0110	.0054	.0171	.0002	.0080	.0048	.0002	0	.0030	.0006
CATD	2	.0344	.0570	.0184	.0065	.0160	.0062	.0043	.0042	.0062	1	.0141	.0023
CATR	1	.0296	.0296	.0287	.0047	.0009	.0008	.0017	.0014	.0008	2	.0270	.0033
CBAM	5	22.4438	51.3803	.0211	.0100	22.4227	.0002	.0095	.0058	.0001	1	.0116	.0042
CBTR	1	.0024	.0024	.0023	.0014	.0001	.0000	.0023	.0014	.0000	0	.0000	.0000
CEBR	1	575.916	575.916	.0061	.0046	575.910	.0003	.0059	.0044	.0001	2	.0002	.0002

Figure 186. Performance Summary report (by TRAN)

Example 16: Application naming

The example in Figure 187 on page 395 is a Performance Summary report produced from CMF performance class data with application naming enabled. This report can be produced from the following command:

```
CICSPA IN(SMFIN001),
    SUMMARY(EXTERNAL(CPAXW001),
            BY(TRAN,              Sort by Transaction ID,
               APPLTRAN,            Application naming Transaction ID
               APPLPROG),           and Application naming Program name
            FIELDS(TRAN,          Transaction identifier
                   APPLTRAN,      Application naming Transaction ID
                   APPLPROG,      Application naming Program name
                   TASKCNT,       Total Task count
                   RESPONSE,      Transaction response time
                   DISPATCH,      Dispatch time
                   CPU,           CPU time
                   SUSPEND,       Suspend time
                   DISPWAIT))     Redispatch wait time
```

```
V2R1M0                                      CICS Performance Analyzer
                                             Performance Summary

SUMM0001 Printed at 15:25:43  6/19/2004     Data from 07:30:47  5/29/2004 to 08:35:48  5/29/2004              Page   4


                                 Avg      Avg      Avg      Avg      Avg
    Tran    Tran    Program   #Tasks Response Dispatch User CPU Suspend DispWait
                                 Time     Time     Time     Time     Time
    MENU    TOP1    PROGOPT1       5   .0152    .0934    .0196 684.379    .0064
            TOP2    PROGOPT2      48   .0183    .7688    .2039   1.1260    .1046
            TOP3    PROGOPT3       1   .0482    .0002    .0002    .0029    .0000
            TOP4    PROGOPT4      49   .0021    .7531    .1997   1.1030    .1025
            TOP5    PROGOPT5       4   .0165    .0695    .0088    .0191    .0191
```

Figure 187. Example of a Performance Summary report (Application Naming)

Example 17:

This example produces a Performance Summary Export extract data set with a Recap report like that in Figure 188. See "Exported Performance Data extract" on page 258 for more information on the Export facility.

```
CICSPA SUMMARY(
        OUTPUT(EXPT0003),
        DDNAME(CPAOEX03),
        DELIMIT(','),
        LABELS,
        TITLE1('SUMMARY Exported Performance Data Extract'),
        EXTERNAL(CPAXW003),
        INTERVAL(00:05:00),
        BY(START,STOP,TRAN),
        FIELDS(START(TIMES),STOP(TIMES),TRAN,
               TASKCNT,
               RESPONSE(AVE,MAX),
               DISPATCH(TIME(AVE)),
               CPU(TIME(AVE)),
               SC31UHWM(AVE)))
```

```
V2R1M0                                      CICS Performance Analyzer
                                             Performance Summary

EXPT0003 Printed at 23:16:13  6/26/2004     Data from 15:41:19  6/12/2004 to 16:15:40  6/16/2004              Page     1
SUMMARY Exported Performance Data Extract

CPAOEX03 Extract has completed successfully
        Data Set Name . . . . CICSPA.SUMMARY.EXPORT
        Record count  . . . .        65
```

Figure 188. Performance Summary Export extract (Recap report)

Example 18: Summarize response times by range

Figure 189 on page 396 shows a Performance Summary report that uses the RNGCOUNT and RNGPERCENT functions to show the distribution of transaction response times in ranges of 0.2 seconds. You can use this report to answer questions such as: How many transactions had a response time between 0.4 and 0.6 seconds? What percentage of transactions had a response time of 1 second or longer?

```
CICSPA SUMMARY(
            FIELDS(TRAN(ASCEND),
                   TASKCNT,
                   RESPONSE(AVE,MAX),
                   RESPONSE(RNGCOUNT(<0.2)),
                   RESPONSE(RNGPERCENT(<0.2)),
                   RESPONSE(RNGCOUNT(0.2-0.4)),
                   RESPONSE(RNGPERCENT(0.2-0.4)),
                   RESPONSE(RNGCOUNT(0.4-0.6)),
                   RESPONSE(RNGPERCENT(0.4-0.6)),
```

```
                                              RESPONSE(RNGCOUNT(0.6-0.8)),
                                              RESPONSE(RNGPERCENT(0.6-0.8)),
                                              RESPONSE(RNGCOUNT(0.8-1.0)),
                                              RESPONSE(RNGPERCENT(0.8-1.0)),
                                              RESPONSE(RNGCOUNT(>=1.0)),
                                              RESPONSE(RNGPERCENT(>=1.0))))
```

```
V2R1M0                                            CICS Performance Analyzer
                                                    Performance Summary
SUMM0001 Printed at 12:05:52  1/05/2007      Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004                Page       1

              Avg      Max     <0.2     <0.2  0.2-0.4  0.2-0.4  0.4-0.6  0.4-0.6  0.6-0.8  0.6-0.8  0.8-1.0  0.8-1.0     >=1.0     >=1.0
Tran    #Tasks Response Response Response Response Response Response Response Response Response Response Response Response Response Response
              Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time
AP01        5 .822835 1.539306       0       .0       0       .0       0       .0       4     79.9       0       .0       1     19.9
AP02        5 .005847  .007620       5    100.0       0       .0       0       .0       0       .0       0       .0       0       .0
AP03        5 .003338  .003827       5    100.0       0       .0       0       .0       0       .0       0       .0       0       .0
CATA       28 .098631  .866135      25     89.2       0       .0       2      7.1       0       .0       1      3.5       0       .0
CATD        2 .310097  .594725       1     50.0       0       .0       1     50.0       0       .0       0       .0       0       .0
CATR       33 .014969  .047388      33    100.0       0       .0       0       .0       0       .0       0       .0       0       .0
CDBC        5 2.329661 3.600855       0       .0       0       .0       0       .0       0       .0       0       .0       5    100.0
CDBI        5 2.227452 4.431367       0       .0       0       .0       0       .0       0       .0       0       .0       5    100.0
CDBQ        9 .217337  .399723       5     55.5       4     44.4       0       .0       0       .0       0       .0       0       .0
CDTS       21 .004606  .006927      21    100.0       0       .0       0       .0       0       .0       0       .0       0       .0
CEBR       11 193.7346 936.1108       0       .0       0       .0       0       .0       0       .0       0       .0      11    100.0
CECI       22 65.44253 1087.786       0       .0       0       .0       0       .0       1      4.5       0       .0      21     95.4
   :
```

Figure 189. Performance Summary report: response time distributions

Notice that the column headings for counts and percentages are identical. To distinguish between these columns, check the values under the headings: percentages appear with a decimal point, whereas counts are integers, and hence have no decimal point.

TOTAL - Performance Totals report

The **TOTAL** operand requests the Performance Totals report.

The command format is:
```
CICSPA TOTAL(
           [OUTPUT(ddname),]
           [LINECount(nnn),]
           [TITLE1('...up to 64 characters...'),]
           [TITLE2('...up to 64 characters...'),]
           [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                               ...))])
```

The options are:

OUTPUT
> Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **TOTLnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

LINECOUNT
> Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2
> Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
> Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

TOTAL examples

Example 1: Default report
```
CICSPA TOTAL
```

Example 2: Report interval

This example shows the TOTAL operand combined with SELECT(PERFORMANCE. The SELECT statement will restrict the input data to be that of the specified day, January 12, 2005.
```
CICSPA TOTAL(SELECT(PERFORMANCE(INCLUDE(
                 START(FROM(2005/01/12,),TO(2005/01/13,))))))
```

Example 3: Exclude CICS-supplied transactions

The following command generates a Performance Totals report for the data from September 25, 2004.
```
CICSPA APPLID(IYK2Z1V3),
      TOTAL(OUTPUT(TOTL0002),
           SELECT(PERFORMANCE(
                 EXCLUDE(TRAN(CSHQ,CSNC,CSNE,CSOL,CSSY,CWXN)),
                 INCLUDE(ACTIVE(FROM(2004/09/25,))))))
```

TOTAL examples

Figure 190 shows an example of the output (part 1 only).

The Performance Totals report has four parts:

1. **CICS System Statistics.** Statistics about the CICS system as a whole, including:
   - CPU and Dispatch times
   - Performance Record and Task counts
2. **CPU and Dispatch Statistics.** Breakdown of CPU, Dispatch, and Suspend counts and elapsed time.
3. **Resource Utilization Statistics.** Each field in the performance record is summarized:
   - For Clock fields, the count and time components are broken down.
   - For Count fields, the count values are reported.
4. **User Field Statistics.** Statistics for the User Fields defined in the CMF performance class records.

```
V2R1M0                                    CICS Performance Analyzer
                                             Performance Totals

TOTL0001 Printed at 22:47:16  3/14/2005    Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004              Page      1


                                  Dispatched Time        CPU Time
                                  DD HH:MM:SS    Secs  DD HH:MM:SS    Secs

Total Elapsed Run Time               19:08:07   68887


From Selected Performance Records

QR Dispatch/CPU Time                 00:23:05    1385     00:01:10      70
MS Dispatch/CPU Time                 00:30:59    1859     00:00:19      19
                                     --------   -----     --------  ------
 TOTAL (QR + MS)                     00:54:05    3245     00:01:29      89

L8 CPU Time                                               00:00:01       1
J8 CPU Time                                               00:02:22     142
S8 CPU Time                                               00:00:00       0
X8 CPU Time                                               00:00:00       0
                                     --------   -----     --------  ------
 TOTAL (L8 + J8 + S8 + X8)           00:04:04     244     00:02:22     142

L9 CPU Time                                               00:00:00       0
J9 CPU Time                                               00:00:09       9
X9 CPU Time                                               00:00:00       0
                                     --------   -----     --------  ------
 TOTAL (L9 + J9 + X9)                00:00:12      12     00:00:09       9

                                     --------   -----     --------  ------
 Total CICS TCB Time                 00:58:21    3501     00:04:01     241


Total Performance Records (Type C)                0
Total Performance Records (Type D)              247
Total Performance Records (Type F)              327
Total Performance Records (Type S)                0
Total Performance Records (Type T)            15566
                                           --------                                              --------
Total Performance Records (Selected)          16140     Total Performance Records                  16140
```

Figure 190. Performance Totals report (part 1): CICS system statistics

WAITANALYSIS - Wait Analysis report

The **WAITANALYSIS** or **WAIT** operand requests the Wait Analysis report.

The command format is:

```
CICSPA WAITANALYSIS(
          [OUTPUT(ddname),]
          [BY(by1[,by2][,by3]),]
          [INTERVAL(hh:mm:ss),]
          [LINECount(nnn),]
          [TITLE1('...sub-heading left ...'),]
          [TITLE2('...sub-heading right...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                              ...))])
```

The options are:

OUTPUT

> Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **WAITnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

INTERVAL

> Specifies a time interval when the report summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds.

> This operand applies only when the report or extract is sorted by transaction Start or Stop time; that is, when the BY operand specifies START or STOP. For reporting, data is accumulated for each interval in the report period and a report line or extract record is written for each interval. If INTERVAL is not specified, the default is **00:01:00** (1 minute).

> A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

> A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

> Minutes take precedence for an abbreviated entry. For example:
> **1**   becomes 00:01:00
> **1.1**   becomes 00:01:00 (rounded down from 00:01:01)
> **1.1.1** becomes 01:00:00 (rounded down from 01:01:01)

BY   Controls the summarization order of the report. Up to three fields may be specified, and the order in which they are specified dictates the sort precedence. Only fields of type T (Time Stamp) and C (Character) can be sort fields. See "WAITANALYSIS(BY" on page 400 for further information and the list of fields which are sort candidates.

LINECOUNT

> Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

> Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

WAITANALYSIS - Wait Analysis report

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

WAITANALYSIS(BY

The summarization order of the Wait Analysis report can be modified. This is done with the BY operand followed by one to three field names specified in the order of the desired sort precedence. The data is collated in ascending sequence.

If BY is omitted, the default is **BY(TRAN).**

The format of the command is:

```
CICSPA WAITANALYSIS(BY(by1[,by2][,by3]))
```

The CICS-defined character fields that can be selected for the Wait Analysis report are:

TRAN	Transaction identifier
APPLID	CICS Generic APPLID
PROGRAM	Program name
TERM	Terminal identifier
USERID	User ID
APPLPROG	Application naming Program name
APPLTRAN	Application naming Transaction ID
FCTY	Transaction Facility name
LUNAME	VTAM® logical unit name
RLUNAME	VTAM LUALIAS logical unit name
RPTCLASS	Workload Manager (WLM) Report Class
SRVCLASS	Workload Manager (WLM) Service Class
TCLASSNM	Transaction Class name
TCPSRVCE	TCP/IP Service Name
TERMCNNM	Terminal session Connection name

To summarize wait activity over time, select one or both of the time stamp fields:

START	Task start time
STOP	Task stop time

WAITANALYSIS examples

Example 1: Default report

```
CICSPA WAITANAL
```

The report is sorted by TRAN.

```
V2R1M0                                    CICS Performance Analyzer
                                          Wait Analysis Report

WAIT0001 Printed at  9:52:58  8/06/2004    Data from 09:32:03  7/21/2004 to 09:37:21  7/21/2004        Page      1


--------------------------------------------------------------------------------------------------------------------
Tran=ABRW
  Summary Data                                  -------- Time ---------   ------ Count ------   ------ Ratio ------
                                                  Total     Average       Total     Average
    # Tasks                                                                  7
    Response Time                               0.6120      0.0874
    Dispatch Time                               0.5341      0.0763          37        5.3       87.3% of Response
    CPU Time                                    0.0347      0.0050          37        5.3        6.5% of Dispatch
    Suspend Wait Time                           0.0777      0.0111          37        5.3       12.7% of Response
    Dispatch Wait Time                          0.0016      0.0002          30        4.3        2.1% of Suspend
    Resource Manager Interface (RMI) elapsed time  0.0000   0.0000           0        0.0        0.0% of Response
    Resource Manager Interface (RMI) suspend time  0.0000   0.0000           0        0.0        0.0% of Suspend

  Suspend Detail                                ------------------ Suspend Time ------------------ ----- Count -----
                                                  Total     Average  %age Graph                     Total   Average
    FCIOWTT   File I/O wait time                 0.0585      0.0084  75.2% |***************              2       0.3
    N/A       Other Wait Time                    0.0192      0.0027  24.6% |****                        28       4.0
    DSPDELAY  First dispatch wait time           0.0001      0.0000   0.1% |                             7       1.0
```

Figure 191. Wait Analysis report

Example 2: Report interval

This example shows the WAITANALYSIS operand combined with SELECT(PERFORMANCE. The SELECT statement will restrict the input data to be that of the specified day, January 12, 2005.

```
CICSPA WAITANAL(SELECT(PERFORMANCE(INCLUDE(
                    START(FROM(2005/01/12,),TO(2005/01/13,))))))
```

CROSSsystem - Cross-System Work report and extract

The **CROSSsystem** operand requests the Cross-System Work report, the Cross-System Work extract, or both.

If the Extract is requested, a Recap report containing processing statistics is always printed at the end of extract processing.

The command format is:

```
CICSPA CROSSsystem(
    Report options:
            [PRINTMultiple,]
            [NOPRINTMultiple,]
            [PRINTSingle,]
            [NOWRITE,]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            TASKORDER(START|STOP)
    Extract options:
            [DDNAME(ddname),]
            [SYSID(applid,mvsid),]
            [WRITEMultiple,]
            [NOWRITEMultiple,]
            [WRITESingle,]
            [NOPRINT,]
            [CHARACTER(OWNER(owner),LENGTH(nnn),HEADER(header)),]
            [CLOCK(OWNER(owner),NUMBER(nnn),HEADER(header)),]
            [COMPRESS|NOCOMPRESS,]
            [COUNT(OWNER(owner),NUMBER(nnn),HEADER(header)),]
    Report and Extract options:
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
            [SELUOW(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The Cross-System Work report can be tailored using the **LISTX** operand. This produces the Cross-System Work Extended report. For more information, see "LISTX - Performance List Extended report" on page 366.

Report options

Options applicable to the Cross-System Work report (and not the extract) are:

PRINTMultiple

> Print only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default for the report.

NOPRINTMultiple

> Do not print the transaction performance records consisting of units-of-work that include multiple CMF records.

PRINTSingle   Print the transaction performance records consisting of units-of-work that include only a single CMF record. To get a listing containing these records only, you must suppress the default **PRINTMultiple** option by specifying **NOPRINTMultiple** as well.

NOWRITE   Do not produce an extract data set. This operand may be used to create the report without the extract.

LINECOUNT   Controls the number of lines per page for the Cross-System Work report. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the title (left and right half of subheading line) of the Cross-System Work report. See "TITLE1 and TITLE2" on page 345 for further information.

TASKORDER(START|STOP)

Sorts tasks within each UOW in either descending order of stop time (the default) or ascending order of start time.

Extract options

Options applicable to the Cross-System Work extract (and not the report) are:

DDNAME   This operand specifies the DDname of the output data set where the Cross-System Work extract is written. If not specified, CICS PA assigns the default DDname **CPAOXSYS.** The CICS PA dialog, however, assigns DDnames in the format **CPAOXSnn** where nn is the extract sequence number **01-99.** (See the sample JCL in Figure 166 on page 329).

SYSID   This operand specifies the APPLID and MVS ID to be written in each record of the extract data set. If not specified, CICS PA uses the default APPLID **MULTIPLE** and default MVS ID **CICS**.

WRITEMultiple

Write only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default for the extract.

NOWRITEMultiple

Do not write the transaction performance records consisting of units-of-work that include multiple CMF records.

WRITESingle   Write the transaction performance records consisting of units-of-work that include only a single CMF record. To get an extract containing these records only, you must suppress the default WRITEMultiple option by specifying **NOWRITEMultiple** as well.

NOPRINT   Do not print a Cross-System Work report. This operand may be used to create the Cross-System Work extract without the report.

COMPRESS|NOCOMPRESS

Determines whether CICS PA writes CICS SMF records to the extract file in compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you specify **COMPRESS**, CICS PA writes compressed CICS SMF records, regardless of the CICS release level that created the input records. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed CICS SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

CHARACTER(OWNER(owner),LENGTH(nnn),HEADER(ufldname))
CLOCK(OWNER(owner),NUMBER(nnn),HEADER(ufldname))

COUNT(OWNER(owner),NUMBER(nnn),HEADER(ufldname))
Each user field to be included in the extract must be specified separately.

CHARACTER A character type user field to be included in the extract.

CLOCK A clock type user field to be included in the extract.

> **Note:** A clock type field in a CMF record consists of two parts: elapsed time and a count of the number of times the condition occurred. When creating the Cross-System Work extract, **CLOCK** applies to both parts of the field.

COUNT A count type user field to be included in the extract.

OWNER The 1-8 character owner of the user field. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of 'USER'. CICS PA does not have a default owner name. Even if the owner name is USER, the OWNER operand must be specified.

LENGTH Required with the CHARACTER operand. It specifies the length of the character user field on the Cross-System Work extract. If LENGTH is missing, the character user field will not be written. If the specified cross-system length is shorter than the original length, the value will be truncated. If the cross-system length is longer than the original length, the value will be padded with binary zeros. The maximum length that can be specified is 256.

NUMBER The clock or count to be included in the extract (of the 256 clocks and 256 counts that can be defined for this owner).

HEADER The eight-character informal field name. If not specified, CICS PA uses the default value *USER*. This is placed in the CMF dictionary of the Cross-System Work extract and can be used in subsequent reporting. For example, if you produce the CICS PA Performance List, Performance List Extended and Performance Summary reports from the Cross-System Work extract data set, *ufldname* is used as the column heading for the user fields in the reports.

Report and extract options

Options that apply to both the Cross-System Work report and extract are:

OUTPUT Controls the report output DDname. See "OUTPUT" on page 344 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output, and xxxx is:
* **CROS** for the Cross-System Work report

- **CROX** for the Recap report for the Cross-System Work extract

EXTERNAL Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

If used in conjunction with SELUOW, it does not impact reporting but rather is a first-level pre-sort filter. The purpose of SELECT in this case is to exclude the records that you know are of no interest and thereby reduce the volume of records to be sorted for reporting. It is suitable, for example, for time range checking and selecting all possible transaction IDs of interest.

SELUOW(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what units-of-work to include or exclude from the report or extract based on data field values. If one task in a multi-task UOW matches the selection criteria, then all tasks for that UOW are selected.

It can be used in conjunction with SELECT to first filter out those tasks that you know are of no interest and thereby optimize the record sort process.

See page 409 for an example using SELECT and SELUOW.

CROSSsystem examples

Example 1: Default report and extract

```
CICSPA CROSS
```

Example 2:

In this example, the report and extract data set will be generated to contain all performance records, both from network units of work consisting of multiple CMF records and from units of work consisting of a single CMF record. The specified CHARACTER-type and CLOCK-type user fields will be added to the output record.

The extract will be written to DDname CPAOXSYS. The report will be written to CROS0001, if this is the first Cross-System Work report, and the Recap will be written to CROX0001.

```
CICSPA CROSS(PRINTM,PRINTS,WRITEM,WRITES,
             CHARACTER(OWNER(USER),LENGTH(8),HEADER(MINE)),
             CLOCK(OWNER(USER),NUMBER(2),HEADER(CLOCK2)))
```

Example 3:

To print records from a network unit-of-work containing single and multiple records, use the following command:

```
CICSPA CROSS(PRINTM,PRINTS,NOWRITE,OUTPUT(CROS0001))
```

This produces a report containing information like that shown in Figure 192.

```
V2R1M0                                    CICS Performance Analyzer
                                            Cross-System Work

CROS0001 Printed at  9:00:30  2/13/2005 Data from 11:10:29  2/04/2005 to 11:33:51  2/04/2005                        Page      7

                                   Request      Fcty Conn                     UOW              R                  Response A
Tran Userid   SC TranType Term LUName  Type   Program T/Name Name NETName     Seq  APPLID    Task T  Stop Time       Time  B

PAY1 BRENNER  TP U        S23C IGCS23C AP:    DFH0PAY1 T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  197 T 11:18:14.419    .0861
SALE BRENNER  U  U     R            AP:    DFH0SAL2           GBIBMIYA.IGCS23C  1  IYK2Z1V3  198 T 11:18:14.417    .0821

CSAC BRENNER  TO U        S23C IGCS23C AP:    DFHACP   T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  203 T 11:18:22.466    .0020

CBAM BRENNER  TO U        S23C IGCS23C AP:    DFHECBAM T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  204 T 11:18:36.466  11.0373

MENU BRENNER  TO U        S23C IGCS23C AP:    DFH0SAL0 T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  208 T 11:18:40.026    .0023

SALE BRENNER  U  U     R            AP:    DFH0SAL2           GBIBMIYA.IGCS23C  1  IYK2Z1V3  212 T 11:18:47.793    .6282
STOC BRENNER  U  U     R            AP:    DFH0STOC           GBIBMIYA.IGCS23C  1  IYK2Z1V3  214 T 11:18:47.792    .6072
RED1 BRENNER  U  U     R            AP:    DFH0RED1           GBIBMIYA.IGCS23C  1  IYK2Z1V3  213 T 11:18:47.789    .6162
SAL1 BRENNER  TP U        S23C IGCS23C AP:    DFH0SAL1 T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  211 T 11:18:47.270    .1222

SAL1 BRENNER  TP U        S23C IGCS23C AP:    DFH0SAL1 T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  218 T 11:18:49.567    .0022

CBAM BRENNER  TO U        S23C IGCS23C AP:    DFHECBAM T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  221 T 11:19:30.467  38.9944

MENU BRENNER  TO U        S23C IGCS23C AP:    DFH0SAL0 T/S23C     GBIBMIYA.IGCS23C  1  IYK2Z1V3  233 T 11:19:33.364    .0023

SALE BRENNER  U  U     R            AP:    DFH0SAL2           GBIBMIYA.IGCS23C  1  IYK2Z1V3  240 T 11:19:41.002    .8246
```

Figure 192. Cross-System Work report (UOWs with single and multiple records)

Example 4:

This command produces a report like that shown in Figure 193 which only shows the transaction performance records that are contained in a network unit-of-work that includes only a single record.

```
CICSPA CROSS(PRINTS,NOPRINTM,NOWRITE)
```

```
V2R1M0                                   CICS Performance Analyzer
                                            Cross-System Work

CROS0001 Printed at  9:11:29  2/13/2005 Data from 11:10:29  2/04/2005 TO 11:33:51  2/04/2005                        Page      8

                              Request          Fcty Conn                   UOW              R               Response A
Tran Userid    SC TranType Term  LUName  Type    Program T/Name Name NETName       Seq  APPLID    Task T   Stop Time     Time  B

CALL BRENNER  TO U       S23D IGCS23D  AP:  CALLJT1 T/S23D      GBIBMIYA.IGCS23D   1  IYK2Z1V1   196 T 11:22:57.345   2.1853

CALL BRENNER  TO U       S23D IGCS23D  AP:  CALLJT1 T/S23D      GBIBMIYA.IGCS23D   1  IYK2Z1V1   251 T 11:30:08.310   2.1249

CESF BRENNER  TO U       S23D IGCS23D  AP:  DFHSFP  T/S23D      GBIBMIYA.IGCS23D   1  IYK2Z1V1   268 T 11:32:03.467    .0040

CESN CBAKER   S  U       P012 IG2ZP012 AP:  DFHSNP  T/P012      GBIBMIYA.IG2ZP012  1  IYK2Z1V1    58 T 11:12:54.056    .0034

CESN CBAKER   TP U       P012 IG2ZP012 AP:  DFHSNP  T/P012      GBIBMIYA.IG2ZP012  1  IYK2Z1V1    60 T 11:13:19.394    .0166

CALL CBAKER   TO U       P012 IG2ZP012 AP:  CALLJT1 T/P012      GBIBMIYA.IG2ZP012  1  IYK2Z1V1   238 T 11:28:57.007   2.1389

CALL CBAKER   TO U       P012 IG2ZP012 AP:  CALLJT1 T/P012      GBIBMIYA.IG2ZP012  1  IYK2Z1V1   246 T 11:29:41.833   2.1265

CQRY CBAKER   S  U       P015 IG2ZP015 AP:  DFHQRY  T/P015      GBIBMIYA.IG2ZP015  1  IYK2Z1V3    50 T 11:12:53.875  18.3021

CESN CBAKER   S  U       P015 IG2ZP015 AP:  DFHSNP  T/P015      GBIBMIYA.IG2ZP015  1  IYK2Z1V3    53 T 11:12:55.370    .0021

CESN CBAKER   TP U       P015 IG2ZP015 AP:  DFHSNP  T/P015      GBIBMIYA.IG2ZP015  1  IYK2Z1V3    62 T 11:14:05.802    .0273

CEMT CBAKER   TO U       P015 IG2ZP015 AP:  DFHEMTP T/P015      GBIBMIYA.IG2ZP015  1  IYK2Z1V3    64 T 11:16:46.019  144.153

AMNU CBAKER   TO U       P015 IG2ZP015 AP:  DFHSAMNU T/P015     GBIBMIYA.IG2ZP015  1  IYK2Z1V3   138 T 11:16:47.866    .0327

ABRW CBAKER   TO U       P015 IG2ZP015 AP:  DFHSABRW T/P015     GBIBMIYA.IG2ZP015  1  IYK2Z1V3   139 T 11:16:51.568    .6982

ABRW CBAKER   TP U       P015 IG2ZP015 AP:  DFHSABRW T/P015     GBIBMIYA.IG2ZP015  1  IYK2Z1V3   140 T 11:16:52.068    .0018
```

Figure 193. Cross-System Work report (UOWs with a single record)

Example 5:

The following command creates the Cross-System Work extract while the Cross-System Work report is suppressed. The extract is created using all the performance records. The performance records contained in a network unit-of-work that includes only a single record, as well as multiple records, are written to the extract data set specified in the default DD statement **CPAOXSYS.**

```
CICSPA CROSS(NOPRINT,WRITEM,WRITES)
```

Example 6:

The following command is an example of how to include user fields from the input data set in the output extract data set.

```
CICSPA CROSS(
             COUNT(OWNER(USER),NUMBER(001),HEADER(MYCOUNT1)),
             CHARACTER(OWNER(USER),LENGTH(40)))
```

CROSSsystem examples

Example 7:

It can be very useful to analyze the performance data from the Cross-System Work extract. This data can provide an insight into the total resources used by a transaction and shows information such as the accumulated dispatch, CPU, and wait times as well as the five user fields added by CICS PA.

Figure 194 shows a Performance List report created from a Cross-System Work extract data set. To create a similar report, use the following command:

```
CICSPA LIST(FIELDS(TRAN,TASKNO,STOP(TIMES),RESPONSE,
                   DISPATCH,CPU,SUSPEND,DISPWAIT,
                   IRWAIT(COUNT),RMISUSP(COUNT),
                   COUNT(OWNER(CICSPA),NUMBER(1)),
                   COUNT(OWNER(CICSPA),NUMBER(2)),
                   COUNT(OWNER(CICSPA),NUMBER(3)),
                   COUNT(OWNER(CICSPA),NUMBER(4)),
                   COUNT(OWNER(CICSPA),NUMBER(5))))
```

```
V2R1M0                                  CICS Performance Analyzer
                                          Performance List

LIST0001 Printed at  6:53:22  4/28/2004    Data from 11:20:53  2/04/2004              APPLID MULTIPLE      PAGE      1

Tran  TaskNo Stop      Response Dispatch User CPU Suspend DispWait IRWait  RMIsusp  TotRecs  ApplRecs TranRout FuncShip DplRecs
             Time      Time     Time     Time    Time     Time     Count   Count
ABRW     157 11:20:53  .0079    .0058    .0042   .0062    .0000       13       0        2        1        0        1       0
ABRW     160 11:20:54  .0074    .0051    .0038   .0063    .0000       13       0        2        1        0        1       0
ABRW     161 11:20:55  .0060    .0040    .0037   .0059    .0000       13       0        2        1        0        1       0
ABRW     162 11:20:56  .0069    .0047    .0036   .0063    .0000       13       0        2        1        0        1       0
ABRW     163 11:20:59  .0028    .0027    .0015   .0001    .0000        0       0        1        1        0        0       0
ABRW     164 11:21:05  .0146    .0044    .0036   .0146    .0000       11       0        2        1        0        1       0
ABRW     165 11:21:07  .0014    .0012    .0010   .0002    .0000        0       0        1        1        0        0       0
ABRW     166 11:21:11  .0062    .0045    .0034   .0050    .0000       11       0        2        1        0        1       0
ABRW     167 11:21:13  .0053    .0037    .0034   .0053    .0000       13       0        2        1        0        1       0
ABRW     168 11:21:15  .0073    .0051    .0038   .0065    .0000       13       0        2        1        0        1       0
ABRW     169 11:21:17  .0124    .0084    .0048   .0112    .0001       13       0        2        1        0        1       0
ABRW     170 11:21:19  .0085    .0054    .0040   .0083    .0000       13       0        2        1        0        1       0
ABRW     171 11:21:22  .0069    .0047    .0037   .0061    .0000       13       0        2        1        0        1       0
ABRW     172 11:21:23  .0065    .0048    .0037   .0053    .0000       13       0        2        1        0        1       0
ABRW     173 11:21:25  .0067    .0046    .0041   .0066    .0000       13       0        2        1        0        1       0
ABRW     175 11:21:27  .0097    .0078    .0043   .0062    .0000       13       0        2        1        0        1       0
ABRW     176 11:21:29  .0085    .0060    .0041   .0071    .0001       13       0        2        1        0        1       0
ABRW     177 11:21:30  .0071    .0052    .0040   .0059    .0000       13       0        2        1        0        1       0
ABRW     179 11:21:33  .0061    .0043    .0034   .0046    .0000        7       0        2        1        0        1       0
ABRW     180 11:21:35  .0022    .0021    .0012   .0001    .0000        0       0        1        1        0        0       0
AUPD     181 11:21:42  .0041    .0033    .0024   .0016    .0000        1       0        2        1        0        1       0
AUPD     182 11:21:45  .0024    .0023    .0013   .0001    .0000        0       0        1        1        0        0       0
AADD     183 11:21:51  .0022    .0022    .0012   .0001    .0000        0       0        1        1        0        0       0
AADD     184 11:21:58  .0023    .0022    .0013   .0001    .0000        0       0        1        1        0        0       0
7INQ     185 11:22:06  .0034    .0026    .0019   .0008    .0000        0       0        1        1        0        0       0
AINQ     186 11:22:08  .0012    .0011    .0010   .0001    .0000        0       0        1        1        0        0       0
AINQ     187 11:22:14  .0040    .0035    .0026   .0014    .0000        1       0        2        1        0        1       0
AMNU     188 11:22:17  .0027    .0026    .0012   .0001    .0000        0       0        1        1        0        0       0
VINQ     189 11:22:25  .0025    .0024    .0015   .0001    .0000        0       0        1        1        0        0       0
BINQ     190 11:22:26  .0027    .0027    .0015   .0001    .0000        0       0        1        1        0        0       0
BING     191 11:22:28  .0024    .0023    .0016   .0001    .0000        0       0        1        1        0        0       0
CEMT     193 11:22:38  2.7279   .0150    .0094   2.7129   .0000        0       0        4        4        0        0       0
CEMT     194 11:22:59  19.8433  .0617    .0466   19.7816  .0002        0       0       12       12        0        0       0
CECI     199 11:23:12  8.5587   .4264    .0720   8.1323   .0206        0       0       10       10        0        0       0
CECI     200 11:23:21  6.7952   .0159    .0061   6.7792   .0001        0       0        6        6        0        0       0
CECI     201 11:23:37  13.5524  .2257    .1508   13.3267  .0007        0       0       43       43        0        0       0
CEDA     202 11:24:05  13.1845  2.0588   1.3244  11.1257  .0107        0       0       73       73        0        0       0
CESF     271 11:32:58  .0039    .0037    .0029   .0002    .0001        0       0        1        1        0        0       0
CQRY     122 11:15:48  .2205    .0040    .0015   .2165    .0000        0       0        1        1        0        0       0
```

Figure 194. Example of a Performance List report from a Cross-System Work extract data set

Example 8:

Consider that when investigating a problem you know that a transaction had poor response time. You then want to investigate all the activity for units-of-work that involve this poor performing transaction. By specifying selection criteria using SELUOW, the Cross-System Work report can give you all transactions associated with the UOWs that the particular transaction was a part of.

In this example, SELECT is used to provide first-level pre-sort filtering of records. Then SELUOW provides second-level post-sort filtering of units-of-work.

```
CICSPA IN(SMFIN001),
       LINECOUNT(58),
       SELECT(PERFORMANCE(INCL(
              TRAN(STOK,CSMI),
              START(FROM(09:30),TO(09:45))))),
       CROSS(PRINTM,NOWRITEM,
             SELUOW(PERFORMANCE(INCL(
             RESP(>0.5),
             TRAN(STOK)))))
```

SELECT will pre-filter the performance records (tasks). Only tasks with a transaction ID of STOK or CSMI that started between 9:30 and 9:45 will be included. Note that this first SELECT does not impact reporting. Its purpose is to exclude records you know will never be required for reporting, ensuring that the record sort process is optimized.

SELUOW will post-filter the UOWs. Entire UOWs will be reported only when one of the tasks in the UOW has a transaction ID of STOK and a response time greater than 0.5 seconds.

TRANGROUP - Transaction Group report

The **TRANGROUP** operand requests the Transaction Group report.

The command format is:

```
CICSPA TRANGROUP(
               [OUTPUT(ddname),]
               [EXTERNAL(ddname),]
               [PRINTMultiple,]
               [NOPRINTMultiple,]
               [PRINTSingle,]
               [LINECount(nnn),]
               [TITLE1('...up to 64 characters...'),]
               [TITLE2('...up to 64 characters...'),]
               [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                ...))])
```

The options are:

OUTPUT
> Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **TRGPnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

EXTERNAL
> Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

PRINTMultiple
> Print only the transaction performance records consisting of units-of-work that include multiple CMF records. This is the default condition when creating the report.

NOPRINTMultiple
> Do not print the transaction performance records consisting of units-of-work that include multiple CMF records.

PRINTSingle
> Print the transaction performance records consisting of units-of-work that include only a single CMF record. To get a listing containing these records only, you must suppress the default PRINTMultiple option by specifying NOPRINTMultiple as well.

LINECOUNT
> Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2
> Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
> Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

TRANGROUP examples

Example 1: Default report (PRINTM only)

The default is to report task performance records contained in a transaction group that includes multiple CMF records.

```
CICSPA TRANGROUP
```

Example 2: All (both PRINTM and PRINTS)

This example shows how to generate a Transaction Group report containing all performance class records, both from transaction groups consisting of multiple CMF records and from transaction groups consisting of a single CMF record.

```
CICSPA TRANGROUP(PRINTM,PRINTS)
```

This creates a report like that shown in Figure 195.

```
V2R1M0                                   CICS Performance Analyzer
                                           Transaction Group

TRGP0001 Printed at  9:26:29  2/13/2005 Data from 11:10:29  2/04/2005 to 11:33:51  2/04/2005                    Page      41

                        Brdg    Client       Request                          Fcty Conn                 R              Response
Tran Userid  SC Origin  Tran IP Address      Type    Program  Term LUName     T/Name Name APPLID     Task T  Stop Time    Time

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     268 T 11:19:52.38     .0399

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     279 T 11:19:57.58     .0683

REM1 BRENNER U  SCHEDULE                     AP:     DFH0REM1                            IYK2Z1V3     281 T 11:19:57.60     .0231

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     282 T 11:19:57.64     .0405

STAT CBAKER  TO BRIDGE  CWBA                 AP:     DFH0STAT CAAE CAAE     B/CAAE       IYK2Z1V3     292 T 11:20:12.04   10.5089
CWBA CBAKER  U  WEB           9.20.30.232    AP:     DFHWBTTA                            IYK2Z1V3     291 T 11:20:01.65     .1188
CWXN CBAKER  U  SOCKET        9.20.30.232    AP:     DFHWBXN                             IYK2Z1V3     290 T 11:20:01.54     .0169

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     293 T 11:20:02.81     .0568

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     296 T 11:20:04.33     .1340

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     297 T 11:20:04.33     .1326

CWBA CBAKER  U  WEB           9.20.30.232    AP:     DFHWBTTA                            IYK2Z1V3     299 T 11:20:07.37    1.0015
CWXN CBAKER  U  SOCKET        9.20.30.232    AP:     DFHWBXN                             IYK2Z1V3     298 T 11:20:06.38     .3103

CWBA CBAKER  U  WEB           9.20.30.232    AP:     DFHWBTTA                            IYK2Z1V3     302 T 11:20:12.04     .0423
CWXN CBAKER  U  SOCKET        9.20.30.232    AP:     DFHWBXN                             IYK2Z1V3     301 T 11:20:12.01     .2331

CZUX CBAKER  QD TDQUEUE                      AP:     DFH0VZUX              D/CSZX         IYK2Z1V3     304 T 11:20:19.36     .0078

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     307 T 11:20:20.34     .7041

SALE BRENNER U  SCHEDULE                     AP:     DFH0SAL2                            IYK2Z1V3     308 T 11:20:20.43     .7920

CWXN CBAKER  U  SOCKET        9.20.30.232    AP:     DFHWBXN                             IYK2Z1V3     331 T 11:34:12.76  782.697
CEMT CBAKER  TO BRIDGE  CWBA                 AP:     DFHEMTP  CAAG CAAG     B/CAAG       IYK2Z1V3     354 T 11:21:55.38   13.3797
CWBA CBAKER  U  WEB           9.20.30.232    AP:     DFHWBTTA                            IYK2Z1V3     353 T 11:21:42.10     .0986
CWBA CBAKER  U  WEB           9.20.30.232    AP:                                        IYK2Z1V3     332 T 11:21:10.12     .0529

CWXN CBAKER  U  SOCKET        9.20.30.232    AP:     DFHWBXN                             IYK2Z1V3     333 T 11:25:52.65  282.577
CWBA CBAKER  U  WEB           9.20.30.232    AP:     DFHWBTTA                            IYK2Z1V3     351 T 11:21:32.85     .0378
CWBA CBAKER  U  WEB           9.20.30.232    AP:                                        IYK2Z1V3     334 T 11:21:10.12     .0485

CZUX CBAKER  QD TDQUEUE                      AP:     DFH0VZUX              D/CSZX         IYK2Z1V3     340 T 11:21:19.48     .0240

CITS CBAKER  U  NONE                         AP:     DFHZATS                             IYK2Z1V3     350 T 11:21:31.67     .0063
```

Figure 195. Transaction Group report (using PRINTS,PRINTM)

BTS - BTS report

The **BTS** operand requests the CICS Business Transaction Services report.

The command format is:

```
CICSPA BTS(
        [OUTPUT(ddname),]
        [EXTERNAL(ddname),]
        [LINECount(nnn),]
        [TITLE1('...up to 64 characters...'),]
        [TITLE2('...up to 64 characters...'),]
        [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                            ...))])
```

The options are:

OUTPUT
> Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **CBTSnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

EXTERNAL
> Specifies the DDname for the work data set used by the external SORT facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

LINECOUNT
> Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2
> Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
> Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

BTS examples

Example 1: Default report

```
CICSPA BTS
```

```
V2R1M0                                  CICS Performance Analyzer
                                  CICS Business Transaction Services (BTS)

CBTS0001 Printed at  9:54:40  3/28/2004 Data from 11:10:51  3/24/2004 to 11:34:13  3/24/2004                Page     1

                                        Process             Pro/Act Cont'er Event      R              Response
         Tran SC TranType Process Name  Type    Activity Name  Reqs   Reqs    Reqs   Task T  Stop Time   Time

         SAL1 TP U                                                2      2       0     146 T 11:17:04.85   .6881

         PAY1 TP U                                                2      0       0     160 T 11:17:12.21   .2010

         SAL1 TP U                                                2      2       0     174 T 11:17:53.63   .1657

         PAY1 TP U                                                2      0       0     197 T 11:18:14.42   .0861

         SAL1 TP U                                                2      2       0     211 T 11:18:47.27   .1222

         SAL1 TP U                                                2      2       0     239 T 11:19:40.33   .1835

         PAY1 TP U                                                2      0       0     294 T 11:20:04.20   .1390

         PAY1 TP U                                                2      0       0     305 T 11:20:19.64   .0747

         RED1 U  U    R SALES111111      ORDER   CREDIT-CHECK     0      2       1     176 T 11:17:54.05   .5333
         STOC U  U    R SALES111111      ORDER   STOCK-CHECK      0      2       1     177 T 11:17:54.05   .5145
         SALE U  U    R SALES111111      ORDER   DFHROOT         10      5       4     175 T 11:17:54.05   .5675
         INV1 U  U      SALES111111      ORDER   INVOICE-BUILD    0      1       1     178 T 11:17:54.09   .0359
         DEL1 U  U      SALES111111      ORDER   DELIV-NOTE       0      1       1     179 T 11:17:55.29  1.2323
         SALE U  U      SALES111111      ORDER   DFHROOT          0      0       0     180 T 11:17:55.31  1.2198
         SALE U  U      SALES111111      ORDER   DFHROOT          1      3       2     183 T 11:17:55.37   .0800
         SALE U  U      SALES111111      ORDER   DFHROOT          1      3       5     184 T 11:17:55.42   .0519
         SALE U  U      SALES111111      ORDER   DFHROOT          2      2       1     186 T 11:18:00.65   .0566
         REM1 U  U      SALES111111      ORDER   SEND-REMINDER    0      1       1     187 T 11:18:00.68   .0243
         SALE U  U      SALES111111      ORDER   DFHROOT          1      0       3     188 T 11:18:00.72   .0389
         SALE U  U      SALES111111      ORDER   DFHROOT          2      2       1     191 T 11:18:05.92   .0826
         REM1 U  U      SALES111111      ORDER   SEND-REMINDER    0      1       1     192 T 11:18:05.96   .0367
         SALE U  U      SALES111111      ORDER   DFHROOT          1      0       3     193 T 11:18:06.04   .0824
         SALE U  U      SALES111111      ORDER   DFHROOT          2      2       1     194 T 11:18:11.13   .0463
         REM1 U  U      SALES111111      ORDER   SEND-REMINDER    0      1       1     195 T 11:18:11.16   .0282
         SALE U  U      SALES111111      ORDER   DFHROOT          1      0       3     196 T 11:18:11.20   .0437
         SALE U  U    R SALES111111      ORDER   DFHROOT          0      1       3     198 T 11:18:14.42   .0821
         SALE U  U      SALES111111      ORDER   DFHROOT          0      0       0     199 T 11:18:15.03   .6101
```

Figure 196. BTS report

WORKLOAD - Workload Activity report

The **WORKLOAD** or **WLM** operand requests the Workload Activity report.

The command format is:

```
CICSPA WORKLOAD(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [SUMMARY[(EXE)],]
            [LIST,]
            [PEAK(percentile),]
            TASKORDER(START|STOP)
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                 ...))])
```

The options are:

OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **WKLDnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

EXTERNAL

Specifies the DDname for the work data set used by the external sort facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

An external sort is not required when only a summary report of BTE transactions is requested.

SUMMARY

Requests the Workload Manager Activity Summary report.

Specify **EXE** to summarize transactions in both EXE (execution) Y and BTE (begin-to-end) phases, otherwise only BTE transactions are listed.

LIST Requests the Workload Manager Activity List report, a detailed list of BTE, EXE Y and EXE N transaction activity.

PEAK(percentile)

Applies to transaction response times in the Workload Activity Summary report and is useful for monitoring service levels. Specify a number between 50 and 100 to report the response time within which that percentage of transactions completed. Computations assume a normal distribution. For example, specify 95 to determine the response time that 95% of transactions completed within. The default is **90.**

TASKORDER(START|STOP)

In the Workload Manager Activity List report, sorts tasks within each UOW in either descending order of stop time (the default) or ascending order of start time.

LINECOUNT

Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

WORKLOAD examples

Example 1: Default report

This is the Summary report showing BTE work only.

```
CICSPA WORKLOAD
```

The following command achieves the same:

```
CICSPA WORKLOAD(SUMMARY)
```

Example 2: Both BTE and EXE transactions

This example produces a Summary report showing both BTE and EXE transactions like that shown in Figure 197.

```
CICSPA WORKLOAD(SUMMARY(EXE)
```

```
   V2R1M0                                      CICS Performance Analyzer
                                    Workload Manager Activity Summary by Service Class

WKLD0001 Printed at 13:33:29  6/04/2004 Data from 15:47:53  6/01/2004 to 15:58:53  6/01/2004                Page     1

Service                                    -------------- Response Time --------------
Class      APPLID     Phase      #Tasks    Average    Std Dev    90% Peak    Maximum

FINSCLAS   CICPTOR1   BTE          176      .5665      .4369      .8753      1.3745
           CICPAOR1   EXE          169      .5239      .4564      .8280      1.1684
STOSCLAS   CICPTOR1   BTE         2123      .9265      .3981      1.2675     2.0246
           CICPAOR1   EXE         2078      .8639      .3627      1.1927     1.8327
QUIKSERV   CICPAOR1   BTE         5476      .3846      .1976      .4673       .6571
LONGSERV   CICPAOR1   BTE         1958     1.5861      .8392      2.2179     5.5094
*  Grand Total   *    BTE         9733      .6853      .4812      1.3718     2.0246
*  Grand Total   *    EXE         2247      .8047      .3927      0.9201     5.5094

   V2R1M0                                      CICS Performance Analyzer
                                    Workload Manager Activity Summary by Report Class

WKLD0001 Printed at 13:33:29  6/04/2004 Data from 15:47:53  6/01/2004 to 15:58:53  6/01/2004                Page     2

Report                                     -------------- Response Time --------------
Class      APPLID     Phase      #Tasks    Average    Std Dev    90% Peak    Maximum

FINSCLAS   CICPTOR1   BTE          176      .5665      .4369      .8753      1.3745
           CICPAOR1   EXE          169      .5239      .4564      .8280      1.1684
STOSCLAS   CICPTOR1   BTE         2123      .9265      .3981      1.2675     2.0246
           CICPAOR1   EXE         2078      .8639      .3627      1.1927     1.8327
QUIKSERV   CICPAOR1   BTE         5476      .3846      .1976      .4673       .6571
LONGSERV   CICPAOR1   BTE         1958     1.5861      .8392      2.2179     5.5094
*  Grand Total   *    BTE         9733      .6853      .4812      1.3718     2.0246
*  Grand Total   *    EXE         2247      .8047      .3927      0.9201     5.5094
```

Figure 197. Workload Activity report (Summary report)

WORKLOAD examples

Example 3: Workload List report only

This example produces only the List report (not the Summary) like that shown in Figure 198.

```
CICSPA WORKLOAD(LIST)
```

```
V2R1M0                                           CICS Performance Analyzer
                                              Workload Manager Activity List

WKLD0001 Printed at 13:33:29  2/04/2005 Data from 15:47:53  2/01/2005 to 15:58:53  2/01/2005                    Page       1

                                      Request          Fcty  Conn Service  Report                          R                  Response A
Tran Userid   SC TranType Term  LUName  Type  Program  T/Name Name Class    Class    APPLID      Task T P  C  Stop Time       Time   B

FINA STEVEP   TP         <AAK CICPTOR1 AP:  FINANCE S/0005 53T1 FINSCLAS FINRCLAS CICPAOR1      44 T EXE Y 15:57:53.92      .5239
FINS STEVEP   TP         0005 TCP00005 TR:AOR1          T/0005      FINSCLAS FINRCLAS CICPTOR1      73 T BTE   15:57:53.93      .5612

STOA SHIRLEY  TP         <AAK CICPTOR1 AP:  STOCK   S/0006 53T1 STOSCLAS STORCLAS CICPAOR1      46 T EXE Y 15:57:54.01      .8574
STOS SHIRLEY  TP         0006 TCP00006 TR:AOR1          T/0006      STOSCLAS STORCLAS CICPTOR1      78 T BTE   15:57:54.02      .9123

ORDQ SYLVIA   TO         0011 TCP00011 AP:  ORDRINQ T/0011      QUIKSERV QUIKSERV CICPAOR1      79 T BTE   15:57:55.12      .3762

ORDQ JOHNX    TO         0012 TCP00012 AP:  ORDRINQ T/0012      QUIKSERV QUIKSERV CICPAOR1      82 T BTE   15:50:55.23      .4321

ORDU SYLVIA   TO         0011 TCP00011 AP:  ORDRUPD T/0011      LONGSERV LONGSERV CICPAOR1      98 T BTE   15:54:56.13     1.4581

ORDU JOHNX    TO         0012 TCP00012 AP:  ORDRUPD T/0012      LONGSERV LONGSERV CICPAOR1     109 T BTE   15:58:56.17     1.2394
```

Figure 198. Workload Activity report (List report)

LISTEXC - Exception List report

The **LISTEXCeption** operand requests the Exception List report.

The command format is:

```
CICSPA LISTEXC(
            [OUTPUT(ddname),]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(values1),...),
                              ...))])
```

The options are:

OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **XLSTnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

LINECOUNT

Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(EXCEPTION(INCLUDE|EXCLUDE

Specifies what CMF exception data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

LISTEXC examples

Example 1: Default report

```
CICSPA LISTEXC
```

Example 2: Exceptions for a particular transaction

In this example, the report only contains exception records for transaction ROLE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(TRAN(ROLE)))))
```

Example 3: Exceptions for a specified report interval

This example lists the exception data for January 16, 2005.

```
CICSPA IN(SMFIN001),
     LISTEXC(SELECT(EXCEPTION(
            INCLUDE(ACTIVE(FROM(2005/01/16,),TO(2005/01/17,))))))
```

Example 4: Particular types of exception

You can use SELECT to report only those exception records for transactions that incurred a particular type of CICS resource shortage. For example, the following command generates an Exception List report of only the exception class records for transactions that incurred a storage wait in either the CDSA or ECDSA.

```
CICSPA IN(SMFIN002),
     LISTEXC(SELECT(EXCEPTION(
            INCLUDE(STORAGEW(CDSA,ECDSA)))))
```

LISTEXC examples

```
V2R1M0                                    CICS Performance Analyzer
                                               Exception List

XLST0001 Printed at  8:26:51  2/17/2005    Data from 08:08:37  2/16/2005          APPLID          Page     1

                            Tran    Service Report              Exp ..... Time ..... Current  Resource                   Exception
Tran Term LUName  Userid    SC Class Class  Class    Taskno Seq Start    Elapsed Program  Type     Resource ID       Type

ABRW P045 IG2ZP045 CBAKER   TP                          834   1 08:08:37  10.189 DFHSABRW FILE     FILEA             STRING
ABRW S205 IGCS205  BRENNER  TP                          835   1 08:08:47   7.245 DFHSABRW FILE     FILEA             STRING
ABRW S220 IGCS220  BRENNER  TP                          837   1 08:08:52   2.996 DFHSABRW FILE     FILEA             STRING
CECI S220 IGCS220  BRENNER  TO                         1151   1 08:12:10    .005 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                         1151   2 08:12:10    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                         1151   3 08:12:10    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   1 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   2 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   3 08:12:10    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   4 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   5 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   6 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                         1149   7 08:12:10    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
```

Figure 199. Exception List report - STORAGEW(CDSA,ECDSA)

Example 5: Exceptions for FILE resources

This example produces an Exception List report like that shown in Figure 200. It includes only the exception records for a specific resource type of FILE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(RESOURCETYPE(FILE)))))
```

```
V2R1M0                                    CICS Performance Analyzer
                                               Exception List

XLST0001 Printed at  7:04:18  4/28/2004    Data from 08:08:37  2/16/2004          APPLID          Page     1

                            Tran    Service Report              Exp ..... Time ..... Current  Resource                   Exception
Tran Term LUName  Userid    SC Class Class  Class    Taskno Seq Start    Elapsed Program  Type     Resource ID       Type

ABRW P045 IG2ZP045 CBAKER   TP                          834   1 08:08:37  10.189 DFHSABRW FILE     FILEA             STRING
ABRW S205 IGCS205  BRENNER  TP                          835   1 08:08:47   7.245 DFHSABRW FILE     FILEA             STRING
ABRW S220 IGCS220  BRENNER  TP                          837   1 08:08:52   2.996 DFHSABRW FILE     FILEA             STRING
```

Figure 200. Exception List report

Example 6: Exceptions for LSRPOOL and FILE resources

This example generates an Exception List report for the exception records for resource types LSRPOOL and FILE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(
                      INCLUDE(RESOURCETYPE(LSRPOOL,FILE)))))
```

Example 7: Exceptions for STORAGE resources

This examples produces an Exception List report that includes only the exception records for a specific resource type of STORAGE.

```
CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(RESOURCETYPE(STORAGE)))))
```

Example 8: Exceptions for a particular transaction ID

This example produces an Exception List report that only includes the exception records for specific transaction identifiers.

```
CICS LISTEXC(SELECT(EXCEPTION(INCLUDE(TRAN(ABRW)))))
```

SUMEXC - Exception Summary report

The **SUMEXCeption** operand requests the Exception Summary report.

The command format is:

```
CICSPA SUMEXC(
            [OUTPUT(ddname),]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(values1),...),
                              ...))])
```

The options are:

OUTPUT
Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **XSUMnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

LINECOUNT
Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2
Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(EXCEPTION(INCLUDE|EXCLUDE
Specifies what CMF exception data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

SUMEXCeption examples

Example 1: Default report

```
CICSPA SUMEXC
```

Example 2: VSTRINGW exceptions on a particular file

This example shows the SUMEXCeption operand combined with a SELECT statement. This report will only contain the exception class records that are generated because of a VSAM string wait on file FILEA.

```
CICSPA SUMEXC(SELECT(EXCEPTION(INCLUDE(VSTRINGW(FILEA)))))
```

```
V2R1M0                                        CICS Performance Analyzer
                                                 Exception Summary

XSUM0001 Printed at  8:26:51  2/17/2005    Data from 08:08:37  2/16/2005 to 08:12:36  2/16/2005                          Page    1

Tran   Total    TS-Buffer-Wait    TS-String-Wait  Pool-Buffr-Wait  Pool-Strng-Wait  File-Strng-Wait  ..Temp Storage.  ..Main Storage.
 ID   Excepts  Average   Count  Average   Count  Average   Count  Average   Count  Average   Count  Average   Count  Average   Count

ABRW      3                                                                          6.810       3
CEBR     16                        .003      16
CECI    257    .006      256       .003       1
       ------- ------- ------- ------- ------- ------- ------- ------- ------- ------- ------- ------- ------- ------- -------
TOTAL   276    .006      256       .003      17                                      6.810       3
```

Figure 201. Exception Summary report

RESUSAGE - Transaction Resource Usage reports

The **RESUSAGE** operand requests the Transaction Resource Usage reports.

The command format is:

```
CICSPA RESUSAGE(
            [OUTPUT(ddname),]
            [TRANLIST(FILE,TEMPSTOR),]
            [TRANSUMMary(FILE,TEMPSTOR),]
            [FILESUMMary(BYTRAN,TOTAL),]
            [TEMPSTORSUMMary(BYTRAN,TOTAL),]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                              ...))])
```

The default report produces all the Summaries.

The options are:

OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **RESUnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

TRANLIST

Requests the Transaction Resource Usage List report, a detailed list of all transactions with CMF transaction resource class data.

Specify **FILE** to report File usage statistics and **TEMPSTOR** to report Temporary Storage usage statistics.

Currently these are the only resource types available. The default is **TRANLIST(FILE,TEMPSTOR)**.

TRANSUMMARY

Specify **FILE** to request the Transaction File Usage Summary report, a summary (averages and maximums) of File activity for each Transaction ID.

Specify **TEMPSTOR** to request the Transaction Temporary Storage Usage Summary report, a summary (averages and maximums) of Temporary Storage activity for each Transaction ID.

Currently these are the only resource types available. The default is **TRANSUMMARY(FILE,TEMPSTOR)**.

FILESUMMARY

Requests the File Usage Summary report, a summary (averages and maximums) of File usage for each File.

Specify **BYTRAN** to break down the File usage statistics by Transaction ID.

Specify **TOTAL** to give total usage statistics for each File.

The default is **FILESUMMARY(BYTRAN,TOTAL)**.

TEMPSTORSUMMARY

Requests the Temporary Storage Usage Summary report, a summary (averages and maximums) of Temporary Storage usage for each Temporary Storage Queue.

Specify **BYTRAN** to break down the Temporary Storage usage statistics by Transaction ID.

Specify **TOTAL** to give total usage statistics for each Temporary Storage Queue.

The default is **TEMPSTORSUMMARY(BYTRAN,TOTAL)**.

LINECOUNT
Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2
Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

The Transaction Resource Usage report processes transaction resource class and performance class data, and uses Performance Selection Criteria to filter both. For more information, see "Performance Selection Criteria" on page 225.

RESUSAGE examples

Example 1: Default report

The default produces all the Summary reports:
1. Transaction File Usage Summary report
2. Transaction Temporary Storage Usage Summary report
3. File Usage Summary report with individual and total Transaction statistics
4. Temporary Storage Usage Summary report with individual and total Transaction statistics

```
CICSPA RESUSAGE
```

The following command achieves the same:

```
CICSPA RESUSAGE(TRANSUMM(FILE,TEMPSTOR),
               FILESUMM(BYTRAN,TOTAL),
               TEMPSTORSUMM(BYTRAN,TOTAL))
```

RESUSAGE examples

Example 2:

This example produces a Transaction Resource Usage List report showing File
Usage and Temporary Storage Usage details as shown in Figure 202.

```
CICSPA RESUSAGE(TRANLIST(FILE,TEMPSTOR))
```

```
V2R1M0                                    CICS Performance Analyzer
                                        Transaction Resource Usage List

RESU0001 Printed at  9:57:42  8/01/2004    Data from 09:14:16  3/20/2004                                    Page     1

                                  Request      Fcty Conn                                          UOW R               Response
Tran  Userid  SC TranType Term  LUName  Type   Program T/Name Name       NETName       APPLID    Task Seq T  Stop Time   Time
----  -------- -- -------- ----  -------- ------- -------- ------ ---- ----------------- --------  ---- --- - ------------ --------
CSSY  CBAKER   U  S                      AP:    DFHAPATT                                IYK2Z1V1    14   1 T  9:14:16.728   .6134

                            ********************* FC Calls ********************* ******* I/O Waits ******** AccMeth
            File                 Get     Put    Browse    Add    Delete    Total    File     RLS     CFDT   Requests
            --------             -------- ------- -------- ------ -------- -------- -------- -------- -------- --------
            *CTLACB*    Elapse   .0000   .0000   .0000    .0000   .0000    .0000    .0000    .0240    .0000
                        Count      0       0       0        0       0        0        0        1        0        1

----  -------- -- -------- ----  -------- ------- -------- ------ ---- ----------------- --------  ---- --- - ------------ --------
CSSY  CBAKER   U  S                      AP:    DFHAPATT                                IYK2Z1V1     9   1 T  9:14:30.861  14.7494

                            ********************* FC Calls ********************* ******* I/O Waits ******** AccMeth
            File                 Get     Put    Browse    Add    Delete    Total    File     RLS     CFDT   Requests
            --------             -------- ------- -------- ------ -------- -------- -------- -------- -------- --------
            DFHCSD      Elapse   .8896   .0000   .1832    .0000   .0000   1.4996   1.4164    .0000    .0000
                        Count    221       0     3365       0       0      3810      362       0        0      3854

----  -------- -- -------- ----  -------- ------- -------- ------ ---- ----------------- --------  ---- --- - ------------ --------
CZUX  CBAKER   QD U                      AP:    DFH0VZUX D/CSZX      GBIBMIYA.IYK2Z1V1 IYK2Z1V1    53   1 T  9:26:33.624   .0031

                            ************* TS Calls ************ *** I/O Waits ***      ********* TS Item ********
            TSQueue              Get    Put_Aux Put_Main Total     TS     Shr_TS            Get    Put_Aux Put_Main
            ----------------    -------- ------- -------- -------- -------- --------        -------- -------- --------
            MONITOR     Elapse   .0000   .0000   .0000    .0000   .0010    .0000
                        Count      0       0       0        0       1        0   Length       0        0        0

----  -------- -- -------- ----  -------- ------- -------- ------ ---- ----------------- --------  ---- --- - ------------ --------
CZUX  CBAKER   QD U                      AP:    DFH0VZUX D/CSZX      GBIBMIYA.IYK2Z1V1 IYK2Z1V1    54   1 T  9:27:33.663   .0057

                            ************* TS Calls ************ *** I/O Waits ***      ********* TS Item ********
            TSQueue              Get    Put_Aux Put_Main Total     TS     Shr_TS            Get    Put_Aux Put_Main
            ----------------    -------- ------- -------- -------- -------- --------        -------- -------- --------
            MONITOR     Elapse   .0000   .0000   .0000    .0000   .0027    .0000
                        Count      0       0       0        0       2        0   Length       0        0        0
```

Figure 202. Transaction Resource Usage List report

Example 3:

This example produces the Transaction File Usage Summary report like that shown in Figure 203.

```
CICSPA RESUSAGE(TRANSUMM(FILE))
```

```
V2R1M0                                          CICS Performance Analyzer
                                              Transaction File Usage Summary

RESU0001 Printed at 12:44:03  7/18/2004    Data from 09:00:10  5/23/2004 to 08:35:48  5/29/2004     APPLID IYK2Z1V1     Page    3

                       ********************* FC Calls *********************** ******* I/O Waits ********  AccMeth
Tran           #Tasks              Get      Put    Browse      Add    Delete    Total     File      RLS     CFDT   Requests
----           -------            -------- -------- -------- -------- -------- --------  -------- -------- -------- --------
CEDA            11 Elapse Avg                                                             .2031    .0000    .0000
                          Max                                                            1.5718    .0000    .0000
                    Count Avg        39        0      420        2        1      471        54        0        0      493
                          Max       369        2     4354        8        4     4739       426        0        0     4925

                       ********************* FC Calls *********************** ******* I/O Waits ********  AccMeth
        File   #Tasks              Get      Put    Browse      Add    Delete    Total     File      RLS     CFDT   Requests
     -------- -------            -------- -------- -------- -------- -------- --------  -------- -------- -------- --------
     DFHCSD     11 Elapse Avg     .1560    .0036    .0139    .0126    .0077    .2081     .2031    .0000    .0000
                          Max    1.4601    .0110    .1195    .0458    .0358   1.6370    1.5718    .0000    .0000
                    Count Avg        39        0      414        2        1      465        54        0        0      493
                          Max       369        2     4354        8        4     4739       426        0        0     4925

                       ********************* FC Calls *********************** ******* I/O Waits ********  AccMeth
Tran           #Tasks              Get      Put    Browse      Add    Delete    Total     File      RLS     CFDT   Requests
----           -------            -------- -------- -------- -------- -------- --------  -------- -------- -------- --------
CMAC             3 Elapse Avg                                                             .0282    .0000    .0000
                          Max                                                             .0295    .0000    .0000
                    Count Avg         1        0        0        0        0        1         2        0        0        1
                          Max         1        0        0        0        0        1         3        0        0        2

                       ********************* FC Calls *********************** ******* I/O Waits ********  AccMeth
Tran  File   #Tasks              Get      Put    Browse      Add    Delete    Total     File      RLS     CFDT   Requests
----  -------- -------            -------- -------- -------- -------- -------- --------  -------- -------- -------- --------
CMAC DFHCMACD    3 Elapse Avg     .0582    .0000    .0000    .0000    .0000    .0582     .0282    .0000    .0000
                          Max     .1747    .0000    .0000    .0000    .0000    .1747     .0295    .0000    .0000
                    Count Avg         0        0        0        0        0        0         2        0        0        1
                          Max         1        0        0        0        0        1         3        0        0        2
  . . .
```

Figure 203. Transaction File Usage Summary report

RESUSAGE examples

Example 4:

This example produces the File Usage Summary report with individual Transaction ID statistics and total Transaction statistics like that shown in Figure 204. Only data for files whose file names match the CB* pattern are included in the report.

```
CICSPA RESUSAGE(FILESUMM,SELECT(PERF(INC(FILENAME(CB*)))))
```

```
V2R1M0                                       CICS Performance Analyzer
                                               File Usage Summary

RESU0001 Printed at 12:51:43  7/18/2004    Data from 09:00:10  5/23/2004 to 08:35:48  5/29/2004      APPLID IYK2Z1V1      Page   2


                          ******************** FC Calls ********************* ******* I/O Waits ********  AccMeth
File     Tran #Tasks        Get       Put    Browse     Add    Delete    Total     File     RLS     CFDT   Requests
-------- ---- -------      -------- -------- -------- -------- -------- --------   -------- -------- -------- --------
CBFILEA  CMAC     3 Elapse Avg   .0582    .0000    .0000    .0000    .0000    .0582     .0282    .0000    .0000
                           Max   .1747    .0000    .0000    .0000    .0000    .1747     .0295    .0000    .0000
                    Count  Avg      0        0        0        0        0        0         2        0        0          1
                           Max      1        0        0        0        0        1         3        0        0          2


-------- ---- -------      -------- -------- -------- -------- -------- --------   -------- -------- -------- --------
CBFILEB  CEDA    11 Elapse Avg   .1560    .0036    .0139    .0126    .0077    .2081     .2031    .0000    .0000
                           Max  1.4601    .0110    .1195    .0458    .0358   1.6370    1.5718    .0000    .0000
                    Count  Avg     39        0      414        2        1      465        54        0        0        493
                           Max    369        2     4354        8        4     4739       426        0        0       4925

         CSSY     5 Elapse Avg   .4939    .0000 8111.611    .0000    .0000 8112.355    1.4960    .0000    .0000
                           Max   .8421    .0000 40557.78    .0000    .0000 40557.78    2.3385    .0000    .0000
                    Count  Avg    130        0     2618        0        0     2880       356        0        0       3754
                           Max    217        0     3273        0        0     3710       356        0        0       3754

         Totl    16 Elapse Avg   .2616    .0025 2534.888    .0087    .0053 2535.254     .6071    .0000    .0000
                           Max  2.4697    .0401 40558.06    .1390    .0842 40561.78    7.4800    .0000    .0000
                    Count  Avg     67        0     1103        1        0     1219       148        0        0       1512
                           Max    651        7    13092       23       12    14403      1780        0        0      18770
 . . .
```

Figure 204. File Usage Summary report

Example 5:

This example produces the Temporary Storage Usage Summary report and the Transaction Temporary Storage Usage Summary report with individual Transaction ID statistics and total Transaction statistics like that shown in Figure 205 on page 425 and Figure 206 on page 425.

```
CICSPA RESUSAGE(TRANSUMM(TEMPSTOR),
                TEMPSTORSUMM(BYTRAN,TOTAL))
```

```
V2R1M0                                    CICS Performance Analyzer
                                   Transaction Temporary Storage Usage Summary

TEMP0001 Printed at  9:57:42  8/01/2004    Data from 09:14:16  3/20/2004 to 09:41:25  3/20/2004    APPLID IYK2Z1V1      Page      1

                                   ************* TS Calls ************ *** I/O Waits ***
Tran                #Tasks             Get    Put_Aux Put_Main Total     TS     Shr_TS
----                -------            --------- -------- -------- -------- -------- --------
CECI                    3 Elapse Avg                                    .0000    .0139
                          Max                                          .0000    .0139
                        Count Avg        2        0        6        8        0       10
                          Max            3        0       12       12        0       17

                                   ************* TS Calls *********** *** I/O Waits ***          ******** TS Item *********
      TSQueue        #Tasks             Get    Put_Aux Put_Main Total     TS     Shr_TS              Get    Put_Aux  Put_Main
---------------- -------            -------- -------- -------- -------- -------- --------           -------- -------- --------
   TS_Queue1           2 Elapse Avg   .0104    .0000    .0002    .0106    .0000    .0139
                          Max         .0104    .0000    .0002    .0104    .0000    .0139
                        Count Avg        2        0        6        8        0       10              56       44      378
                          Max            3        0       12       12        0       17 Length      112       88      756

   TS_Queue2           1 Elapse Avg   .0104    .0000    .0002    .0000    .0000    .0139
                          Max         .0104    .0000    .0002    .0000    .0000    .0139
                        Count Avg        2        0        6        8        0      104              56       44      378
                          Max            2        0        6        8        0      104 Length      112       88      756

   Total               2 Elapse Avg   .0104    .0000    .0002    .0000    .0000    .0139
                          Max         .0104    .0000    .0002    .0104    .0000    .0139
                        Count Avg        2        0        6        8        0       10              56       44      378
                          Max            3        0       12       12        0       17 Length      112       88      756
```

Figure 205. Transaction Temporary Storage Usage Summary report

```
V2R1M0                                    CICS Performance Analyzer
                                     Temporary Storage Usage Summary

TEMP0001 Printed at  9:57:42  8/01/2004    Data from 09:14:16  3/20/2004 to 09:41:25  3/20/2004    APPLID IYK2Z1V1      Page      3

                                   ************* TS Calls ************ *** I/O Waits ***          ******** TS Item *********
   TSQueue      Tran #Tasks             Get    Put_Aux Put_Main Total     TS     Shr_TS              Get    Put_Aux  Put_Main
---------------- ---- -------            -------- -------- -------- -------- -------- --------           -------- -------- --------
CJBTSQNAME      CECI    1 Elapse Avg   .0000    .0000    .0000    .0000    .0739    .0000
                          Max         .0000    .0000    .0000    .0000    .0739    .0000
                        Count Avg        0        0        0        0       66        0               0        0        0
                          Max            0        0        0        0       66        0 Length        0        0        0

---------------- ---- -------            -------- -------- -------- -------- -------- --------           -------- -------- --------
MONITOR         CZUX   15 Elapse Avg   .0000    .0000    .0000    .0000    .0022    .0000
                          Max         .0000    .0000    .0000    .0000    .0048    .0000
                        Count Avg        0        0        0        0        1        0               0        0        0
                          Max            0        0        0        0        2        0 Length        0        0        0

---------------- ---- -------            -------- -------- -------- -------- -------- --------           -------- -------- --------
SHAR1           CEBR    1 Elapse Avg   .0000    .0000    .0000    .0000    .0000    .0012
                          Max         .0000    .0000    .0000    .0000    .0000    .0012
                        Count Avg        0        0        0        0        0        2               0        0        0
                          Max            0        0        0        0        0        2 Length        0        0        0

                CECI    1 Elapse Avg   .0000    .0000    .0000    .0000    .0000    .0028
                          Max         .0000    .0000    .0000    .0000    .0000    .0028
                        Count Avg        0        0        0        0        0        4               0        0        0
                          Max            0        0        0        0        0        4 Length        0        0        0

                Totl    2 Elapse Avg   .0000    .0000    .0000    .0000    .0000    .0020
                          Max         .0000    .0000    .0000    .0000    .0000    .0028
                        Count Avg        0        0        0        0        0        3               0        0        0
                          Max            0        0        0        0        0        4 Length        0        0        0
```

Figure 206. Temporary Storage Usage Summary report

DB2 - DB2 report

The **DB2** operand requests the DB2 report.

Note: To maximize the DB2 details available for reporting, define your CICS-DB2 resources with ACCOUNTREC(TASK) or ACCOUNTREC(UOW). See the *CICS DB2 Guide* for more information on accounting for DB2 resources and the setup required.

The command format is:

```
CICSPA DB2(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [LIST(
                CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2|ALL),]
            [LONGSUMMARY(
                CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2|ALL),]
            [SHORTSUMMARY,]
            [SSID(id1,id2,...),]
            [CMFONLY,]
            [LISTZERO,]
            [MAXLONGSUM|NOMAXLONGSUM,]
            [LINECOUNT(nnn),]
            [TITLE1('...sub-heading left ...'),]
            [TITLE2('...sub-heading right...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                ...))])
```

The options are:

OUTPUT

Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **DB2Rnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

EXTERNAL

Specifies the DDname for the work data set used by the external sort facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

LIST Requests the DB2 List report, a detailed list of all network units-of-work with DB2 activity. This report consolidates CICS CMF performance class records and DB2 accounting statistics from a single or multiple CICS systems. Each line on the report is a single CMF performance or DB2 accounting record.

Specify one or more of the following operands (or **ALL**) to control which DB2 accounting details are to be reported.

Note: Thread Identification is always reported.

CLASS1	Thread Time
CLASS2	In-DB2 Time
CLASS3	Suspend Time
BUFFER	Buffer Manager Summary
LOCKING	Locking Summary
DML1	SQL DML Query/Update
DML2	SQL DML 'Other'

If LIST is specified without operands, the default is
LIST(CLASS1,CLASS2,BUFFER,LOCKING).

LONGSUMmary

Requests the DB2 Long Summary report which summarizes these details by transaction and program (CMF performance data) and SSID and plan (DB2 accounting data) within APPLID. For each, average and maximum values are reported. CMF performance data is presented in columns across the page and associated DB2 accounting data is presented in rows down the page.

Specify one or more of the following operands (or **ALL**) to control which of the DB2 accounting details to include in the report.

Note: Thread Utilization is always reported.

CLASS1	Thread Time
CLASS2	In-DB2 Time
CLASS3	Suspend Time
BUFFER	Buffer Manager Summary
LOCKING	Locking Summary
DML1	SQL DML Query/Update
DML2	SQL DML 'Other'

If LONGSUM is specified without operands, the default is
LONGSUM(CLASS1,CLASS2,BUFFER,LOCKING).

SHORTSUMmary

Requests the DB2 Short Summary report, an abridged version of the DB2 Long Summary report, giving averages only (no maximums). This is the default report.

SSID Requests reporting to be limited to the DB2 Subsystem IDs that match the specified IDs or patterns. Masking characters are supported: **%** for one and only one character, and ***** for many or none.

CMFONLY

Requests CICS PA to process only CMF performance (SMF 110) records and not DB2 accounting records. If not specified, CICS PA will also process associated DB2 accounting (SMF 101) records. The default is to process both.

LISTZERO

Applies to the DB2 List report. Specify this option to report CMF performance records with DB2REQCT=0 provided they are part of a network unit-of-work that has some DB2 activity. The default is to omit the CMF performance records with no DB2 activity.

MAXLONGSUM|NOMAXLONGSUM

Applies to the DB2 Long Summary report.

MAXLONGSUM requests that both average and maximum values are to be reported in the DB2 accounting detail lines. This is the default.

NOMAXLONGSUM requests that only the averages are to be reported (maximum values omitted).

LINECount

Controls the number of lines per page. See "LINECount" on page 345 for further information.

DB2 - DB2 report

TITLE1, TITLE2
Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

DB2 examples

Example 1: Default report (DB2 Short Summary)

This example produces the default report like that shown in Figure 207. The default is the Short Summary report with both CMF performance records (SMF 110) and DB2 accounting (SMF 101) records reported. CMF performance records with DB2REQCT=0 are not included.

```
CICSPA DB2
```

The following command achieves the same:

```
CICSPA DB2(SHORTSUM)
```

```
V2R1M0                                    CICS Performance Analyzer
                                            DB2 - Short Summary

DB2R0001 Printed at 15:51:15  1/20/2005    Data from 15:48:40  7/12/2004 to 15:50:42  7/12/2004   APPLID CICS53T1      Page      1

Tran/ Program/ #Tasks/  ...........Average Elapsed Time............  .....Average CPU Time.....  .....Average Count....... #Abends
SSID  Planname #Threads Response  Thread   In-DB2  DB2ConWt DB2ThdWt   User    Thread   In-DB2   DB2Reqs GetPage SysPgUpd

CRD7  CORD07P      2     .4043                        .0000    .0000  .031008                      3.0                         0
DB2P  CPAPLAN      2             .0631    .0106                                .011408  .009811            4.0      .0

CRD9  CORD09P      2     .4091                        .0000    .0000  .030680                      3.0                         0
DB2P  CPAPLAN      2             .0776    .0104                                .011478  .009870            4.0      .0

SALE  DFH0SAL2    10     .2271                        .0000    .0000  .038147                      1.0                         0
DB2P  CPAPLAN     10             .1394    .0033                                .003865  .003136            N/P      N/P

SAL1  DFH0SAL1     2    1.0268                        .0000    .0000  .038656                      1.0                         0
DB2P  CPAPLAN      2             .7898    .0033                                .003843  .003114            N/P      N/P

*** Total ***    16     .3720                        .0000    .0000  .036385                      1.5                         0
DB2P             16             .2034    .0051                                .005757  .004809            4.0      .0
```

Figure 207. DB2 report (Short Summary)

Example 2: DB2 Long Summary

This example produces a DB2 Long Summary like that in Figure 208.

```
CICSPA DB2(LONG(CLASS1,CLASS2,BUFFER,LOCKING))
```

These are the default DB2 accounting details for the DB2 Long Summary. The following command achieves the same:

```
CICSPA DB2(LONGSUM)
```

```
V2R1M0                                       CICS Performance Analyzer
                                                DB2 - Long Summary

DB2R0001 Printed at 10:48:30  1/19/2005    Data from 16:58:04  7/03/2004 to 16:17:57  7/12/2004    APPLID CICS53A1     Page       1

               Avg      Max      Avg      Max      Avg      Max      Avg      Max      Avg      Max
Tran/ Program/ #Tasks/  DB2ConWt DB2ConWt DB2ThdWt DB2ThdWt DB2Rqst  DB2Rqst  UserCPU  UserCPU  Response Response  #Abends
SSID  Planname #Threads Time     Time     Time     Time     Count    Count    Time     Time     Time     Time

CRDE  CORD14P       2   .0000    .0000    .0000    .0000     24.0       24   .036896  .052480    .3141    .5208         0

DB2P  CPAPLAN       4   Thread Utilization    Entry=     0  Pool=      4  Command=        0
                        Class1: Thread Time   Avg: Elapsed=   .0369  CPU= .020809
                                              Max: Elapsed=   .0395  CPU= .024879
                        Class2: In-DB2 Time   Avg: Elapsed=   .0166  CPU= .015381
                                              Max: Elapsed=   .0201  CPU= .019369
                        Buffer Manager Summary Avg: GtPgRq=    3.3  SyPgUp=      .0
                                              Max: GtPgRq=      7  SyPgUp=       0
                        Locking Summary       Avg: Suspnd=      .0  DeadLk=      .0  TmeOut=      .0  MxPgLk=     1.0
                                              Max: Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1

CRD4  CORD04P       3   .0000    .0000    .0000    .0000   3075.3     9178  1.593973 4.693520    8.5758  24.9328         0

DB2P  CPAPLAN       4   Thread Utilization    Entry=     0  Pool=      4  Command=        0
                        Class1: Thread Time   Avg: Elapsed=   .0569  CPU= .025045
                                              Max: Elapsed=   .0850  CPU= .029168
                        Class2: In-DB2 Time   Avg: Elapsed=   .0205  CPU= .018777
                                              Max: Elapsed=   .0241  CPU= .022986
                        Buffer Manager Summary Avg: GtPgRq=    3.3  SyPgUp=      .0
                                              Max: GtPgRq=      7  SyPgUp=       0
                        Locking Summary       Avg: Suspnd=      .0  DeadLk=      .0  TmeOut=      .0  MxPgLk=     1.0
                                              Max: Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
 . . .

*** Total ***      23   .0000    .0000    .0000    .0000    417.3     9178   .227745 4.693520    1.2403  24.9328         0

DB2P             26   Thread Utilization    Entry=     0  Pool=     26  Command=        0
                        Class1: Thread Time   Avg: Elapsed=   .0702  CPU= .025824
                                              Max: Elapsed=   .5211  CPU= .055524
                        Class2: In-DB2 Time   Avg: Elapsed=   .0204  CPU= .018508
                                              Max: Elapsed=   .0471  CPU= .040673
                        Buffer Manager Summary Avg: GtPgRq=    2.8  SyPgUp=      .0
                                              Max: GtPgRq=     11  SyPgUp=       0
                        Locking Summary       Avg: Suspnd=      .0  DeadLk=      .0  TmeOut=      .0  MxPgLk=     1.0
                                              Max: Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
```

Figure 208. DB2 report (Long Summary)

DB2 examples

Example 3: DB2 List and DB2 Recap

This produces a DB2 List report like that in Figure 209. An example of the Recap report which is always printed at the end of processing is shown in Figure 210 on page 431.

```
CICSPA DB2(LIST(ALL),LISTZERO)
```

```
V2R1M0                                      CICS Performance Analyzer
                                                  DB2 - List

DB2R0001 Printed at 14:22:11  7/15/2004    Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004                    Page      1

Tran/ Userid/ Program/                UOW R            ..DB2 Wait Time..   DB2   User CPU                              Response A
SSID  Authid  Planname  APPLID    Task Seq T Term LUName Connect Thread  ReqCnt   Time    Start Time   Stop Time     Time  B

CRD8 CICSUSER CORD08P  CICPAOR1    53  2 T <AAK CICPTOR1  .0000   .0000     22    .0185  15:49:40.023 15:49:40.105   .0827
CRD5 CICSUSER CORD05P  CICPAOR1    52  2 T <AAK CICPTOR1  .0000   .0000     12    .0137  15:49:39.960 15:49:40.016   .0566
CRDD CICSUSER CORD13P  CICPTOR1    45  1 T 0013 TCP00013  N/A     N/A        0    .0390  15:49:39.521 15:49:40.121   .6006

DB2P CICSUSER CPAPLAN  CICPAOR1    52  Thread Identification    ID=POOLCRD50001  NETName=P390.TCP00013     UOWID=1F7D3A6472BA
                                                               Begin Time: 15:49:39.969  7/12/03  End Time: 15:49:40.007  7/12/03
                                       Class1: Thread Time     Elapsed=   .0379  CPU= .019536
                                       Class2: In-DB2 Time     Elapsed=   .0184  CPU= .014040
                                       Class3: Suspend Time    Total  =    N/P  I/O=     N/P  Lock/Latch=    N/P  Other=     N/P
                                       Buffer Manager Summary  GtPgRq=      2  SyPgUp=       0
                                       Locking Summary         Suspnd=      0  DeadLk=       0  TmeOut=      0  MxPgLk=      1
                                       SQL DML Query/Update    Sel=      0  Ins=       0  Upd=      0  Del=       0
                                       SQL DML 'Other'         Des=      0  Pre=       0  Ope=      1  Fet=      10  Clo=       1

DB2P CICSUSER CPAPLAN  CICPAOR1    53  Thread Identification    ID=POOLCRD50001  NETName=P390.TCP00013     UOWID=1F7D3A6472BA
                                                               Begin Time: 15:49:40.032  7/12/03  End Time: 15:49:40.097  7/12/03
                                       Class1: Thread Time     Elapsed=   .0654  CPU= .031185
                                       Class2: In-DB2 Time     Elapsed=   .0231  CPU= .021452
                                       Class3: Suspend Time    Total  =    N/P  I/O=     N/P  Lock/Latch=    N/P  Other=     N/P
                                       Buffer Manager Summary  GtPgRq=      2  SyPgUp=       0
                                       Locking Summary         Suspnd=      0  DeadLk=       0  TmeOut=      0  MxPgLk=      1
                                       SQL DML Query/Update    Sel=      0  Ins=       0  Upd=      0  Del=       0
                                       SQL DML 'Other'         Des=      0  Pre=       0  Ope=      1  Fet=      20  Clo=       1
  . . .
```

Figure 209. DB2 report (List)

```
V2R1M0                                  CICS Performance Analyzer
                                              DB2 - Recap

DB2R0001 Printed at 14:22:11  7/15/2004   Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004                    Page      1

Records processed by the DB2 report processor:
                                                      Count   % of Total
  CMF performance class records:                     ---------  ----------
    Included  . . . . . . . . . . . . . . . . . . .      120        .6%
    Excluded:
      CICS PA record selection  . . . . . . . . . .    20,670      99.4%
      No DB2 activity . . . . . . . . . . . . . . .         0        .0%
      Other . . . . . . . . . . . . . . . . . . . .         0        .0%
    Total . . . . . . . . . . . . . . . . . . . . .    20,790

  DB2 accounting records:
    Included  . . . . . . . . . . . . . . . . . . .       30        .5%
    Excluded:
      CICS PA record selection  . . . . . . . . . .         0        .0%
      Not CICS Attach . . . . . . . . . . . . . . .       368       6.6%
      Accounting Token not set  . . . . . . . . . .     5,196      92.9%
      Other . . . . . . . . . . . . . . . . . . . .         0        .0%
    Total . . . . . . . . . . . . . . . . . . . . .     5,594


Network units-of-work with DB2 activity:
                                                      Count   % of Total
  Network units-of-work where:                       ---------  ----------
    DB2 accounting records were resolved  . . . . . .      30      100.0%
    DB2 accounting records were not resolved  . . . .       0        .0%
    DB2 accounting records were not present . . . . .       0        .0%
    Total . . . . . . . . . . . . . . . . . . . . .        30

  CMF performance class records with DB2 activity:
    Matched to a DB2 accounting record  . . . . . . .      30      100.0%
    Not matched to any DB2 accounting records . . . .       0        .0%
    Total . . . . . . . . . . . . . . . . . . . . .        30

  CMF performance class records with no DB2 activity:
    Total . . . . . . . . . . . . . . . . . . . . .         0

  DB2 accounting records:
    Eligible for summary reporting  . . . . . . . . .      30      100.0%
    Matched to a single CICS task   . . . . . . . . .      30      100.0%
    Matched to two or more CICS tasks . . . . . . . .       0        .0%
    Not matched to any CICS tasks . . . . . . . . . .       0        .0%
    Total . . . . . . . . . . . . . . . . . . . . .        30
```

Figure 210. DB2 report (Recap)

MQ - WebSphere MQ report

The **MQ** operand requests the WebSphere MQ report.

Note: WebSphere MQ accounting records are produced when the Accounting Trace component of WebSphere MQ is activated. If the MQ accounting trace is active, CLASS(1) subtype 0 records are always produced, but subtypes 1 and 2 are only produced if CLASS(3) is specified when the trace is activated.

See the *WebSphere MQ for z/OS System Setup Guide* for more information on accounting for WebSphere MQ resources and the setup required.

The command format is:

```
CICSPA MQ(
         [OUTPUT(ddname),]
         [LIST,]
         [SUMMARY,]
         [CLASS1|CLASS3,]
         [SORT([TRAN,][QUEUE]),]
         [QNAME(name),]
         [SSID(id1,id2,...),]
         [LINECount(nnn),]
         [TITLE1('...sub-heading left ...'),]
         [TITLE2('...sub-heading right...'),]
         [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                            ...))])
```

The options are:

OUTPUT
Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **MQ00nnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

LIST   Requests the WebSphere MQ List report.

SUMMARY
Requests the WebSphere MQ Summary report.

CLASS1|CLASS3
CLASS1 requests the reports to process MQ Class 1 records. This is the default.

CLASS3 requests the reports to process MQ Class 3 records.

If the List report is requested, CLASS1 and CLASS3 cannot both be specified because of the different report formats.

SORT   Specifies the required sorting sequence of the Class 3 Summary report. The choices are:
1. SORT(TRAN) sorts by Transaction ID. This is the default.
2. SORT(QUEUE) sorts by WebSphere Queue name.
3. SORT(TRAN,QUEUE) sorts by Transaction ID, then Queue name.
4. SORT(QUEUE,TRAN) sorts by Queue name, then Transaction ID.

QNAME
Selects records for a particular WebSphere MQ queue name. You can specify a pattern such as CICSMQ* to include more than one queue name. The queue name is case-sensitive.

SSID   Requests reporting to be limited to the MQ Subsystem IDs that match the

specified IDs or patterns. Masking characters are supported: **%** for one and only one character, and ***** for many or none.

LINECount

Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

The fields that can be specified in Selection Criteria for filtering MQ accounting (SMF 116) records are:

APPLID	CICS APPLID
TRAN	CICS Transaction ID
TASKNO	CICS Task ID
START	Thread Start Time
STOP	Thread End Time
ACTIVE	Thread Begin-End Time

MQ examples

Example 1: Default report (MQ Class 1 Summary)

This example produces the default report like that shown in Figure 211. The default is the Summary report for Class 1 data.

```
CICSPA MQ
```

The following command achieves the same:

```
CICSPA MQ(SUMMARY,CLASS1)
```

```
   V2R1M0                                          CICS Performance Analyzer
                                                  WebSphere MQ Class 1 Summary

 MQ000001 Printed at 17:47:44  8/04/2004  Data from 14:50:34  1/13/2004 to 14:51:24  1/13/2004                     Page       1


 ------- Key --------        ----- Average -----  --------- Average GET Counts ---------   -------- Average PUTx Counts ---------
 SSID  APPLID    TRAN    Count      CPU     Calls    <=99    <=999   <=9999   >=10000      <=99    <=999   <=9999   >=10000

 MQMD  CICS53A1  CKCN      1   0.000747     0.0      0.0      0.0      0.0      0.0          0.0      0.0      0.0      0.0
 MQMD  CICS53A1  CKTI      1   0.001541     0.0      0.0      0.0      0.0      0.0          0.0      0.0      0.0      0.0
 MQMD  CICS53A1  MQA1      1   0.064342    60.0      0.0      0.0      0.0      0.0         60.0      0.0      0.0      0.0
```

Figure 211. MQ Summary report (Class 1)

OMEGAMON - OMEGAMON reports

The **OMEGAMON** operand requests the OMEGAMON reports.

The command format is:

```
CICSPA OMEGAMON[(
            [OUTPUT(ddname|OMEG0001),]
            [LINECNT(nnn),]
            [DBMS(ADABAS,DATACOM,IDMS,SUPRA),]
            [LIST,]
            [SUMMARY(TRAN,DATABASE,AVG,MAX,MIN,TOT,DEV,PEAK(percentile)),]
            [PRINT(TOTALS,DB),]
            [TITLE1('...sub-heading left ...'),]
            [TITLE2('...sub-heading right...')]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                               ...))])]
```

The options are:

OUTPUT

> Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **OMEGnnnn** where nnnn is the report sequence number **0001-9999.** See "OUTPUT" on page 344 for further information.

LINECount

> Controls the number of lines per page. See "LINECount" on page 345 for further information.

DBMS The types of DBMS for which you want to produce reports.

LIST Requests the OMEGAMON List report.

SUMMARY

> Requests the OMEGAMON Transaction Summary report (**TRAN**), the Database Summary report (**DATABASE**), and also the statistical functions that these reports use to summarize transaction data:
>
> **AVG** Average
> **MAX** Maximum
> **MIN** Minimum
> **TOT** Total
> **DEV** Standard deviation
> **PEAK** Peak percentile. Specify a percentile value between 50 and 100 to report the value for that percentage of transactions. Computations assume a normal distribution. For example, specify **PEAK(95)** to report the value for 95% of transactions.
>
> Each statistical function that you specify produces additional rows in the reports, with the function name as the row heading.

PRINT Each OMEGAMON XE for CICS (SMF 112) record contains database usage details for a single transaction. A transaction may use one database, or it may use multiple databases from different types of DBMS. For each type of DBMS used by the transaction, the record contains a "totals" segment. For each database used by the transaction, the record contains a "detail" segment.

> **PRINT(TOTALS)**
>
> > Includes totals sections in a report, using information from totals segments in the input records.

> **PRINT(DB)**
>> Includes database sections in a report, using information from detail segments in the input records.
>
> The **PRINT** operand is relevant only to the List report and the Transaction Summary report; it has no effect on the Database Summary report.

> **TITLE1, TITLE2**
>> Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

> **SELECT(PERFORMANCE(INCLUDE|EXCLUDE**
>> Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.
>>
>> CICS PA checks only the following Performance Selection Criteria fields when filtering OMEGAMON records:

APPLID	CICS APPLID
NETUOWPX	Originating System VTAM network name
UOWID	Unit of work ID
START	Task start time (see Note below)
TRAN	CICS transaction ID
FILENAME	Database (or file) name

>> All other fields are ignored.

>> **Note:** Report Interval-based selection for OMEGAMON records is limited to the Attach (START) time; the STOP and ACTIVE options are ignored.

OMEGAMON examples

Example 1: Default report (all reports)

This example produces the default report like that shown in Figure 212. The default is all reports: List report, Database Summary report, and Transaction Summary report for all types of DBMS.

```
CICSPA MQ
```

```
 V2R1M0                                    CICS Performance Analyzer
                                         WebSphere MQ Class 1 Summary
To be updated
```

Figure 212. OMEGAMON reports

LOGGER - System Logger report or extract

The **LOGGER** operand requests the System Logger report or extract.

The command format for the System Logger report is:

```
CICSPA LOGGER(
          [OUTPUT(ddname),]
          [EXTERNAL(ddname),]
          [SUMMARY[(SUMMARYINTERVAL(hh:mm))],]
          [LIST[(ALTER,TIMESEQ)],]
          [INTERVAL(minutes),]
          [SORT(LOGSTREAM|STRUCTURE),]
          [LOGSTREAM('name.or.pattern'),]
          [STRUCTURE('name.or.pattern'),]
          [TITLE1('...up to 64 characters...'),]
          [TITLE2('...up to 64 characters...'),]
          [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))])
```

The command format for the System Logger extract is:

```
CICSPA LOGGER(
          [OUTPUT(ddname),]
          [DDNAME(ddname),]
          [DELIMIT('field-delimiter'),]
          [LABELS|NOLABELS,]
          [FLOAT,]
          [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))])
```

The options are:

OUTPUT

Controls the report output DDname. See "OUTPUT" on page 344 for further information. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output, and xxxx is:

LOGR for the System Logger report.

EXPT for the Recap report for the System Logger extract.

DDNAME

Specifies the DDname of the extract data set where the exported performance data is written. When this operand is specified, instead of producing the report, CICS PA produces the extract file, and a Recap of the extract process is written to the OUTPUT operand report file.

The DDname can be up to 8 alphanumeric characters, with the first non-numeric. The CICS PA dialog assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99.** (See the sample JCL in Figure 166 on page 329).

DELIMIT

Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the extract data set. The default is a semicolon DELIMIT(';').

LABELS|NOLABELS

LABELS indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

NOLABELS indicates that CICS PA is not to write a field labels record to the extract data set.

FLOAT

Write numeric fields in the extract in S390 FLOAT format.

Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

EXTERNAL

Specifies the DDname for the work data set used by the external sort facility. If not specified, CICS PA assigns an External Work File from a pool of External Work Files with DDnames in the format **CPAXWnnn** where nnn is the sequence number **001-999.** Refer to "EXTERNAL" on page 345 for further information.

SUMMARY

Requests the System Logger Logstream Summary and Structure Summary reports. This is the default.

To present a single summary of records for the entire reporting period, omit the optional **SUMMARYINTERVAL** suboperand (this is the default). To summarize records at intervals within the reporting period, specify **SUMMARYINTERVAL** with a multiple of the SMF reporting interval, from 00:01 to 23:59. For example, if the SMF reporting interval was 5 minutes at the time that the logger records were written, then you can generate a System Logger Summary report that summarizes the logger records at any multiple of 5 minutes: 05:00, 10:00, 15:00 etc.

If you specify **SUMMARYINTERVAL**, then ensure that the value you specify is an exact multiple of the SMF reporting interval. Otherwise, each of the summaries in the report may not be calculated from the same number of records.

LIST   Requests the System Logger List report, a detailed list of Logstream writes, Logstream deletes, and Logstream events.

Specify **ALTER** to also report Structure Alter events. These apply to Structures, not individual Logstreams, and are reported with a Logstream name of `*ALTER*`.

By default, the List report entries are printed in Logstream or Structure name sequence according to the **SORT** operand. However, by specifying **TIMESEQ,** the entries will be printed in Logstream or Structure name sequence within each Interval expiry period.

INTERVAL

Specifies the SMF global recording interval as specified in the INTVAL parameter of the SMFPRMnn PARMLIB member.

Specify an interval from 1 to 60 minutes. If not specified, CICS PA uses the recording interval in effect on the reporting system. The interval value is used by CICS PA for rate per second calculations in the System Logger Summary reports. If the interval used by CICS PA does not match the data, the total interval and rate calculations will be incorrect.

SORT   Specifies the sort sequence for the List and Summary reports.

Specify **LOGSTREAM** to sort by Logstream name, MVS ID, Structure name, then time stamp. This is the default.

LOGGER - System Logger report

Specify **STRUCTURE** to sort by Structure name, Logstream name, MVS ID, then time stamp.

LOGSTREAM

Optional filter on Logstream name. Specify a name or pattern enclosed in quotes. Masking characters **%** and ***** are allowed. The percent (%) is for a single character substitution and the asterisk (*) is for many or none. For example:

LOGSTREAM('TEST.DFHLOG')

                                        must match exactly

LOGSTREAM('PROD.*')   can match PROD.DFHLOG

LOGSTREAM('PROD.MVSA%')

                                        can match PROD.MVSA1, but not PROD.MVSA1LOG

STRUCTURE

Optional filter on Structure name. Specify a name or pattern enclosed in quotes. Masking characters **%** and ***** are allowed. For example:

STRUCTURE('TEST.DFHLOG')

                                        must match exactly

STRUCTURE('PROD.*')   can match PROD.DFHLOG

STRUCTURE('PROD.MVSA%')

                                        can match PROD.MVS1, but not PROD.MVS1LOG

TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(LOGGER(INCLUDE|EXCLUDE

Specifies what data to include or exclude from the report or extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

LOGGER examples

Example 1: Default report

The default is the System Logger Summary report like that shown in Figure 213 on page 439, sorted by Logstream name, without Alter events, and using the system default interval.

```
CICSPA LOGGER
```

The following command achieves the same:

```
CICSPA LOGGER(SUMMARY),SORT(LOGSTREAMNAME)
```

```
V2R1M0                                  CICS Performance Analyzer
                                  System Logger Report - Logstream Summary

LOGR0001 Printed at 10:51:02  4/07/2006    Data from  7:00:40:14  7/20/2004 to  9:59:40:16  7/20/2004    Page  7

Logstream name            MVSID  Structure name        First interval start   Last interval stop    Total Interval
IYOT1.IYO1.DFHJ03          MVS5   *DASDONLY*            06:45:00:00  7/20/2004  09:00:00:00  7/20/2004  02:15:00

            ----------- IXGWRITES ----------                    --------------- DELETIONS -----------------
                                               Bytes        Count       Count      Bytes       Bytes
                                             Writn to        With     Without      After     Int Stor
                            Total   Average    Interim       DASD        DASD    Offload    w/o DASD
                 Count      Bytes     Bytes    Storage       Write       Write   w. DASD       Write
              --------   --------  --------   --------    --------    --------   --------    --------
Total             45    2506582     55702     2543616          20           0    1130496           0
Rate(/Sec)         0        309                   314           0           0        140           0
Minimum           45    2506582               2543616          20           0    1130496           0
Maximum           45    2506582               2543616          20           0    1130496           0

              ---------------------------------------------- EVENTS -----------------------------------------------
                             Demand                                                             Demand      Staging
                            Staging      DASD       Block     Staging       Entry     Struct     Init'd     DS Async
              Offloads     Threshld    Shifts      Length        Full        Full       Full   Offloads     Buf Full
              --------     --------  --------    --------    --------    --------   --------   --------     --------
Total              2            6         6                          0           0          0          0            0
Rate(/Sec)         0            0         0                          0           0          0          0            0
Minimum            2            0         6       16998              0           0          0          0            0
Maximum            2            0         6       65372              0           0          0          0            0

              --------------------- EVENTS ------------------------      -------------- DASD Writes -----------------
                                                Struct      Struct
                                               Rebuilds    Rebuilds                   Total
               Type1       Type2     Type3      Init'd     Complt'd       Count       Bytes     Average        Waits
              --------    --------  --------   --------    --------    --------    --------    --------     --------
Total              0           0         0          0           0           8     1114992           0            0
Rate(/Sec)         0           0         0          0           0           0         138                        0
Minimum            0           0         0          0           0           8     1114992                        0
Maximum            0           0         0          0           0           8     1114992                        0
```

Figure 213. System Logger report (Summary report) (Part 1 of 2)

LOGGER examples

```
V2R1M0                                   CICS Performance Analyzer
                                 System Logger Report - Structure Summary

 LOGR0001 Printed at  10:51:02  4/07/2006    Data from  7:00:40:14  7/20/2004 to  9:59:40:16  7/20/2004    Page  8

 Structure name      MVSID     First interval start   Last interval stop                     Total Interval
 LOG_JG              MVS5      07:00:00:00  7/20/2004 09:00:00:00  7/20/2004                  02:00:00
```

	----------- IXGWRITES ----------			--------------- DELETIONS -----------------				
	Count	Total Bytes	Average Bytes	Bytes Writn to Interim Storage	Count With DASD Write	Count Without DASD Write	Bytes After Offload w. DASD	Bytes Int Stor w/o DASD Write
	--------	--------	--------	--------	--------	--------	--------	--------
Total	9025	2549654	283	4622848	4892	3484	1379383	984622
Rate(/Sec)	1	315		571	0	0	170	122
Minimum	0	0		0	0	0	0	0
Maximum	9022	2546799		4619520	4891	3484	1379267	984622

				----------- EVENTS -----------				Demand	Staging
	Offloads	Staging Threshld	Demand DASD Shifts	Block Length	Staging Full	Entry Full	Struct Full	Init'd Offloads	DS Async Buf Full
	--------	--------	--------	--------	--------	--------	--------	--------	--------
Total	3	257	1		0	0	0	0	0
Rate(/Sec)	0	0	0		0	0	0	0	0
Minimum	0	0	0	116	0	0	0	0	0
Maximum	2	257	1	1422	0	0	0	0	0

	--------------------- EVENTS ------------------------					------------- DASD Writes -----------------		
	Type1	Type2	Type3	Struct Rebuilds Init'd	Struct Rebuilds Complt'd	Count	Total Bytes	Average	Waits
	--------	--------	--------	--------	--------	--------	--------	--------	--------
Total	9025	0	0	0	0	9	1575063	0	5
Rate(/Sec)	1	0	0	0	0	0	194		0
Minimum	0	0	0	0	0	0	0		0
Maximum	9022	0	0	0	0	8	1574907		5

Figure 213. System Logger report (Summary report) (Part 2 of 2)

Example 2:

This example produces the System Logger List report like that shown in Figure 214.

```
CICSPA LOGGER(LIST(ALTER))
```

```
V2R1M0                                      CICS Performance Analyzer
                                           System Logger Report - List

LOGR0001 Printed at 10:51:02  4/07/2006    Data from  7:00:40:14  7/20/2004 to  9:59:40:16  7/20/2004      Page   1

Logstream name                    Structure name         MVSID      Flag        Interval expired at       Level
IYOT1.DFHLOG                      LOG_JG                 MVS5       Staging     09:00:00:00  7/20/2004    SP6.0.8

          ----------- IXGWRITES ----------             --------------- DELETIONS -----------------
                                            Bytes       Count      Count      Bytes        Bytes
                                           Writn to     With       Without    After        Int Stor
                       Total    Average    Interim      DASD       DASD       Offload      w/o DASD
          Count        Bytes    Bytes      Storage      Write      Write      w. DASD      Write
          --------     --------  --------   --------     --------   --------   --------     --------
          11248        4348827   386        6768128      0          9327       0            3348643

          ------------------------------------------------- EVENTS --------------------------------------------------
                                 Demand                                        Demand       Minimum     Maximum     Staging
                       Staging   DASD       Staging      Entry      Struct      Init'd       Block       Block       DS Async
          Offloads     Threshld  Shifts     Full         Full       Full        Offloads     Length      Length      Buf Full
          --------     --------  --------   --------     --------   --------    --------     --------    --------    --------
          3            0         0          0            0          0           0            116         1422        0

          --------------------- EVENTS -------------------------       ------------- DASD Writes -----------------
                                            Struct       Struct
                                            Rebuilds     Rebuilds                 Total
          Type1        Type2     Type3      Init'd       Complt'd   Count        Bytes       Average     Waits
          --------     --------  --------   --------     --------   --------     --------    --------    --------
          11216        32        0          0            0          0            0           0           0

Logstream name                    Structure name         MVSID      Level
*ALTER*                          LOG_JG                 MV55       SP6.0.8

------------ STRUCTURE ALTER ----------------
SMF record time stamp   9:36:38:05  7/20/2004

          Current      Offloads  Current    Targeted     Struct     Log         Log
          Bytes                  Avg        Avg          Size       Data        Streams
          Written                Bufsz      Bufsz        (Blocks)   Writes      Connectd
          --------     --------  --------   --------     --------   --------    --------
          0            2         768        768          5056       0           0
```

Figure 214. System Logger report (List report)

GRAPH - Graph reports

The **GRAPH** operand requests either of two graph reports:

1. The Transaction Response Time Graph report. This report produces two graphs:
   a. The Average Response Time (in seconds).
   b. The Maximum Response Time (in seconds).

2. The Transaction Rate Graph report. This report produces two graphs:
   a. The Average Response Time (in seconds).
   b. The Number of Transactions Completed.

The Transaction Rate Graph report produces two graphs:

The command format is:

```
CICSPA GRAPH(RESPONSE|TRANRATE,
             [OUTPUT(ddname),]
             [RANGE1(nnnnn),]
             [RANGE2(nnnnn),]
             [INTERVAL(hh:mm:ss),]
             [LINECount(nnn),]
             [TITLE1('...up to 64 characters...'),]
             [TITLE2('...up to 64 characters...'),]
             [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                 ...))])
```

The options are:

RESPONSE|TRANRATE

> Specify **RESPONSE** to request the Transaction Response Time Graph. This is the default.

> Specify **TRANRATE** to request the Transaction Rate Graph.

> Only one may be specified per **GRAPH** operand.

OUTPUT

> Controls the report output DDname. If not specified, CICS PA assigns a DDname in the format **xxxxnnnn** where nnnn is the report sequence number **0001-9999** and xxxx is the type of graph:
> **GRSP**   Transaction Response Time Graph
> **GRTE**   Transaction Rate Graph

> See "OUTPUT" on page 344 for further information.

RANGE1

> Specifies the high end of the horizontal axis of the first graph. This is the **Average Response Time** in seconds.

> If not specified, CICS PA sets the scale of the horizontal axis to fit the highest recorded values.

RANGE2

> Specifies the high end of the horizontal axis of the second graph.

> • For the Transaction Response Time Graph, this is the **Maximum Response Time** in seconds.

> • For the Transaction Rate Graph, this is the **Number of Transactions Completed.**

> If not specified, CICS PA sets the scale of the horizontal axis to fit the highest recorded values.

INTERVAL

Specifies the time interval (in hours, minutes, and seconds) for the scale of the vertical axis of the graphs. The default is **00:05:00** (5 minutes).

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:
1   becomes 00:01:00
1.1   becomes 00:01:00 (rounded down from 00:01:01)
1.1.1   becomes 01:00:00 (rounded down from 01:01:01)

LINECOUNT

Controls the number of lines per page. See "LINECount" on page 345 for further information.

TITLE1, TITLE2

Controls the report title (left and right half of subheading line). See "TITLE1 and TITLE2" on page 345 for further information.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what CMF performance data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for a detailed explanation and examples.

GRAPH examples

Example 1: Response Times at minute intervals

This example produces the Transaction Response Time Graph like that shown in Figure 215 on page 444. Each line of the graph represents those transactions that completed during that 1 minute interval.

```
CICSPA GRAPH(RESPONSE,INTERVAL(1))
```

GRAPH examples

```
V2R1M0                                      CICS Performance Analyzer
                                                 Response Time

GRSP0001 Printed at  7:17:23  2/18/2005    Data from  11:10:51  2/14/2005 to 11:34:00  2/14/2005                    Page     1
   2/14/2005

    Time     Value |     Average Response Time in  Secs          |     Value |     Maximum Response Time in Secs                  |
  HH.MM.SS         |   15   30   45   60   75   90  105  120  135  150 |           |  140  280  420  560  700  840  980 1120 1260 1400 |
  11:10:52         |----|----|----|----|----|----|----|----|----|----|           |----|----|----|----|----|----|----|----|----|----|
  11:11:00    0.6  |                                                              1.4 |
  11:12:00    1.4  |                                                             16.1 |*
  11:13:00    7.7  |***                                                          50.7 |**
  11:14:00    4.9  |**                                                           34.2 |*
  11:15:00   14.9  |*****                                                        81.3 |***
  11:16:00    4.8  |**                                                           18.9 |*
  11:17:00    5.0  |**                                                           46.5 |**
  11:18:00    1.4  |                                                              9.4 |
  11:19:00    3.8  |*                                                            95.1 |***
  11:20:00    1.3  |                                                             28.5 |*
  11:21:00   14.2  |*****                                                       308.9 |***********
  11:22:00    3.7  |*                                                            51.3 |**
  11:23:00    6.2  |**                                                          102.5 |****
  11:24:00    0.7  |                                                             13.7 |
  11:25:00    3.6  |*                                                            66.4 |**
  11:26:00    3.3  |*                                                            36.2 |*
  11:27:00    3.3  |*                                                            19.8 |*
  11:28:00    4.5  |**                                                           16.1 |*
  11:29:00    6.0  |**                                                           19.4 |*
  11:30:00    2.7  |*                                                            61.0 |**
  11:31:00    3.5  |*                                                            52.1 |**
  11:32:00    3.7  |*                                                            16.2 |*
  11:33:00    0.0  |                                                              0.0 |
  11:34:00  145.6  |**************************************************      1,362.6 |**************************************************
```

Figure 215. Transaction Response Time Graph report

Example 2: Transaction Rates at 15 minute intervals

This example generates a Transaction Rate Graph with the interval set to 15
minutes.

```
CICSPA GRAPH(TRANRATE,INTERVAL(15))
```

EXPORT - Exported performance data extract

The **EXPORT** operand requests that an exported performance extract data set is to be created as a delimited text file from the CMF performance class data.

A more flexible alternative is the extract capability provided by the **LIST** and **SUMMARY** operands. For more information, see "LIST - Performance List report" on page 357 and "SUMMARY - Performance Summary report" on page 377.

A Recap report containing processing statistics is always printed at the end of extract processing.

The command format for the Export extract is:

```
CICSPA EXPORT(
           [OUTPUT(ddname),]
           [DDNAME(ddname),]
           [DELIMIT('field-delimiter'),]
           [LABELS|NOLABELS,]
           [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                             ...))])
```

The options are:

OUTPUT
> Controls the report output DDname for the Recap report. If not specified, CICS PA assigns a DDname in the format **EXPTnnnn** where nnnn is the report sequence number **0001-9999**

DDNAME
> Specifies the DDname of the output data set where the exported performance extract is written. If not specified, the default DDname is **CPAOEXPT.** The CICS PA dialog, however, assigns DDnames in the format **CPAOEXnn** where nn is the extract sequence number **01-99.** (See the sample JCL in Figure 166 on page 329).

DELIMIT
> Specifies the field delimiter, enclosed in quotes, to be used to separate each data field in the exported performance extract data set. The default is a semicolon **DELIMIT(';').**

LABELS|NOLABELS
> **LABELS** indicates that the first record to be written to the exported performance extract data set is to be a field labels record. This is the default.
>
> **NOLABELS** indicates that CICS PA is not to write a field labels record to the exported performance extract data set.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE
> Specifies what CMF performance data to include or exclude from the extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

EXPORT examples

Example 1: Default export

In this example, the export records are written to the extract data set specified in the default DD statement **CPAOEXPT** and the Recap report is written to **EXPT0001**.

```
CICSPA EXPORT
```

Example 2:

```
CICSPA EXPORT(OUTPUT(EXPT0002),
              DDNAME(CPAOEX02),
              DELIMIT(','))
```

In this example, a comma is specified for the field delimiter. The export records are written to the data set specified in the DD statement **CPAOEX02** and the Recap report is written to **EXPT0002**.

RECSEL - Record Selection extract

The **RECSEL** or **RECORDSELECTION** operand requests that a subset of CMF records be extracted from a larger SMF file. Optionally, DB2 and MQ accounting records and MVS System Logger records can also be extracted. This smaller file containing only those records of interest to you can then be used for more efficient CICS PA reporting.

A Recap report containing processing statistics is always printed at the end of extract processing.

The command format for the Record Selection extract is:

```
[CICSPA APPLID(applid1,applid2,...)]
 CICSPA RECSEL(
          [OUTPUT(ddname),]
          [DDNAME(ddname),]
          [PERFORMANCE,]
          [EXCEPTION,]
          [RESOURCE,]
          [STATISTICS,]
          [LOGGER,]
          [OMEGAMON,]
          [SSID(id1,id2,...),]
          [COMPRESS|NOCOMPRESS,]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(value1),...),...),]
          [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(value1),...),...))]
```

The options are:

OUTPUT
Controls the report output DDname for the Recap report. If not specified, CICS PA assigns a DDname in the format **RSELnnnn** where nnnn is the report sequence number **0001-9999**.

DDNAME
Specifies the DDname of the output data set where the Record Selection extract is written. If not specified, the default DDname is **CPAORSEL.** The CICS PA dialog, however, assigns DDnames in the format **CPAORSnn** where nn is the extract sequence number **01-99.** See the sample JCL in Figure 166 on page 329.

PERFORMANCE
Include CMF Performance class records in the extract. This is the default.

EXCEPTION
Include CMF Exception class records in the extract.

RESOURCE
Include CMF Transaction Resource class records in the extract.

STATISTICS
Include CICS Statistics and Server statistics class records in the extract.

LOGGER
Include MVS System Logger records in the extract.

OMEGAMON
Include OMEGAMON XE for CICS records in the extract.

SSID Requests that the Record Selection extract include DB2 accounting (SMF 101) records for the specified DB2 Subsystem IDs, and MQ accounting (SMF 116) records for the specified MQ Subsystem IDs . Masking

RECSEL - Record Selection extract

characters are supported: **%** for one and only one character, and ***** for many or none. If no DB2 SSIDs are specified, then no DB2 accounting records will be extracted. If no MQ SSIDs are specified, then no MQ accounting records will be extracted.

COMPRESS|NOCOMPRESS

Determines whether CICS PA writes CICS SMF records to the extract file in compressed or uncompressed format. This option applies whether the records in the input SMF file are compressed or not.

If you specify **COMPRESS**, CICS PA writes compressed CICS SMF records, regardless of the CICS release level that created the input records. Although CICS only introduced support for writing compressed SMF records in CICS Transaction Server Version 3.2, you can use CICS PA to create an extract file of compressed CICS SMF records for any CICS release supported by CICS PA. You can use extract files containing compressed SMF records as input to CICS PA, just like any other SMF file, even though the CICS product level that originally created those SMF records cannot write them in compressed format.

SELECT(PERFORMANCE(INCLUDE|EXCLUDE

Specifies what CMF performance data to include or exclude from the extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

SELECT(EXCEPTION(INCLUDE|EXCLUDE

Specifies what CMF exception data to include or exclude from the extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

RECSEL examples

Example 1:

Extract only those CMF performance records with Transaction ID starting with R.

```
CICSPA RECSEL(SELECT(PERFORMANCE(INC(TRAN(R*)))))
```

Example 2:

This example produces a Record Selection extract data set and a Recap report like that in Figure 216. The APPLID operand provides a filter on CICS generic APPLIDs, and the SSID operand provides a filter on DB2 Subsystem ID. You can see the effect of the filtering by comparing the DB2 accounting numbers in the End of File Record Counts and the Extract Recap.

```
CICSPA APPLID(CICS53A%),
       RECSEL(OUTPUT(RSEL0009),
              DDNAME(CPAORS09),
              SSID(DB2P))
```

```
V2R1M0                                    CICS Performance Analyzer
                                          Record Selection Extract

RSEL0001 Printed at 11:49:18  7/27/2004    Data from 15:41:28  7/12/2004 to 14:43:47  7/21/2004              Page  1

CPAORS01 Extract has completed successfully
         Data Set Name   . . . . . CICSPA.RECSEL.EXTRACT
         Record Counts:
           Performance Dictionary .        8
           Performance Class      . .    573
           Exception Class . . . . .       0
           Resource Class . . . . .        0
           Statistics . . . . . . .        0
           DB2 Accounting . . . . .      172
           MQ Accounting  . . . . .        0
           Logger . . . . . . . .          0
           SMF Records . . . . . .        20
```

Figure 216. Performance Record Selection extract (Recap report)

HDB(LOAD - HDB Load

The **HDB(LOAD** operand requests CICS PA to load historical performance data (List or Summary) or Statistics data from SMF data sets into an HDB.

A Recap report containing processing statistics is always printed at the end of extract processing.

The command format is:

```
CICSPA HDB(LOAD(hdbname)
        [,OUTPUT(ddname)])
```

The options are:

LOAD Specifies the name of the HDB to be loaded. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
> DDname for the Recap report output. CICS PA records the results of the Load operation in this File. If not specified, CICS PA assigns a DDname of **HDBLnnnn** where nnnn is the numerical sequence number **0001-9999.**

HDB(LOAD examples

The following job is provided as member CPAHDB in the sample library SCPASAMP. This JCL runs the SMF Dump process, followed by Shared System Take-up from an SMF file, HDB Load, and selected reports. By combining take-up, HDB load and reporting into a single job step, all CICS PA functions can be performed by a single pass of the SMF data.

```
//CPAHDB    JOB ,CLASS=A,NOTIFY=&SYSUID
//* SMF Dump
//SMFDUMP  EXEC PGM=IFASMFDP
//INDD     DD   DSN=SYS1.MAN1,DISP=SHR
//OUTDD1   DD   DISP=(NEW,CATLG),DSN=CICSPROD.SMFDAILY(+1)
//SYSPRINT DD   SYSOUT=A
//SYSIN    DD   *
  INDD(INDD,OPTIONS(ALL))
  OUTDD(OUTDD1,TYPE(110))
/*
//*
//* CICS PA Take-up, HDB Load, and selected reports
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=(SHR,KEEP),DSN=CICSPROD.SMFDAILY(+1)
//* HDB Register
//CPAHDBRG  DD  DISP=SHR,DSN=USER.CICSPA.HDB.REGISTER
//*
//* CICS PA command requests
//SYSIN    DD  *
  CICSPA IN(SMFIN001),
         APPLID(*),

*   Take-up from SMF into Shared System Definitions
      HDB(TAKEUP,SYSTEMS,FILESYSTEM,OUTPUT(TAKEUP)),

*   HDB Load requests
      HDB(LOAD(WEEKLY),OUTPUT(WEEKLY)),
      HDB(LOAD(DAILY),OUTPUT(DAILY)),
      HDB(LOAD(STATS),OUTPUT(STATS)),
```

```
*   HDB Report requests
    SUMMARY(BY(TRAN),OUTPUT(SUMM0001)),
    WAITANAL(BY(TRAN),OUTPUT(WAIT0001))
/*
```

Successful completion of the Load request generates a Recap report that provides information about the HDB Load, including a list of container data sets created by the Load process.

```
V2R1M0                                    CICS Performance Analyzer
                                           HDB Load Recap Report

WEEKLY   Printed at 9:28:48 8/08/2004  Data from 09:02:00 8/07/2004 to 16:29:00 8/07/2004                    Page  1


LOAD requested for HDB: WEEKLY     Register DSN: USER.CICSPA.HDB.REGISTER

The following Containers were created and loaded:
  Container DSN: CPA.WEEKLY.D03219.T092846.HDB               No of Records: 54,567
    Start Time Stamp: 2004-08-07-09.00.00       End Time Stamp: 2004-08-07-16.00.00

LOAD process complete.
```

Figure 217. HDB Load Recap report

In this example, CICS PA created container data set CPA.WEEKLY.D03219.T092846.HDB for HDB WEEKLY. It contains 54,567 records for the period 9:00am to 4:00pm on August 7, 2004.

Using SELECT statements

SELECT statements are optionally specified for report and extract processing to filter CMF records based on the values in particular fields.

The SELECT statement is used to **INCLUDE** or **EXCLUDE** data for the requested reports and extracts. Data is selected according to the type of CMF record (either **PERFORMANCE** or **EXCEPTION**) and within that, the values in certain fields.

The format of the statement is:

```
SELECT(PERFORMANCE|EXCEPTION(
       INCLUDE|EXCLUDE(field1(values1),...),
       INCLUDE|EXCLUDE(field2(values2),...),
                 ...))
```

For the complete list of operands which can be used with SELECT to control the selection of records, refer to "SELECT(PERFORMANCE" on page 458 and "SELECT(EXCEPTION" on page 459.

SELECT can be used as a *global* operand to control multiple reports and extracts, or as a *report-level* operand to control an individual report or extract. Any number of global or report-level SELECT statements can be used together in a command stream.

Note: The global SELECT criteria is not reset with the next **CICSPA** command, however:

- A report-level SELECT takes precedence over global selection criteria for that specific report or extract only, after which the selection criteria specified on the global SELECT again takes effect.
- The next global SELECT statement *adds* the new selection criteria to the previous selection criteria (it does not replace it).

Specifying Selection Criteria in Report Forms

When Selection Criteria are specified both in a Report Form and in a report that uses the Report Form, two operands **SELECT2** and **SELECT** are required, one for the Form and one for the report. If both SELECT and SELECT2 are specified, the record must match both for the record to be processed.

PERFORMANCE|EXCEPTION record types

A separate SELECT statement is used for each CMF record type.

SELECT(PERFORMANCE is used when requesting any of the reports, graphs, and extracts that process:
- CMF performance class records
- CMF transaction resource class records
- DB2 accounting records
- MQ accounting records

For more information, see "Selecting DB2 accounting records" on page 186, "Selecting MQ accounting records" on page 186 and Transaction Resource Class "Performance Selection Criteria" on page 225.

SELECT(EXCEPTION is used when requesting reports which process CMF exception class records.

No error occurs if a CMF record type is specified but is not otherwise used in the report operands. This allows all SELECTs to be specified as global operands and then used by CICS PA where appropriate.

INCLUDE|EXCLUDE actions

INCLUDE and EXCLUDE are used with SELECT to specify criteria for including or excluding certain records in a report.

INCLUDE issues an order to *include* records that match the specified criteria.

EXCLUDE issues an order to *exclude* records that match the specified criteria.

CICS PA examines each SELECT statement, comparing its specified criteria against the data in the input record, until this results in one of three outcomes:
1. The record is *included* (and no more SELECT statements will affect it).
2. The record is *excluded* (and no more SELECT statements will affect it).
3. The record is *passed forward* for checking against the next SELECT statement. If there are no more SELECT statements, either of two things can happen:
   a. If SELECT statements (global and local) specified INCLUDEs, the record is *excluded*.
   b. If SELECT statements (global and local) specified EXCLUDEs, the record is *included*.

A single SELECT statement may contain multiple INCLUDE/EXCLUDE clauses, each specifying a list of fields and values for these fields. The data in the input record is compared against the specified values for each field in the INCLUDE/EXCLUDE list. The record must match *all* the criteria coded under one INCLUDE or EXCLUDE, for the record to be accordingly included or excluded.

If there are multiple INCLUDE operands in one SELECT statement, the record must match *all* the INCLUDEs for the record to be included. Similarly, if there are multiple EXCLUDE operands in one SELECT statement, the record must match *all* the EXCLUDEs for the record to be excluded. If there are both INCLUDEs and EXCLUDEs in one SELECT statement, the final outcome depends on which of the criteria the record matches.

The decision matrix in Table 12 shows which action is taken after examining a **single** SELECT statement against a record.

Table 12. SELECT Decision Table

SELECT Statement Contains...	Result of Examination Against Record	Outcome
INCLUDEs only	All fields matched	Record included
INCLUDEs only	Not all fields matched	Record passed to next SELECT
EXCLUDEs only	All fields matched	Record excluded
EXCLUDEs only	Not all fields matched	Record passed to next SELECT
INCLUDEs and EXCLUDEs	All INCLUDE fields matched, but not all EXCLUDE fields matched	Record included
INCLUDEs and EXCLUDEs	All EXCLUDE fields matched	Record excluded

Table 12. SELECT Decision Table (continued)

SELECT Statement Contains...	Result of Examination Against Record	Outcome
INCLUDEs and EXCLUDEs	Not all INCLUDE fields matched and not all EXCLUDE fields matched	Record passed to next SELECT

Within a *single* SELECT statement, the order of the INCLUDEs and EXCLUDEs and the order of the fields specified within them does not matter, as each is analyzed to determine the outcome. However, the order of the INCLUDEs and EXCLUDEs may make a difference with *multiple* SELECT statements. For some examples, see "Examples: INCLUDE and EXCLUDE sensitivity" on page 461.

Specifying values for different field types

The CMF record data fields are defined as specific types:

- For CICS-defined fields, the field types are:
  - character
  - time stamp
  - count
  - clock, containing two parts:
    - elapsed time (TIME)
    - number of times condition occurred (COUNT)
- For user fields, the field types are:
  - CHARACTER
  - COUNT
  - clock, containing two parts:
    - elapsed time (CLOCKTIME)
    - number of times condition occurred (CLOCKCOUNT)

Each field type has a particular format for specifying in SELECT statements. User fields also require the additional operand: **VALUE.**

The following sections discuss the field types and how their values must be specified. Refer to "SELECT(PERFORMANCE" on page 458 and "SELECT(EXCEPTION" on page 459 for a complete list, by CMF record type, of all the field names used by **SELECT,** and the format of the command for each field specific to its field type.

Character fields

The command format is:

```
SELECT(PERFORMANCE|EXCEPTION(
      INCLUDE|EXCLUDE(charfld1(values1),...),...))
```

The syntax of the values for these fields is a series of words separated by commas. The length of the words is determined by the field lengths. If the word is too short, it is padded with blanks on the right. If it is too long, a command error occurs. For each character field name, a maximum of 200 characters is allowed.

For example, the following command includes the performance records for transactions TR01, TR02, and TR03 on terminal TM01.

```
SELECT(PERFORMANCE(
      INCLUDE(TRAN(TR01,TR02,TR03),
            TERM(TM01))))
```

CICS PA recognizes generic values. The masking characters **%** and ***** are supported. The percent (%) is for a single character substitution and the asterisk (*) is for many or none.

For example, to exclude all performance records from all 50 terminals whose terminal IDs start with PR, you could specify all 50 terminal ID values, or instead you could specify the pattern PR* as follows:

```
SELECT(PERFORMANCE(EXCLUDE(TERM(PR*))))
```

Time Stamp fields
The command format is:

```
SELECT(PERFORMANCE|EXCEPTION(
       INCLUDE|EXCLUDE(
       START|STOP|ACTIVE(FROM(date,time),TO(date,time)),...),...))
```

Three time stamp fields can be specified with the SELECT operand:

START   Refers to when the transaction was attached or when processing continued from a conversational transaction.

STOP   Refers to when the transaction was detached or a conversational transaction waited for terminal input.

ACTIVE   Refers to the entire time span between the Start and Stop times. ACTIVE can be used to make sure long-running transactions are included when their Start or Stop times fall out of the selection range.

FROM and **TO** together specify the report interval, and represent either a *date/time range* or a *time slot* (times only). The operands are positional, with FROM preceding TO. Up to 14 report intervals may be specified.

The *date* is either a calendar date in the format *yyyy/mm/dd* or a relative date. Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both FROM and TO dates are specified, they must be in the same format.

The *time* is a time-of-day in the format *hh:mm:ss.th*.

For a date/time range:
- Either FROM or TO may be omitted to indicate that the range is open-ended. If FROM is omitted, it defaults to the first input record. If TO is omitted, it defaults to the end of file.
- If the FROM date is specified with no time, a time of zero is assumed (start of day)
- If the TO date is specified with no time, a time of 23:59:59.99 is assumed (end of day).

For a time slot, both times must be specified with no dates to signify the same time slot every day. The times may span midnight.

For example, the following command includes performance records for transactions running between 8:00 in the morning and 6:00 in the evening:

```
SELECT(PERFORMANCE(INCLUDE(ACTIVE(FROM(08:00),TO(18:00)))))
```

To specify both date and time, the format is:

Specifying values

        Calendar date: `FROM(yyyy/mm/dd,hh:mm:ss.th)`
        Relative date: `FROM(-n,hh:mm:ss.th)`

To specify a date only, the format is:

        Calendar date: `FROM(yyyy/mm/dd,)`
        Relative date: `FROM(-n,)`

Note: The comma following the date is required to designate the missing time value.

To specify a time only, the format is `FROM(,hh:mm:ss.th)` or `FROM(hh:mm:ss.th)`. The comma preceding the time is optional.

For further information on specifying date and time values, see page 339.

Count fields

The command format is:

`SELECT(PERFORMANCE|EXCEPTION(INCLUDE|EXCLUDE(countfld1(values1),...),...))`

The syntax is a string of 1 to 30 decimal ranges, separated by commas. A single number is valid. It is treated as a range that only includes itself. The acceptable values of the numbers in the ranges are the positive integers from 0 to 999999999. This allows selection on all the values that the count fields in the monitoring data can hold.

For example, the following command includes all performance records for transactions that issued 1 to 20 File Control ADD functions:

`SELECT(PERFORMANCE(INCLUDE(FCADD(1-20))))`

Clock (Time-Count) fields

The command format is:

```
SELECT(PERFORMANCE|EXCEPTION(
       INCLUDE|EXCLUDE(clockfld1(TIME|COUNT(values1),...
```

The Clock type fields contain two parts: an elapsed time and a count of the number of times a condition occurred. When specified in the SELECT operand, the part being referenced must be identified by using the **TIME** or **COUNT** operands. Unlike references in the FIELDS operand, there is no default.

The TIME part of clock fields is a count in units of thousandths of a second. Therefore, the rules for specifying the value are the same for both TIME and COUNT parts of clock type fields.

Specify a value, or a list of up to 30 ranges of values, separated by commas. A single number is valid (it is treated as a range that only includes itself). Specify the values in the range as positive integers from 0 to 999999999. This allows selection on all the values that the clock type fields in the monitor data can hold.

Alternatively you can precede the From value with a comparison operator. For example, specify >=1 for a comparison of greater than or equal to 1. Allowed operators are:

`=`   `>`   `>=`   `<`   `<=`

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds.

For example:
- The following command identifies transactions whose elapsed suspend time is between 0 and 3 seconds:

```
SELECT(PERFORMANCE(INCLUDE(SUSPEND(TIME(0-3000)))))
```

- The following command identifies transactions that have been suspended no more than 3000 times:

```
SELECT(PERFORMANCE(INCLUDE(SUSPEND(COUNT(0-3000)))))
```

User fields

CICS PA can access user fields in the CMF performance records. The user fields are defined in the CICS Monitoring Control Table (MCT) as either character type, count type, or clock type.

The command format is:

```
SELECT(PERFORMANCE(EXCLUDE|INCLUDE(
        CHARACTER(
          OWNER(owner),
          SUBSTR(offset,length),
          VALUE(value list)),
        COUNT|CLOCKTIME|CLOCKCOUNT(
          OWNER(owner),
          NUMBER(nnn),
          VALUE(value list)))))
```

All the FIELDS operands documented in "Suboperands for User fields" on page 347 are required with SELECT. These are:
- For character user fields: **OWNER, SUBSTR** and **VALUE**
- For numeric user fields: **OWNER, NUMBER** and **VALUE**

OWNER   The 1-8 character name of the owner of the user field. This is the entry name in the DFHMCT ID= macro specification for the user field, or the CICS-assigned default name of *USER*.

SUBSTR   Specifies that only part of the field is to be checked, from the *offset* position for the given *length*. For example, if the character user field contains ANIMALS, then SUBSTR(4,3) is MAL.

NUMBER   The three-digit integer that identifies a specific count or clock type field.

VALUE   Identifies the value used in the selection criteria. The syntax for the values for user fields is the same as that for character, clock, and count fields.

Example:

If user fields are defined in the MCT, consider a user character field that is set to INQUIRY whenever an INQUIRY function of the TEST transaction is executed. The following command then generates a Performance List report containing only data for the TEST transaction INQUIRY function where:
- Count 1 has a value between 1 and 10
- Clock 1 has an elapsed time greater than 1 second
- Clock 1 was stopped and restarted at least once

Specifying values

```
CICSPA SELECT(PERFORMANCE(INCLUDE(
        TRAN(TEST),
        CHARACTER(OWNER(USEREMP),SUBSTR(1,7),VALUE(INQUIRY)),
        COUNT(OWNER(USEREMP),
            NUMBER(001),
            VALUE(1-10)),
        CLOCKTIME(OWNER(USEREMP),
            NUMBER(001),
            VALUE(1000-999999999)),
        CLOCKCOUNT(OWNER(USEREMP),
            NUMBER(001),
            VALUE(2-999999999))))),
        LIST
```

SELECT(PERFORMANCE

The general format of the SELECT statement for CMF performance class records is:

```
SELECT(PERFORMANCE(EXCLUDE|INCLUDE(
        [ACTIVE|START|STOP(FROM(date,time),TO(date,time)),]
        [char-fieldname(text string),]
        [count-fieldname(value list),]
        [clock-fieldname(TIME|COUNT(value list)),]
        [CHARACTER(
            OWNER(owner),SUBSTR(offset,length),VALUE(value list)),]
        [CLOCKTIME|CLOCKCOUNT|COUNT(
            OWNER(owner),NUMBER(nnn),VALUE(value list))]))))
```

CMF record data fields are defined as specific types. Each field type has a particular format in the SELECT statement:

1. ACTIVE, START, STOP time stamp fields require at least one FROM or TO operand. The format of *(date,time)* may be either:
   (yyyy/mm/dd,hh:mm:ss.th) or *(-n,hh:mm:ss.th)* or
   (yyyy/mm/dd,) or *(-n,)* or
   (,hh:mm:ss.th)

   If both FROM and TO dates are specified, they must be in the same format; both must be calendar dates or both must be relative dates.

2. Values for character fields are specified as *text strings*.

   For each character field, a maximum of 200 characters can be specified. A text string can be entered either alone or in a list:
   (text) or
   (text1,text2,text3)

3. Values for count and time fields are specified as *value lists*.

   For count fields, specify positive integers from 0 to 999999999. For time fields, specify values as thousandths of a second (or seconds if you specify the number with a decimal point).

   A value list can be made up of individual values, ranges, or both. Up to 30 values or ranges can be specified. For example:
   (value)
   (value1-value2)
   (value1,value2,value3)
   (value1-value2,value3-value4,value5-value6)
   (value1,value2-value3,value4)

   Alternatively you can precede the From value in the range with a comparison operator. For example, specify >=1 for a comparison of greater than or equal to 1. Allowed operators are:

   =   >   >=   <   <=

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds.

4. CICS-defined clock type fields require either the TIME or COUNT operand.

5. CHARACTER user fields require the OWNER, SUBSTR, and VALUE operands.

6. CLOCKTIME, CLOCKCOUNT, COUNT user fields require the OWNER, NUMBER, and VALUE operands.

7. Refer to Table 18 on page 740 for the name and format of the CICS-defined fields that can be specified in **SELECT(PERFORMANCE** statements.

SELECT(EXCEPTION

The general format of the SELECT statement for CMF exception class records is:

```
SELECT(EXCEPTION(EXCLUDE|INCLUDE(
          [ACTIVE|START|STOP(FROM(date,time),TO(date,time)),]
          [char-fieldname(text string),]
          [numeric-fieldname(value list)])))
```

CMF record data fields are defined as specific types. Each field type has a particular format in the SELECT statement:

1. ACTIVE, START, STOP time stamp fields require at least one FROM or TO operand. The format of *(date,time)* may be either:
   (yyyy/mm/dd,hh:mm:ss.th) or *(-n,hh:mm:ss.th)* or
   (yyyy/mm/dd,) or *(-n,)* or
   (,hh:mm:ss.th)

   If both FROM and TO dates are specified, they must be in the same format; both must be calendar dates or both must be relative dates.

2. Values for character fields are specified as *text strings*.

   For each character field, a maximum of 200 characters can be specified. A text string can be entered either alone or in a list:
   (text) or
   (text1,text2,text3)

3. Values for count and time fields are specified as *value lists*.

   For count fields, specify positive integers from 0 to 999999999. For time fields, specify values as thousandths of a second (or seconds if you specify the number with a decimal point).

   A value list can be made up of individual values, ranges, or both. Up to 30 values or ranges can be specified. For example:
   (value)
   (value1-value2)
   (value1,value2,value3)
   (value1-value2,value3-value4,value5-value6)
   (value1,value2-value3,value4)

Alternatively you can precede the From value with a comparison operator. For example, specify >=1 for a comparison of greater than or equal to 1. Allowed operators are:

= > >= < <=

Specify time values in seconds (using a decimal point) or milliseconds. For example, we can request RESPONSE in the range 1.12 to 1.25 seconds or the equivalent 1120 to 1250 milliseconds.

SELECT(EXCEPTION fields

The name and format of the fields that can be specified in **SELECT(EXCEPTION** statements are:

CFDTSLOT(text)	Coupling facility data table name that incurred a wait for a locking or non-locking request slot
FSTRINGW(text)	File name that waited for a string
LUNAME(text)	VTAM logical unit name
RESOURCE(text)	Type of resource that caused the wait exception (CFDTLRSW, CFDTPOOL, STORAGE, TEMPSTOR, LSRPOOL, or FILE)
RESPONSE(values)	Response time
STORAGEW(text)	DSA (Dynamic Storage Area) that caused a wait (CDSA, RDSA, SDSA, UDSA, ECDSA, ERDSA, ESDSA, or EUDSA)
TASKNO(values)	Task number
TCLASS(text)	Transaction Class name
TERM(text)	Terminal ID
PRTY(values)	Transaction priority
TRAN(text)	Transaction ID
TSBUFFER(text)	Temporary Storage queue name that waited for a buffer
TSSTRING(text)	Temporary Storage queue name that waited for a string
USERID(text)	User ID
VBUFFERW(text)	File name that incurred a wait for a VSAM buffer
VSTRINGW(text)	File name that incurred a wait for a VSAM string

SELECT examples

This section illustrates various ways of using SELECT.

Examples: Using SELECT as a global operand

The following examples illustrate the use of SELECT as a global operand applying to all reports and extracts that follow it.

1. In this example, the performance class records from transactions that were active between 08:00 and 16:00 will be included in both the Performance List and Performance Summary reports.

   ```
   CICSPA SELECT(PERFORMANCE(INCLUDE(
              ACTIVE(FROM(08:00:00),TO(16:00:00))))),
          LIST,
          SUMMARY
   ```

2. In this example, the Performance List report will only contain the performance class records from transactions with file (FC) wait time between 1 and 1000 seconds, except transactions that are attached from terminal TRM1.

   ```
   CICSPA SELECT(PERFORMANCE(
              EXCLUDE(TERM(TRM1)),
              INCLUDE(FCWAIT(TIME(1000-1000000))))),
          LIST
   ```

3. In this example, the exception class records from transactions that were active between 08:00 and 16:00 will be included in both the Exception List and Exception Summary reports.

   ```
   CICSPA SELECT(EXCEPTION(INCLUDE(
              ACTIVE(FROM(08:00:00),TO(16:00:00))))),
          LISTEXC,
          SUMEXC
   ```

Examples: Using SELECT as a report or extract suboperand

The following examples illustrate the use of SELECT as a report-level operand associated only with the particular report or extract it is coded with. Report-level SELECT statements take precedence over any global SELECT statements.

1. This example shows SELECT used as a suboperand to the LIST operand. The Performance List report will only contain performance class records from transactions TRA1 and TRA2 that were attached from terminal TRM1.

   ```
   CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TRM1),TRANS(TRA1,TRA2)))))
   ```

2. This example shows SELECT used as a suboperand to the LIST operand. The Performance List report will only contain performance class records which have the value ADD in the character user field TESTFUNC.

   ```
   CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(
                  CHARACTER(OWNER(TESTFUNC),SUBSTR(1,3),
                  VALUE(ADD))))))
   ```

3. This example shows SELECT used as a suboperand to LISTEXCeption. The Exception List report will only contain the exception class records from transactions TRA1 and TRA2 that were attached from terminal TRM1.

   ```
   CICSPA LISTEXC(SELECT(EXCEPTION(INCLUDE(
                  TERM(TRM1),TRANS(TRA1,TRA2)))))
   ```

Examples: INCLUDE and EXCLUDE sensitivity

The following report examples show how slight variations to SELECT statements can change report content.

1. This command generates a Performance Summary report for all records except those with terminal TM01.

SELECT examples

```
CICSPA IN(SMFIN001),
       SELECT(PERFORMANCE(EXCLUDE(TERM(TM01)))),
       SUMMARY
```

2. This command generates a Performance Summary report with data from performance class records for terminals TM01 and TM02.

```
CICSPA IN(SMFIN003),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM02)))),
       SUMMARY
```

The two SELECTs above could have been combined as `SELECT(PERFORMANCE(INCLUDE(TERM(TM01,TM02))))`. However, the above command shows a method that can be used if more values need to be listed than CICS PA will allow for one character field.

Be careful, as all selection criteria stay in effect when specifying more than one SELECT statement for a single field.

The following command generates a Performance Summary report for only transaction XXXX on terminal TM01 and for all transactions on terminal TM02.

```
CICSPA IN(SMFIN004),
       SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX),
                                  TERM(TM01)))),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM02)))),
       SUMMARY
```

The following command generates a Performance Summary report for transaction XXXX on all terminals, and all other transactions on terminals TM01 and TM02.

```
CICSPA IN(SMFIN004),
       SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX)))),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM02)))),
       SUMMARY
```

The following command generates a Performance Summary report for transaction XXXX on terminals TM01 and TM02.

```
CICSPA IN(SMFIN004),
       SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX),
                                  TERM(TM01)))),
       SELECT(PERFORMANCE(INCLUDE(TRAN(XXXX),
                                  TERM(TM02)))),
       SUMMARY
```

3. INCLUDE and EXCLUDE parameters can be specified in any order within one SELECT statement. However, with multiple SELECT statements, the order is important.

   - The following two commands generate the same Performance Summary report.

```
CICSPA IN(SMFIN005),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM01)),
                          EXCLUDE(TRAN(XXXX)))),
       SUMMARY
```

```
CICSPA IN(SMFIN005),
       SELECT(PERFORMANCE(EXCLUDE(TRAN(XXXX)),
                          INCLUDE(TERM(TM01)))),
       SUMMARY
```

   - The following command also generates the same Performance Summary report

```
CICSPA IN(SMFIN005),
       SELECT(PERFORMANCE(EXCLUDE(TRAN(XXXX)))),
       SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),
       SUMMARY
```

- However, the following command generates a different Performance Summary report. This one includes all transactions for terminal TM01, including transaction XXXX.

```
CICSPA IN(SMFIN005),
        SELECT(PERFORMANCE(INCLUDE(TERM(TM01)))),
        SELECT(PERFORMANCE(EXCLUDE(TRAN(XXXX)))),
        SUMMARY
```

4. Remember that global SELECT operands cannot be removed. The following commands generate three Performance List reports:

   a. The first report contains data for transaction XXXX on terminal TM01

   b. The second report contains the same data as the first report as well as data for transaction YYYY on terminal TM02

   c. The third report contains the same data as the second report as well as data for transaction ZZZZ on terminal TM03

```
CICSPA IN(SMFIN006),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM01),
                                 TRAN(XXXX)))),
      LIST,
      SELECT(PERFORMANCE(INCLUDE(TERM(TM02),
                                 TRAN(YYYY)))),
      LIST
CICSPA IN(SMFIN006),
      SELECT(PERFORMANCE(INCLUDE(TERM(TM03),
                                 TRAN(ZZZZ)))),
      LIST
```

If three exclusive reports are wanted, specify the SELECTs as operands. The following command generates three Performance List reports:

   a. The first report contains data for transaction XXXX on terminal TM01

   b. The second report contains data for transaction YYYY on terminal TM02

   c. The third report contains data for transaction ZZZZ on terminal TM03

```
CICSPA IN(SMFIN006),
      LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TM01),
                                      TRAN(XXXX))))),
      LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TM02),
                                      TRAN(YYYY))))),
      LIST(SELECT(PERFORMANCE(INCLUDE(TERM(TM03),
                                      TRAN(ZZZZ))))))
```

Example: Specifying a time period

1. The following command generates a Performance List report like that shown in Figure 218 on page 464. It includes transactions that both started and stopped within the specified time period. It does *not* include any long-running transactions that started before the interval or stopped after the interval.

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(
                   START(FROM(11:15:00),TO(11:20:00)),
                   STOP(FROM(11:15:00),TO(11:20:00)))))))
```

2. However, the following command generates a Performance List report that includes transactions that either:
   a. Started before and ended during or after the time period selected, or
   b. Started during and ended during or after the time period selected

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(
                   ACTIVE(FROM(11:15:00),TO(11:20:00)))))))
```

SELECT examples

```
V2R1M0                                   CICS Performance Analyzer
                                            Performance List

LIST0001 Printed at 14:51:46  2/18/2005    Data from 11:15:15  2/14/2005            APPLID IYK2Z1V1     Page      1

Tran SC Term Userid  RSID Program  TaskNo Stop     Response Dispatch User CPU  Suspend DispWait FC Wait  FCAMRq IR Wait
                                          Time       Time    Time     Time     Time    Time    Time            Time
CEMT TO S208 BRENNER      DFHEMTP   66 11:15:15   3.7618   .0028   .0022   3.7590   .0000   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:15:17    .0041   .0040   .0035    .0001   .0000   .0000     0   .0000
CEMT TO S208 BRENNER      DFHEMTP   66 11:15:22   6.5224   .0068   .0032   6.5156   .0000   .0000     0   .0000
CATA U       CBAKER       DFHZATA   69 11:15:29    .0157   .0099   .0048    .0058   .0002   .0000     0   .0000
CQRY S  TC26 CBAKER       DFHQRY    70 11:15:30    .2049   .0022   .0008    .2027   .0000   .0000     0   .0000
CQRY S  TC26 CBAKER       DFHQRY    70 11:15:30    .0177   .0020   .0008    .0156   .0000   .0000     0   .0000
CESN S  TC26 CBAKER       DFHSNP    71 11:15:30    .0028   .0027   .0016    .0001   .0000   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:15:31  13.9899   .0040   .0037  13.9860   .0000   .0000     0   .0000
CEDA TO S23D BRENNER      DFHEDAP   72 11:15:35    .6794   .6522   .1020    .0272   .0102   .0115    48   .0000
CESN TP TC26 CBAKER       DFHSNP    73 11:15:38    .0392   .0388   .0106    .0004   .0003   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:15:50  18.8996   .0037   .0035  18.8959   .0000   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:15:51    .8010   .0038   .0035    .7972   .0000   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:15:51    .7062   .0045   .0035    .7016   .0000   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:15:52    .3508   .0044   .0035    .3464   .0000   .0000     0   .0000
CATR S       CBAKER       DFHZATR   74 11:16:09    .0284   .0280   .0047    .0003   .0003   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:13    .0350   .0101   .0030    .0248   .0001   .0000     0   .0195
RMST TO TC26 GBURGES CJB3           75 11:16:17   3.0835   .0022   .0009   3.0813   .0000   .0000     0   .9967
RMST TO TC26 GBURGES CJB3           75 11:16:19   2.2629   .0017   .0009   2.2612   .0000   .0000     0  1.0999
CEDA TO S23D BRENNER      DFHEDAP   72 11:16:21  46.5125   .0010   .0008  46.5115   .0000   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:22   2.7597   .0020   .0008   2.7577   .0000   .0000     0   .0014
CEDA TO S23D BRENNER      DFHEDAP   72 11:16:24   2.2127   .0008   .0006   2.2118   .0000   .0000     0   .0000
CEDA TO S23D BRENNER      DFHEDAP   72 11:16:27   3.0046   .0013   .0006   3.0033   .0000   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:27   5.6824   .0010   .0008   5.6814   .0000   .0000     0   .0016
CEDA TO S23D BRENNER      DFHEDAP   72 11:16:28   1.1025   .1151   .0119    .9874   .0012   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:16:33  41.2444   .0045   .0036  41.2398   .0000   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:33   5.9165   .0008   .0007   5.9157   .0000   .0000     0   .0013
CEMT TO P056 CBAKER       DFHEMTP   67 11:16:34    .6993   .0044   .0040    .6949   .0000   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:34   1.2040   .0017   .0009   1.2023   .0000   .0000     0   .0015
CEMT TO P056 CBAKER       DFHEMTP   67 11:16:34    .7242   .0037   .0034    .7205   .0000   .0000     0   .0000
CEMT TO P056 CBAKER       DFHEMTP   67 11:16:35    .6737   .0040   .0035    .6696   .0000   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:35   1.0298   .0023   .0010   1.0275   .0000   .0000     0   .7713
CEMT TO P056 CBAKER       DFHEMTP   67 11:16:37   1.8029   .0067   .0036   1.7962   .0000   .0000     0   .0000
RMST TO TC26 GBURGES CJB3           75 11:16:37   1.8807   .0007   .0007   1.8799   .0000   .0000     0   .0013
RMST TO TC26 GBURGES CJB3           75 11:16:39   2.0341   .0011   .0008   2.0330   .0000   .0000     0   .0012
RMST TO TC26 GBURGES CJB3           75 11:16:45   5.3195   .0100   .0008   5.3095   .0000   .0000     0   .0012
RMST TO TC26 GBURGES CJB3           75 11:16:46   1.0277   .0015   .0008   1.0262   .0000   .0000     0   .0016
RMST TO TC26 GBURGES CJB3           75 11:16:46    .3153   .0017   .0009    .3136   .0000   .0000     0   .1009
RMST TO TC26 GBURGES CJB3           75 11:16:47    .6316   .0018   .0009    .6298   .0000   .0000     0   .1073
RMST TO TC26 GBURGES CJB3           75 11:16:47    .3110   .0020   .0010    .3090   .0000   .0000     0   .0016
CALL TO TC26 GBURGES      CALLJT1   76 11:16:53   2.1039   .0453   .0070   2.0586   .0145   .0000     0   .0000
CALL TO TC26 GBURGES      CALLJT1   77 11:16:58   2.0733   .0018   .0015   2.0715   .0004   .0000     0   .0000
CALL TO TC26 GBURGES      CALLJT1   78 11:17:01   2.0612   .0027   .0017   2.0585   .0007   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   79 11:17:04   1.2533   .0141   .0048   1.2392   .0129   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   79 11:17:04    .0002   .0002   .0000    .0000   .0000   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   79 11:17:06   2.0987   .0044   .0011   2.0943   .0038   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   80 11:17:09   1.2650   .0007   .0006   1.2643   .0002   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   80 11:17:09    .0002   .0002   .0000    .0000   .0000   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   80 11:17:11   2.0989   .0021   .0012   2.0968   .0006   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   81 11:17:12   1.0461   .0007   .0005   1.0454   .0003   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   81 11:17:12    .0002   .0002   .0000    .0000   .0000   .0000     0   .0000
TRUE TO TC26 GBURGES      CALLCB1   81 11:17:14   2.0971   .0025   .0010   2.0946   .0004   .0000     0   .0000
CBTR TO TC26 GBURGES      ########   82 11:17:14    .0334   .0328   .0044    .0006   .0006   .0000     0   .0000
```

Figure 218. Sample report using SELECT (List transactions in a specified period)

Example: Including specified transactions only

The following command produces a Performance List report like that shown in
Figure 219 that only includes the performance records for specific transaction
identifiers.

```
CICSPA LIST(SELECT(PERFORMANCE(INCLUDE(
                            TRAN(ABRW,AMNU,AUPD)))))
```

```
V2R1M0                                    CICS Performance Analyzer
                                             Performance List

LIST0001 Printed at 14:15:46  2/18/2005    Data from 11:11:53  2/14/2005                    APPLID IYK2Z1V1      Page     1

Tran SC Term Userid   RSID Program    TaskNo Stop     Response Dispatch User CPU  Suspend DispWait  FC Wait  FCAMRq  IR Wait
                                             Time     Time     Time     Time      Time    Time      Time             Time
AMNU TO S23D BRENNER       DFHSAMNU      50 11:11:53   .1724    .1720    .0091     .0004   .0004     .0000      0     .0000
ABRW TO S23D BRENNER       DFHSABRW      53 11:12:19   .5819    .0783    .0121     .5037   .0127     .0000      0     .4908
AUPD TO S208 BRENNER       DFHSAALL      54 11:12:27   .0488    .0335    .0046     .0154   .0153     .0000      0     .0000
AUPD TO S208 BRENNER       DFHSAALL      57 11:12:34   .0321    .0301    .0050     .0019   .0002     .0000      0     .0016
ABRW TP S23D BRENNER       DFHSABRW      59 11:13:17   .0070    .0034    .0029     .0036   .0000     .0000      0     .0036
ABRW TP S23D BRENNER       DFHSABRW      61 11:13:20   .0080    .0028    .0024     .0052   .0000     .0000      0     .0051
ABRW TP S23D BRENNER       DFHSABRW      62 11:13:21   .0064    .0027    .0023     .0036   .0000     .0000      0     .0036
ABRW TP S23D BRENNER       DFHSABRW      63 11:13:24   .0018    .0017    .0014     .0001   .0000     .0000      0     .0000
AUPD TO S208 BRENNER       DFHSAALL      64 11:13:38   .0665    .0160    .0141     .0505   .0012     .0000      0     .0056
AMNU TO TC26 GBURGES       DFHSAMNU     108 11:19:33   .0023    .0022    .0011     .0001   .0000     .0000      0     .0000
ABRW TO TC26 GBURGES       DFHSABRW     109 11:19:44   .0071    .0040    .0027     .0030   .0000     .0000      0     .0030
ABRW TP TC26 GBURGES       DFHSABRW     110 11:19:49   .0064    .0031    .0021     .0033   .0000     .0000      0     .0032
ABRW TP TC26 GBURGES       DFHSABRW     111 11:19:50   .0065    .0032    .0022     .0033   .0000     .0000      0     .0033
ABRW TP TC26 GBURGES       DFHSABRW     112 11:19:50   .0071    .0035    .0023     .0036   .0000     .0000      0     .0036
ABRW TP TC26 GBURGES       DFHSABRW     113 11:19:50   .0066    .0032    .0022     .0034   .0000     .0000      0     .0034
ABRW TP TC26 GBURGES       DFHSABRW     114 11:19:51   .0022    .0021    .0012     .0001   .0000     .0000      0     .0000
ABRW TP TC26 GBURGES       DFHSABRW     115 11:19:51   .0070    .0034    .0023     .0036   .0000     .0000      0     .0035
ABRW TP TC26 GBURGES       DFHSABRW     116 11:19:51   .0068    .0032    .0022     .0036   .0000     .0000      0     .0035
ABRW TP TC26 GBURGES       DFHSABRW     117 11:19:52   .0094    .0036    .0024     .0058   .0000     .0000      0     .0057
ABRW TP TC26 GBURGES       DFHSABRW     118 11:19:52   .0064    .0031    .0021     .0033   .0000     .0000      0     .0032
ABRW TP TC26 GBURGES       DFHSABRW     119 11:19:53   .0084    .0032    .0024     .0052   .0000     .0000      0     .0051
ABRW TP TC26 GBURGES       DFHSABRW     120 11:19:53   .0070    .0033    .0022     .0036   .0000     .0000      0     .0036
ABRW TP TC26 GBURGES       DFHSABRW     121 11:19:53   .0053    .0028    .0018     .0024   .0000     .0000      0     .0024
ABRW TP TC26 GBURGES       DFHSABRW     122 11:19:56   .0065    .0034    .0021     .0030   .0000     .0000      0     .0030
ABRW TP TC26 GBURGES       DFHSABRW     123 11:19:56   .0069    .0033    .0023     .0036   .0000     .0000      0     .0035
ABRW TP TC26 GBURGES       DFHSABRW     124 11:19:56   .0082    .0035    .0024     .0047   .0000     .0000      0     .0046
ABRW TP TC26 GBURGES       DFHSABRW     125 11:19:57   .0070    .0032    .0023     .0037   .0000     .0000      0     .0037
ABRW TP TC26 GBURGES       DFHSABRW     126 11:19:57   .0080    .0042    .0024     .0037   .0000     .0000      0     .0037
ABRW TP TC26 GBURGES       DFHSABRW     127 11:19:57   .0083    .0034    .0024     .0048   .0000     .0000      0     .0048
ABRW TP TC26 GBURGES       DFHSABRW     128 11:19:57   .0156    .0028    .0024     .0128   .0000     .0000      0     .0127
ABRW TP TC26 GBURGES       DFHSABRW     129 11:19:57   .0069    .0032    .0022     .0037   .0000     .0000      0     .0036
ABRW TP TC26 GBURGES       DFHSABRW     130 11:19:58   .0066    .0031    .0022     .0035   .0000     .0000      0     .0034
ABRW TP TC26 GBURGES       DFHSABRW     131 11:19:58   .0065    .0032    .0021     .0033   .0000     .0000      0     .0033
ABRW TP TC26 GBURGES       DFHSABRW     132 11:19:58   .0074    .0033    .0023     .0041   .0000     .0000      0     .0040
ABRW TP TC26 GBURGES       DFHSABRW     133 11:19:58   .0059    .0032    .0018     .0026   .0000     .0000      0     .0026
AUPD TO TC26 GBURGES       DFHSAALL     141 11:20:25   .0045    .0024    .0015     .0021   .0000     .0000      0     .0020
ABRW TO TC26 GBURGES       DFHSABRW     142 11:20:32   .0063    .0032    .0022     .0031   .0000     .0000      0     .0031
ABRW TP TC26 GBURGES       DFHSABRW     143 11:20:34   .0025    .0024    .0014     .0001   .0000     .0000      0     .0000
ABRW TO TC26 GBURGES       DFHSABRW     146 11:20:38   .0066    .0036    .0023     .0030   .0000     .0000      0     .0029
ABRW TP TC26 GBURGES       DFHSABRW     147 11:20:40   .0075    .0033    .0023     .0042   .0000     .0000      0     .0041
ABRW TP TC26 GBURGES       DFHSABRW     148 11:20:40   .0022    .0022    .0012     .0001   .0000     .0000      0     .0000
ABRW TO TC26 GBURGES       DFHSABRW     150 11:20:45   .0076    .0046    .0021     .0031   .0000     .0000      0     .0030
ABRW TP TC26 GBURGES       DFHSABRW     151 11:20:49   .0075    .0035    .0023     .0040   .0000     .0000      0     .0039
ABRW TP TC26 GBURGES       DFHSABRW     152 11:20:50   .0080    .0042    .0026     .0037   .0000     .0000      0     .0037
ABRW TP TC26 GBURGES       DFHSABRW     153 11:20:50   .0074    .0032    .0022     .0041   .0000     .0000      0     .0041
ABRW TP TC26 GBURGES       DFHSABRW     154 11:20:50   .0071    .0037    .0022     .0034   .0000     .0000      0     .0033
ABRW TP TC26 GBURGES       DFHSABRW     155 11:20:51   .0059    .0022    .0020     .0037   .0000     .0000      0     .0037
ABRW TP TC26 GBURGES       DFHSABRW     156 11:20:51   .0080    .0037    .0024     .0043   .0000     .0000      0     .0042
ABRW TP TC26 GBURGES       DFHSABRW     157 11:20:53   .0079    .0041    .0025     .0037   .0000     .0000      0     .0036
AMNU TO R11  CBAKER        DFHSAMNU     158 11:20:54   .0228    .0227    .0012     .0000   .0000     .0000      0     .0000
ABRW TP TC26 GBURGES       DFHSABRW     160 11:20:54   .0074    .0034    .0022     .0039   .0000     .0000      0     .0039
ABRW TP TC26 GBURGES       DFHSABRW     161 11:20:55   .0060    .0023    .0021     .0037   .0000     .0000      0     .0036
```

Figure 219. Sample report using SELECT (list specified transactions only)

SELECT examples

Example: Satisfying combined criteria ("AND")
The following command produces a Performance List report like that shown in
Figure 220. It shows how to combine fields under the same INCLUDE statement.
The performance data included contains the terminal ID S23D and also has a
userid of BRENNER.

```
CICSPA LIST(SELECT(PERFORMANCE(
                   INCLUDE(TERM(S23D),USERID(BRENNER)))))
```

```
V2R1M0                                       CICS Performance Analyzer
                                                Performance List

LIST0001 Printed at 14:25:33  2/18/2005    Data from 11:11:53  2/14/2005              APPLID IYK2Z1V1      Page      1

Tran SC Term Userid   RSID Program    TaskNo Stop      Response Dispatch User CPU Suspend DispWait  FC Wait  FCAMRq  IR Wait
                                             Time      Time     Time     Time     Time    Time      Time             Time
AMNU TO S23D BRENNER       DFHSAMNU       50 11:11:53    .1724   .1720    .0091    .0004   .0004    .0000       0    .0000
ABRW TO S23D BRENNER       DFHSABRW       53 11:12:19    .5819   .0783    .0121    .5037   .0127    .0000       0    .4908
ABRW TP S23D BRENNER       DFHSABRW       59 11:13:17    .0070   .0034    .0029    .0036   .0000    .0000       0    .0036
ABRW TP S23D BRENNER       DFHSABRW       61 11:13:20    .0080   .0028    .0024    .0052   .0000    .0000       0    .0051
ABRW TP S23D BRENNER       DFHSABRW       62 11:13:21    .0064   .0027    .0023    .0036   .0000    .0000       0    .0036
ABRW TP S23D BRENNER       DFHSABRW       63 11:13:24    .0018   .0017    .0014    .0001   .0000    .0000       0    .0000
CEDA TO S23D BRENNER       DFHEDAP        72 11:15:35    .6794   .6522    .1020    .0272   .0102    .0115      48    .0000
CEDA TO S23D BRENNER       DFHEDAP        72 11:16:21  46.5125   .0010    .0008  46.5115   .0000    .0000       0    .0000
CEDA TO S23D BRENNER       DFHEDAP        72 11:16:24   2.2127   .0008    .0006   2.2118   .0000    .0000       0    .0000
CEDA TO S23D BRENNER       DFHEDAP        72 11:16:27   3.0046   .0013    .0006   3.0033   .0000    .0000       0    .0000
CEDA TO S23D BRENNER       DFHEDAP        72 11:16:28   1.1025   .1151    .0119    .9874   .0012    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       140 11:20:24    .0042   .0041    .0037    .0001   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       140 11:20:32   8.3481   .0037    .0032   8.3444   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       140 11:21:24  51.3442   .0013    .0010  51.3429   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       174 11:21:27    .0041   .0040    .0038    .0001   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       174 11:21:28   1.1930   .0013    .0010   1.1917   .0000    .0000       0    .0000
RMST TO S23D BRENNER  CJB3              178 11:21:31    .0110   .0017    .0014    .0093   .0000    .0000       0    .0093
RMST TO S23D BRENNER  CJB3              178 11:21:39   7.8027   .0017    .0014   7.8009   .0000    .0000       0    .0102
RMST TO S23D BRENNER  CJB3              178 11:21:49  10.0524   .0012    .0008  10.0512   .0000    .0000       0    .9641
RMST TO S23D BRENNER  CJB3              178 11:22:38  48.9210   .0136    .0012  48.9074   .0000    .0000       0    .0024
STAT TO S23D BRENNER       DFH0STAT      195 11:22:41    .0018   .0017    .0015    .0001   .0000    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      195 11:22:50   8.9745   .3774    .3537   8.5972   .0006    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      195 11:22:52   2.0203   .0015    .0012   2.0188   .0000    .0000       0    .0000
CALL TO S23D BRENNER       CALLJT1       196 11:22:57   2.1853   .0022    .0015   2.1831   .0005    .0000       0    .0000
TRUE TO S23D BRENNER       CALLCB1       197 11:23:00   1.0821   .0007    .0006   1.0814   .0003    .0000       0    .0000
TRUE TO S23D BRENNER       CALLCB1       197 11:23:00    .0002   .0002    .0000    .0000   .0000    .0000       0    .0000
TRUE TO S23D BRENNER       CALLCB1       197 11:23:02   2.0959   .0020    .0012   2.0940   .0005    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      198 11:23:03    .0022   .0022    .0015    .0001   .0000    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      198 11:23:10   6.4074   .0014    .0009   6.4060   .0024    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      198 11:23:14   4.6891   .0010    .0008   4.6880   .0000    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      198 11:23:15   1.0024   .0020    .0011   1.0004   .0000    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      198 11:23:29  13.6565   .0259    .0230  13.6306   .0001    .0000       0    .0000
STAT TO S23D BRENNER       DFH0STAT      198 11:24:18  48.7524   .0015    .0012  48.7509   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       218 11:25:37    .0044   .0043    .0040    .0001   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       218 11:25:50  13.4984   .0028    .0025  13.4956   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       218 11:25:52   2.0055   .0042    .0038   2.0013   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       218 11:25:56   3.1811   .0035    .0029   3.1776   .0742    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       218 11:25:57   1.2135   .0034    .0031   1.2101   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       218 11:25:59   1.9512   .0013    .0010   1.9499   .0000    .0000       0    .0000
CBAM TO S23D BRENNER       DFHECBAM      231 11:26:11    .0670   .0502    .0051    .0168   .0167    .0000       0    .0000
CBAM TO S23D BRENNER       DFHECBAM      231 11:26:13   2.5339   .0012    .0008   2.5327   .0000    .0000       0    .0000
CBAM TO S23D BRENNER       DFHECBAM      231 11:26:14   1.0145   .0014    .0010   1.0131   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:27:43    .0041   .0039    .0037    .0001   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:27:50   6.8877   .0027    .0023   6.8849   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:27:51   1.3002   .0037    .0034   1.2965   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:27:58   7.3975   .0038    .0027   7.3937   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:28:15  16.1091   .0076    .0045  16.1016   .0002    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:28:16   1.3915   .0031    .0028   1.3884   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:28:32  15.6272   .0100    .0046  15.6172   .0002    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:28:33    .9771   .0032    .0027    .9739   .0000    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:28:46  13.1519   .0060    .0022  13.1459   .0001    .0000       0    .0000
CEMT TO S23D BRENNER       DFHEMTP       234 11:28:47   1.4551   .0044    .0027   1.4507   .0000    .0000       0    .0000
```

Figure 220. Sample report Using SELECT (List Transactions for Specified TERM and USERID)

Example: Satisfying either criteria ("OR")

The following command produces a Performance List report like that shown in Figure 221: It shows how data can be included in a report based on records that satisfy at least one of a number of conditions. In this example, a record is included in the report if it either shows a response time greater then 30 seconds or shows a terminal ID of P056.

```
CICSPA LIST(SELECT(PERFORMANCE(
                    INCLUDE(RESPONSE(>30.0)))),
             SELECT(PERFORMANCE(
                    INCLUDE(TERM(P056)))))
```

```
V2R1M0                                  CICS Performance Analyzer
                                          Performance List

LIST0001 Printed at 14:00:17  2/18/2005   Data from 11:11:44  2/14/2005              APPLID IYK2Z1V1      Page      1

Tran SC Term Userid  RSID Program   TaskNo Stop     Response Dispatch User CPU  Suspend DispWait  FC Wait  FCAMRq  IR Wait
                                           Time       Time    Time     Time      Time    Time     Time             Time
CQRY S  P056 CBAKER       DFHQRY       47 11:11:44    .0030    .0029   .0007    .0001   .0000    .0000       0     .0000
CQRY S  P056 CBAKER       DFHQRY       47 11:11:44    .3890    .0016   .0007    .3874   .0000    .0000       0     .0000
CESN S  P056 CBAKER       DFHSNP       48 11:11:44    .0028    .0028   .0018    .0001   .0000    .0000       0     .0000
CESN TP P056 CBAKER       DFHSNP       49 11:11:50    .0173    .0167   .0105    .0007   .0006    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      51 11:11:53    .0065    .0065   .0019    .0001   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      51 11:11:57   4.2096    .0063   .0018    4.2034  .0001    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      51 11:12:02   4.3841    .0018   .0010    4.3823  .0001    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:12:07    .0044    .0043   .0029    .0001   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:12:58  50.6951    .0029   .0027    50.6922 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:13:32  34.1747    .0030   .0027    34.1717 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:14:53  81.3172    .0043   .0031    81.3129 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:14:56   2.1921    .0034   .0030    2.1888  .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:14:58   2.2332    .0056   .0033    2.2276  .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      52 11:15:12  14.5575    .1887   .0894    14.3688 .2938    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:15:17    .0041    .0040   .0035    .0001   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:15:31  13.9899    .0040   .0037    13.9860 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:15:50  18.8996    .0037   .0035    18.8959 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:15:51    .8010    .0038   .0035    .7972   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:15:51    .7062    .0045   .0035    .7016   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:15:52    .3508    .0044   .0035    .3464   .0000    .0000       0     .0000
CEDA TO S23D BRENNER      DFHEDAP      72 11:16:21  46.5125    .0010   .0008    46.5115 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:16:33  41.2444    .0045   .0036    41.2398 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:16:34    .6993    .0044   .0040    .6949   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:16:34    .7242    .0037   .0034    .7205   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:16:35    .6737    .0040   .0035    .6696   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:16:37   1.8029    .0067   .0036    1.7962  .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:18:12  95.0977    .0042   .0035    95.0935 .0000    .0000       0     .0000
CEMT TO S208 BRENNER      DFHEMTP      66 11:20:31  308.883    .0021   .0012    308.881 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:20:33  141.000    .0045   .0032    140.996 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:20:43  10.3037    .0037   .0031    10.3001 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:20:44    .5915    .0038   .0031    .5877   .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:21:13  29.5022    .0035   .0032    29.4988 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:21:15   1.1033    .0040   .0034    1.0992  .0000    .0000       0     .0000
CEMT TO S23D BRENNER      DFHEMTP     140 11:21:24  51.3442    .0013   .0010    51.3429 .0000    .0000       0     .0000
RMST TO S23D BRENNER CJB3            178 11:22:38  48.9210    .0136   .0012    48.9074 .0000    .0000       0     .0024
CEMT TO P056 CBAKER       DFHEMTP      67 11:22:57  102.494    .0034   .0027    102.490 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:23:07  10.1192    .0062   .0036    10.1130 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:23:10   2.4865    .0030   .0025    2.4836  .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:24:16  66.3943    .0033   .0031    66.3909 .0000    .0000       0     .0000
STAT TO S23D BRENNER      DFH0STAT    198 11:24:18  48.7524    .0015   .0012    48.7509 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:24:44  28.3001    .0030   .0027    28.2971 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:24:56  11.8088    .0017   .0015    11.8071 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:25:32  36.1909    .0039   .0034    36.1870 .0000    .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP      67 11:25:56  23.7983    .0783   .0617    23.7200 .0004    .0000       0     .0000
CSAC TO P056 CBAKER       DFHACP      233 11:27:34    .0021    .0014   .0013    .0007   .0000    .0000       0     .0000
```

Figure 221. Sample report using SELECT (list transactions for specified RESPONSE or TERM)

SELECT examples

Example: Excluding data

You can use the EXCLUDE operand to omit the data that you are not interested in. The following command produces a Performance List report like that shown in Figure 222. In this example, transactions associated with terminal ID P052 and S028 are not reported.

```
CICSPA LIST(SELECT(PERFORMANCE(EXCLUDE(TERM(P052,S208)))))
```

```
V2R1M0                                  CICS Performance Analyzer
                                           Performance List

LIST0001 Printed at 14:11:29  2/18/2005    Data from 11:10:51  2/14/2005              APPLID IYK2Z1V1        Page      1

Tran SC Term Userid  RSID Program   TaskNo Stop     Response Dispatch User CPU Suspend DispWait FC Wait  FCAMRq  IR Wait
                                           Time       Time     Time     Time    Time    Time    Time             Time
CSSY U       CBAKER       DFHAPATT      16 11:10:51   .0139    .0007    .0006   .0133   .0000   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT      17 11:10:51   .0185    .0010    .0014   .0175   .0001   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT      18 11:10:51   .0674    .0196    .0027   .0479   .0269   .0000       0     .0000
CGRP U       CBAKER       DFHZCGRP      12 11:10:52   .4123    .0420    .0074   .3702   .3223   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT      15 11:10:52   .4204    .0568    .0100   .3636   .1744   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT      13 11:10:52   .6743    .0728    .0134   .6015   .4000   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT      10 11:10:52   .7498    .1910    .0228   .5588   .1997   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT      14 11:10:53  1.3344    .3202    .0378  1.0142   .2626   .0000       1     .0000
CSSY U       CBAKER       DFHAPATT      11 11:10:53  1.4292    .1497    .0313  1.2794   .3461   .0000       0     .0000
CPLT U       CBAKER       DFHSIPLT       7 11:11:07 15.9915    .3383    .0369 15.6532   .0155   .0000       0     .0000
CSSY U       CBAKER       DFHAPATT     III 11:11:07 16.0761   9.3488   2.3435  6.7273  1.1645   .9522    2059     .0000
CWBG S       CBAKER       DFHWBGB       24 11:11:08   .0262    .0248    .0041   .0013   .0012   .0000       0     .0000
CRSQ S       CBAKER       DFHCRQ        25 11:11:08   .0818    .0449    .0040   .0369   .0367   .0000       0     .0000
CXRE S       CBAKER       DFHZXRE       27 11:11:09   .2255    .0243    .0049   .2011   .2009   .0000       0     .0000
CLR2 TO R11  CBAKER       DFHLUP        29 11:11:10   .0263    .0030    .0020   .0232   .0000   .0000       0     .0232
CSFU S       CBAKER       DFHFCU        26 11:11:10  1.6968   1.5899    .1136   .1069   .0294   .0000       0     .0000
CSAC TO SAMA CBAKER       DFHACP        31 11:11:13   .5217    .0028    .0011   .5189   .0002   .0000       0     .0000
CLQ2 U       CBAKER       DFHLUP        28 11:11:13  3.8259    .0818    .0068  3.7441   .0035   .0000       0    3.7344
CEMT TO SAMA CBAKER       DFHEMTP       32 11:11:13   .1877    .1842    .0264   .0035   .0030   .0000       0     .0000
CEMT TO SAMA CBAKER       DFHEMTP       33 11:11:14   .0091    .0068    .0026   .0023   .0001   .0000       0     .0000
CEMT TO SAMA CBAKER       DFHEMTP       34 11:11:15   .0092    .0068    .0025   .0024   .0000   .0000       0     .0000
CSAC TO SAMA CBAKER       DFHACP        35 11:11:16   .5109    .0042    .0012   .5067   .0001   .0000       0     .0000
CSAC TO SAMA CBAKER       DFHACP        36 11:11:17   .5150    .0011    .0011   .5139   .0001   .0000       0     .0000
CSTE U       CBAKER       DFHTACP       37 11:11:17   .1420    .1381    .0126   .0039   .0037   .0000       0     .0000
CATA U       CBAKER       DFHZATA       38 11:11:27   .0537    .0394    .0121   .0143   .0003   .0000       0     .0000
CATA U       CBAKER       DFHZATA       41 11:11:28   .0309    .0048    .0045   .0261   .0003   .0000       0     .0000
CQRY S  S23D CBAKER       DFHQRY        42 11:11:29   .2951    .0013    .0008   .2938   .0000   .0000       0     .0000
CQRY S  S23D CBAKER       DFHQRY        42 11:11:29   .4037    .0012    .0008   .4024   .0000   .0000       0     .0000
CESN S  S23D CBAKER       DFHSNP        43 11:11:29   .0030    .0029    .0020   .0001   .0000   .0000       0     .0000
CESN TP S23D CBAKER       DFHSNP        45 11:11:41   .0203    .0197    .0114   .0006   .0006   .0000       0     .0000
CATA U       CBAKER       DFHZATA       46 11:11:43   .0288    .0133    .0047   .0155   .0001   .0000       0     .0000
CQRY S  P056 CBAKER       DFHQRY        47 11:11:44   .0030    .0029    .0007   .0001   .0000   .0000       0     .0000
CQRY S  P056 CBAKER       DFHQRY        47 11:11:44   .3890    .0016    .0007   .3874   .0000   .0000       0     .0000
CESN S  P056 CBAKER       DFHSNP        48 11:11:44   .0028    .0028    .0018   .0001   .0000   .0000       0     .0000
CESN TP P056 CBAKER       DFHSNP        49 11:11:50   .0173    .0167    .0105   .0007   .0006   .0000       0     .0000
AMNU TO S23D BRENNER      DFHSAMNU      50 11:11:53   .1724    .1720    .0091   .0004   .0004   .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP       51 11:11:53   .0065    .0065    .0019   .0001   .0000   .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP       51 11:11:57  4.2096    .0063    .0018  4.2034   .0001   .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP       51 11:12:02  4.3841    .0018    .0010  4.3823   .0001   .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP       52 11:12:07   .0044    .0043    .0029   .0001   .0000   .0000       0     .0000
ABRW TO S23D BRENNER      DFHSABRW      53 11:12:19   .5819    .0783    .0121   .5037   .0127   .0000       0     .4908
CATA U       CBAKER       DFHZATA       55 11:12:29   .0329    .0048    .0044   .0281   .0001   .0000       0     .0000
CQRY S  P012 CBAKER       DFHQRY        56 11:12:32   .0008    .0007    .0006   .0001   .0000   .0000       0     .0000
CQRY S  P012 CBAKER       DFHQRY        56 11:12:53 21.2950    .0013    .0008 21.2938   .0000   .0000       0     .0000
CESN S  P012 CBAKER       DFHSNP        58 11:12:54   .0034    .0033    .0020   .0001   .0000   .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP       52 11:12:58 50.6951    .0029    .0027 50.6922   .0000   .0000       0     .0000
ABRW TP S23D BRENNER      DFHSABRW      59 11:13:17   .0070    .0034    .0029   .0036   .0000   .0000       0     .0036
CESN TP P012 CBAKER       DFHSNP        60 11:13:19   .0166    .0159    .0103   .0007   .0006   .0000       0     .0000
ABRW TP S23D BRENNER      DFHSABRW      61 11:13:20   .0080    .0028    .0024   .0052   .0000   .0000       0     .0051
ABRW TP S23D BRENNER      DFHSABRW      62 11:13:21   .0064    .0027    .0023   .0036   .0000   .0000       0     .0036
ABRW TP S23D BRENNER      DFHSABRW      63 11:13:24   .0018    .0017    .0014   .0001   .0000   .0000       0     .0000
CEMT TO P056 CBAKER       DFHEMTP       52 11:13:32 34.1747    .0030    .0027 34.1717   .0000   .0000       0     .0000
```

Figure 222. Sample report using SELECT (EXCLUDE)

COPY instruction

You can use **COPY** or **INCLUDE** to instruct CICS PA at run time to obtain precoded commands from a command library and include them in your CICS PA job stream as command input. In this way, often-used sequences of commands can be readily reused. The command library is identified in the **CMDLIB DD** statement in your JCL.

The format of the COPY instruction is:

Name	Command	Operands	Comments
name (or blank)	**COPY** or **INCLUDE**	member[,member1,...,membern]	comments (or blank)

Figure 223 shows an example of the COPY command. In this example, precoded commands necessary to produce a Performance List report and Performance Summary report are obtained from the two command library members and placed in the job stream.

```
//CICSPA JOB (Job Accounting)
//CPA      EXEC PGM=CPAMAIN
//CMDLIB   DD  DSN=CICSPA.CMDLIB,DISP=SHR
 . . .
//SYSIN    DD  *
 COPY LISTTPRF
 COPY SUMMTPRF
/*
//
```

Figure 223. Sample JCL using COPY

Chapter 13. Sample library

The CICS PA Sample Library (SCPASAMP) contains sample JCL members to generate most of the CICS PA reports and extracts:

Member Name Description

CPAAOR	Performance List and Summary reports for an AOR (Application-Owning-Region)
CPADBCTL	Performance List and Summary reports for IMS(DBCTL)
CPADB2	DB2 reports (List, Short Summary, Long Summary)
CPADB2#	Performance List and Summary reports for a region using DB2
CPAFOR	Performance List and Summary reports for an FOR (File-Owning-Region)
CPAHDB	Run SMF Dump followed by Take-up, HDB Load, and selected reports
CPALOGR	System Logger reports (List and Summary)
CPAMQ	WebSphere MQ reports (List and Summary)
CPAPCBTS	BTS (CICS Business Transaction Services) report
CPAPEXP	Exported performance data extract
CPAPGRPH	Performance Graph reports
CPAPLIST	Performance List report with default FIELDS settings
CPAPLSFC	Performance List and Summary reports showing File Control information
CPAPLSPC	Performance List and Summary reports showing Program Control information
CPAPLSTX	Performance List Extended report with default FIELDS settings
CPAPSUM	Performance Summary report with default FIELDS settings and sorted by Transaction ID and User ID
CPAPTOT	Performance Totals report with default FIELDS settings
CPAPTRGP	Transaction Group report
CPAPWAIT	Performance Wait Analysis report
CPAPWLM	Workload Activity reports (List, Summary by Service Class, and Summary by Report Class)
CPAPXSYS	Cross-System Work report and extract; then Performance List report run against the extract
CPATOD	Performance Summary report analyzing transaction activity by Time of Day
CPATOR	Performance List and Summary reports for a TOR (Terminal-Owning-Region)
CPATRU	Transaction Resource Usage reports (List and Summary) for Files and Temporary Storage
CPAWEB	Performance List and Summary reports showing Web activity

CPAXCEPT   Exception List and Summary reports

CICS PA has a powerful command language to request reports. This language allows you to tailor your report requests to address the many aspects of measuring CICS performance. The JCL samples demonstrate reporting for some of the more common CICS facilities.

In addition, the CICS PA dialog provides a comprehensive set of Sample Report Forms for formatting your reports and extracts. See Table 6 on page 294 for the list of sample Report Forms provided by CICS PA.

CPAAOR - AOR reports

This JCL runs the Performance List and Summary reports for an Application-Owning-Region.

```
//CPAAOR   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//* External Work Data Sets
//CPAXW001 DD  DSN=&&CPAXW001,DISP=(NEW,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(10,10))
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//* Commands to request CICS PA reports
//SYSIN    DD  *
    CICSPA IN(SMFIN001),
           APPLID(<applid1>),
       LIST(OUTPUT(LIST0001),
           FIELDS(TRAN,            Transaction identifier
                  STYPE,           Transaction start type
                  TERM,            Terminal ID
                  USERID,          User ID
                  PROGRAM,         Program name
                  TASKNO,          Transaction identification number
                  STOP(TIMET),     Task stop time
                  RESPONSE,        Transaction response time
                  DISPATCH(TIME),  Dispatch time
                  CPU(TIME),       CPU time
                  SUSPEND(TIME),   Suspend time
                  DISPWAIT(TIME),  Redispatch wait time
                  FCWAIT(TIME),    File I/O wait time
                  IRWAIT(TIME))),  MRO link wait time
       SUMMARY(OUTPUT(SUMM0001),
           EXTERNAL(CPAXW001),
           FIELDS(TRAN,                Transaction identifier
                  TERM,                Terminal ID
                  TASKCNT,             Total Task count
                  RESPONSE(AVE),       Transaction response time
                  RESPONSE(MAX),       Transaction response time
                  DISPATCH(TIME(AVE)), Dispatch time
                  CPU(TIME(AVE)),      CPU time
                  SUSPEND(TIME(AVE)),  Suspend time
                  DISPWAIT(TIME(AVE)), Redispatch wait time
                  FCWAIT(TIME(AVE)),   File I/O wait time
                  IRWAIT(TIME(AVE)),   MRO link wait time
                  SC24UHWM(AVE),       UDSA HWM below 16MB
                  SC31UHWM(AVE)))      EUDSA HWM above 16MB
/*
```

Figure 224. Sample JCL CPAAOR - AOR reports

CPADBCTL - DBCTL reports

This JCL runs the CICS PA DBCTL reports.

```
//CPADBCTL JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
  CICSPA IN(SMFIN001),
         APPLID(<applid1>),
         SELECT(PERF(EXCL(
         CHARACTER(OWNER(DBCTL),SUBSTR(1,1),VALUE(' '))))),
     SUMMARY(                          Sort by Tran ID and PSB name
        FIELDS(TRAN,                   Transaction ID
           DBCTL(PSBNAME),             PSB name
           TASKCNT,                    Task count
           RESP(AVE,MAX),              Response time
           CPU(TIME,COUNT),            CPU time
           IMSREQCT,                   IMS (DBCTL) requests
           IMSWAIT(TIME,COUNT),        IMS (DBCTL) wait time
           DBCTL(SCHTELAP(AVE,MAX),    Schedule process elapsed
                 THREDCPU(AVE),        DBCTL Thread CPU time
                 DLICALL(AVE)))),      DLI calls
     LIST(
        FIELDS(TRAN,                   Transaction ID
           DBCTL(PSBNAME),             PSB name
           RESP,                       Response time
           CPU,                        CPU time
           IMSREQCT,                   IMS (DBCTL) requests
           IMSWAIT,                    IMS (DBCTL) wait time
           DBCTL(SCHTELAP,             Schedule process elapsed
                 POOLWAIT,             Pool Space wait time
                 INTCWAIT,             Intent Conflict wait time
                 DBIOELAP,             Database I/O elapsed time
                 PILOCKEL,             PI Lock elapsed time
                 THREDCPU,             DBCTL Thread CPU time
                 DLICALL,              DLI calls
                 DBIOCALL)))           Database I/O calls
/*
```

Figure 225. Sample JCL CPADBCTL - DBCTL reports

CPADB2 - DB2 report

This JCL runs the CICS PA DB2 report.

```
//CPADB2   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//SMFIN002 DD  DISP=SHR,DSN=<SMF.Input.DSN.db2ssid1>
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001,SMFIN002),
               APPLID(<applid1>),
*  DB2 Reports...
           DB2(OUTPUT(DB200001),
               EXTERNAL(CPAXW001),
*              CMFONLY,           Only process CMF Performance records.
*                                 Do not process DB2 accounting (101)
*                                 records.
*              SSID(DB2*,PR*),    DB2 Subsystem IDs.
*                                 If not specified, all DB2 SSIDs used
*                                 by the CICS APPLIDs are reported.
*                                 Masking characters (*%) allowed.
*
               LIST(              Detailed list of all DB2 UOWs
                   CLASS1,          Class1: Thread Time
                   CLASS2,          Class2: In-DB2 Time
                   CLASS3,          Class3: Suspend Time
                   BUFFER,          Buffer Manager Summary
                   LOCKING,         Locking Summary
                   DML1,            SQL DML Query/Update
                   DML2),           SQL DML 'Other'
               LISTZERO,          In the detailed list, report all tasks
*                                 in a Network UOW, even when DB2REQCT=0
               LONGSUMM(          Long Summary of DB2 activity
                   CLASS1,          Class1: Thread Time
                   CLASS2,          Class2: In-DB2 Time
                   CLASS3,          Class3: Suspend Time
                   BUFFER,          Buffer Manager Summary
                   LOCKING,         Locking Summary
                   DML1,            SQL DML Query/Update
                   DML2),           SQL DML 'Other'
               MAXLONGSUM,        Include maximums in the Long Summary.
*                                 This is the default.
*                                 Specify NOMAXLONGSUM to exclude maximums.
               SHORTSUMM)         Short Summary of DB2 activity
/*
```

Figure 226. Sample JCL CPADB2 - DB2 report

CPADB2# - Performance reports for DB2 region

This JCL runs the Performance List and Summary reports for a region using DB2.

```
//CPADB2#  JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//* External Work Data Sets
//CPAXW001 DD  DSN=&&CPAXW001,DISP=(NEW,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(10,10))
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//* Commands to request CICS PA reports
//SYSIN    DD  *
  CICSPA IN(SMFIN001),
         APPLID(<applid1>),
      LIST(OUTPUT(LIST0001),
         FIELDS(TRAN,            Transaction identifier
                PROGRAM,         Program name
                TASKNO,          Transaction identification number
                STOP(TIMET),     Task stop time
                RESPONSE,        Transaction response time
                DISPATCH(TIME),  Dispatch time
                CPU(TIME),       CPU time
                SUSPEND(TIME),   Suspend time
                DISPWAIT(TIME),  Redispatch wait time
                SYNCTIME(TIME),  SYNCPOINT processing time
                DB2CONWT(TIME),  DB2 Connection wait time
                DB2RDYQW(TIME),  DB2 Thread wait time
                DB2REQCT,        DB2 requests
                DB2WAIT(TIME))), DB2 SQL/IFI wait time
      SUMMARY(OUTPUT(SUMM0001),
         EXTERNAL(CPAXW001),
         INTERVAL(01:00),
         FIELDS(TRAN,              Transaction identifier
                TASKCNT,           Total Task count
                RESPONSE(AVE),     Transaction response time
                DISPATCH(TIME(AVE)), Dispatch time
                CPU(TIME(AVE)),    CPU time
                SUSPEND(TIME(AVE)), Suspend time
                DISPWAIT(TIME(AVE)), Redispatch wait time
                SYNCTIME(TIME(AVE)), SYNCPOINT processing time
                DB2CONWT(TIME(AVE)), DB2 Connection wait time
                DB2RDYQW(TIME(AVE)), DB2 Thread wait time
                DB2REQCT(AVE),     DB2 requests
                DB2WAIT(TIME(AVE)))) DB2 SQL/IFI wait time
/*
```

Figure 227. Sample JCL CPADB2# - Performance reports for DB2 region

CPAFOR - FOR reports

This JCL runs the Performance List and Summary reports for a File-Owning-Region.

```
//CPAFOR   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//* External Work Data Sets
//CPAXW001 DD  DSN=&&CPAXW001,DISP=(NEW,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(10,10))
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//* Commands to request CICS PA reports
//SYSIN    DD  *
   CICSPA IN(SMFIN001),
          APPLID(<applid1>),
      LIST(OUTPUT(LIST0001),
          FIELDS(TRAN,             Transaction identifier
                 STOP(TIMES),      Task stop time
                 RESPONSE,         Transaction response time
                 DISPATCH(TIME),   Dispatch time
                 CPU(TIME),        CPU time
                 SUSPEND(TIME),    Suspend time
                 DISPWAIT(TIME),   Redispatch wait time
                 FCWAIT(TIME),     File I/O wait time
                 FCAMCT,           File access-method requests
                 FCADD,            File ADD requests
                 FCBROWSE,         File Browse requests
                 FCDELETE,         File DELETE requests
                 FCGET,            File GET requests
                 FCPUT,            File PUT requests
                 FCTOTAL)),        File Control requests
      SUMMARY(OUTPUT(SUMM0001),
          EXTERNAL(CPAXW001),
          FIELDS(TRAN,             Transaction identifier
                 RESPONSE(AVE),    Transaction response time
                 DISPATCH(TIME(AVE)), Dispatch time
                 CPU(TIME(AVE)),   CPU time
                 SUSPEND(TIME(AVE)), Suspend time
                 DISPWAIT(TIME(AVE)), Redispatch wait time
                 FCWAIT(TIME(AVE)),  File I/O wait time
                 FCAMCT(AVE),      File access-method requests
                 FCADD(AVE),       File ADD requests
                 FCBROWSE(AVE),    File Browse requests
                 FCDELETE(AVE),    File DELETE requests
                 FCGET(AVE),       File GET requests
                 FCPUT(AVE),       File PUT requests
                 FCTOTAL(AVE)))    File Control requests
/*
```

Figure 228. Sample JCL CPAFOR - FOR reports

CPAHDB - HDB reports

This JCL runs the SMF Dump process, followed by Take-up, HDB Load, and selected reports. By combining take-up, HDB load and reporting into a single job step, all CICS PA functions can be performed by a single pass of the SMF data.

For more information on this process, refer to "Take-up from SMF File" on page 124.

```
//CPAHDB   JOB ,CLASS=A,NOTIFY=&SYSUID
//* SMF Dump
//SMFDUMP  EXEC PGM=IFASMFDP
//INDD     DD   DSN=SYS1.MAN1,DISP=SHR
//OUTDD1   DD   DISP=(NEW,CATLG),DSN=CICSPROD.SMFDAILY(+1)
//SYSPRINT DD   SYSOUT=A
//SYSIN    DD   *
  INDD(INDD,OPTIONS(ALL))
  OUTDD(OUTDD1,TYPE(110))
/*
//*
//* CICS PA Take-up, HDB Load, and selected reports
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD   DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//* SMF Input Files
//SMFIN001 DD   DISP=(SHR,KEEP),DSN=CICSPROD.SMFDAILY(+1)
//* HDB Register
//CPAHDBRG DD   DISP=SHR,DSN=<CPA.HDB.Register>
//*
//* CICS PA command requests
//SYSIN    DD   *
  CICSPA IN(SMFIN001),
         APPLID(*),

*   Take-up from SMF into Shared System Definitions
    HDB(TAKEUP,SYSTEMS,FILESYSTEM,OUTPUT(TAKEUP)),

*   HDB Load requests
    HDB(LOAD(WEEKLY),OUTPUT(WEEKLY)),
    HDB(LOAD(DAILY),OUTPUT(DAILY)),
    HDB(LOAD(STATS),OUTPUT(STATS)),

*   CMF Performance report requests
    SUMMARY(BY(TRAN),OUTPUT(SUMM0001)),
    WAITANAL(BY(TRAN),OUTPUT(WAIT0001))
/*
```

Figure 229. Sample JCL CPAHDB - SMF Dump, Take-up, HDB Load, then reports

CPALOGR - System Logger report

This JCL runs the CICS PA System Logger report.

```
//CPALOGR  JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.Logger88>
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001),
*          System Logger Report
           LOGGER(OUTPUT(LOGR0001),
               EXTERNAL(CPAXW001),
*              INTERVAL(30),  SMF global reporting interval (minutes);
*                             omit to use the system default.
*
*              LOGSTREAM('CICP1.*'), Optional Log Stream name filter;
*                             masking characters (*%) allowed.
*
*              STRUCTURE('LOG_*'),   Optional Structure name filter;
*                             masking characters (*%) allowed.
*
               SORT(LOGSTREAM),      Sort by Log Stream name; or
*              SORT(STRUCTURE),      Sort by Structure name
*
*              LIST(ALTER),  Detailed list of Alter records
*                            and System Logger activity
               LIST,         Detailed list of System Logger activity
               SUMMARY)      Summary of System Logger activity
        /*
```

Figure 230. Sample JCL CPALOGR - System Logger report

CPAMQ - WebSphere MQ report

This JCL runs the CICS PA WebSphere MQ List and Summary reports for MQ accounting classes 1 and 3.

```
//CPAMQ    JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
        APPLID(<applid1>),
    MQ(OUTPUT(MQ000001),LIST,CLASS1),    List    Class 1
    MQ(OUTPUT(MQ000002),LIST,CLASS3),    List    Class 3
    MQ(OUTPUT(MQ000003),SUMMARY,CLASS1), Summary Class 1
    MQ(OUTPUT(MQ000004),SUMMARY,CLASS3)  Summary Class 3
/*
```

Figure 231. Sample JCL CPAMQ - WebSphere MQ report

CPAPCBTS - BTS Report

This JCL runs the CICS PA BTS (CICS Business Transaction Services) report.

```
//CPAPCBTS JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
       APPLID(<applid1>),
    BTS(OUTPUT(PBTS0001),
        SELECT(PERF(EXCL(PRCSTYPE(' ')),    <= this ensures only transactions
                    INCL(PRCSTYPE(*)))),    <= using BTS are reported
        EXTERNAL(CPAXW001))
/*
```

Figure 232. Sample JCL CPAPCBTS - BTS Report

CPAPEXP - Export extract

This JCL runs the CICS PA Exported performance data extract.

```
//CPAPEXP  JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//* Extract Data Sets
//PEXPX001 DD DSN=<CICSPA.Export.Extract>,
//            DISP=(NEW,CATLG),
//            UNIT=SYSDA,SPACE=(CYL,(10,10))
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
       CICSPA IN(SMFIN001),
              APPLID(<applid1>),
            EXPORT(DDNAME(PEXPX001),
              DELIMIT(';'),
              LABELS,
              EXTERNAL(CPAXW001))
/*
```

Figure 233. Sample JCL CPAPEXP - Export extract

CPAPGRPH - Graph reports

This JCL runs the CICS PA Graph reports.

```
//CPAPGRPH JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
       CICSPA IN(SMFIN001),
              APPLID(<applid1>),
            GRAPH(TRANRATE,OUTPUT(PRAT0001)),
            GRAPH(RESPONSE,OUTPUT(PRES0001))
/*
```

Figure 234. Sample JCL CPAPGRPH - Graph reports

CPAPLIST - Performance List report

This JCL runs the CICS PA List report with the default FIELDS settings.

```
//CPAPLIST JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001),
               APPLID(<applid1>),
             LIST(OUTPUT(PLST0001))
/*
```

Figure 235. Sample JCL CPAPLIST - Performance List report

CPAPLSFC - File Control

JCL runs the CICS PA List and Summary reports, tailored to present File Control information.

```
//CPAPLSFC JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
    APPLID(<applid1>),
    SELECT(PERFORMANCE(INCLUDE(FCTOTAL(1-999999999)))),
 LIST(OUTPUT(PLST0001),
    FIELDS(TRAN,            Transaction identifier
           PROGRAM,         Program name
           STOP(TIMES),     Task stop time
           RESPONSE,        Transaction response time
           DISPATCH(TIME),  Dispatch time
           CPU(TIME),       CPU time
           SUSPEND(TIME),   Suspend time
           FCWAIT(TIME),    File I/O wait time
           FCAMCT,          File access-method requests
           FCADD,           File ADD requests
           FCBROWSE,        File Browse requests
           FCDELETE,        File DELETE requests
           FCGET,           File GET requests
           FCPUT,           File PUT requests
           FCTOTAL)),       File Control requests
 SUMMARY(OUTPUT(PSUM0001),
    FIELDS(TRAN,                Transaction identifier
           TASKCNT,             Total Task count
           RESPONSE(AVE),       Transaction response time
           DISPATCH(TIME(AVE)), Dispatch time
           CPU(TIME(AVE)),      CPU time
           SUSPEND(TIME(AVE)),  Suspend time
           FCWAIT(TIME(AVE)),   File I/O wait time
           FCAMCT(AVE),         File access-method requests
           FCADD(AVE),          File ADD requests
           FCBROWSE(AVE),       File Browse requests
           FCDELETE(AVE),       File DELETE requests
           FCGET(AVE),          File GET requests
           FCPUT(AVE),          File PUT requests
           FCTOTAL(AVE)))       File Control requests
/*
```

Figure 236. Sample JCL CPAPLSFC - File Control

CPAPLSPC - Program Control

This JCL runs the CICS PA List and Summary reports tailored to present Program Control information.

```
//CPAPLSPC JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
    APPLID(<applid1>),
    SELECT(PERFORMANCE(INCLUDE(PCLOADTM(TIME(1-999999999))))),
 LIST(OUTPUT(PLST0001),
    FIELDS(TRAN,               Transaction identifier
           PROGRAM,            Program name
           PCLINK,             Program LINK requests
           PCLOAD,             Program LOAD requests
           PCLOADTM(TIME),     Program Library wait time
           PCSTGHWM,           Program Storage HWM above and below 16MB
           PCXCTL,             Program XCTL requests
           PC24BHWM,           Program Storage HWM below 16MB
           PC24CHWM,           Program Storage (CDSA) HWM below 16MB
           PC24RHWM,           Program Storage (RDSA) HWM below 16MB
           PC24SHWM,           Program Storage (SDSA) HWM below 16MB
           PC31AHWM,           Program Storage HWM above 16MB
           PC31CHWM,           Program Storage (ECDSA) HWM above 16MB
           PC31RHWM,           Program Storage (ERDSA) HWM above 16MB
           PC31SHWM)),         Program Storage (ESDSA) HWM above 16MB
 SUMMARY(OUTPUT(PSUM0001),
    FIELDS(TRAN,               Transaction identifier
           TASKCNT,            Total Task count
           PCLINK(AVE),        Program LINK requests
           PCLOAD(AVE),        Program LOAD requests
           PCLOADTM(TIME(AVE)), Program Library wait time
           PCSTGHWM(AVE),      Program Storage HWM above and below 16MB
*          PCXCTL(AVE),        Program XCTL requests
           PC24BHWM(AVE),      Program Storage HWM below 16MB
           PC24CHWM(AVE),      Program Storage (CDSA) HWM below 16MB
           PC24RHWM(AVE),      Program Storage (RDSA) HWM below 16MB
           PC24SHWM(AVE),      Program Storage (SDSA) HWM below 16MB
           PC31AHWM(AVE),      Program Storage HWM above 16MB
           PC31CHWM(AVE),      Program Storage (ECDSA) HWM above 16MB
           PC31RHWM(AVE),      Program Storage (ERDSA) HWM above 16MB
           PC31SHWM(AVE)))     Program Storage (ESDSA) HWM above 16MB
/*
```

Figure 237. Sample JCL CPAPLSPC - Program Control

CPAPLSTX - Performance List Extended report

This JCL runs the CICS PA List Extended report with the default FIELDS settings.

```
//CPAPLSTX JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001),
               APPLID(<applid1>),
            LISTX(OUTPUT(PLSX0001),
               EXTERNAL(CPAXW001))
/*
```

Figure 238. Sample JCL CPAPLSTX - Performance List Extended report

CPAPSUM - Performance Summary report

This JCL runs the CICS PA Summary report with the default FIELDS settings, and sorted by Transaction ID and User ID.

```
//CPAPSUM  JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001),
               APPLID(<applid1>),
            SUMMARY(OUTPUT(PSUM0001),
               BY(TRAN,USERID),
               EXTERNAL(CPAXW001))
/*
```

Figure 239. Sample JCL CPAPSUM - Performance Summary report

CPAPTOT - Performance Totals report

This JCL runs the CICS PA Totals report with the default FIELDS settings.

```
//CPAPTOT  JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001),
               APPLID(<applid1>),
             TOTAL(OUTPUT(PTOT0001))
/*
```

Figure 240. Sample JCL CPAPTOT - Performance Totals report

CPAPTRGP - Transaction Group report

This JCL runs the CICS PA Transaction Group report.

```
//CPAPTRGP JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//SMFIN002 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid2>
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
        CICSPA IN(SMFIN001,SMFIN002),
              APPLID(<applid1>,<applid2>),
           TRANGROUP(OUTPUT(PTRG0001),
              EXTERNAL(CPAXW001),
              PRINTMULTIPLE)
/*
```

Figure 241. Sample JCL CPAPTRGP - Transaction Group report

CPAPWAIT - Wait Analysis report

This JCL runs the CICS PA Wait Analysis report.

```
//CPAPWAIT JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input File(s)
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
/*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
        APPLID(<applid1>),
    WAITANAL(OUTPUT(WAIT0001),
        INTERVAL(00:01:00),
        BY(TRAN))
/*
```

Figure 242. Sample JCL CPAPWAIT — Wait Analysis report

CPAPWLM - Workload Activity report

This JCL runs the CICS PA Workload Activity report.

```
//CPAPWLM  JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//SMFIN002 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid2>
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
       CICSPA IN(SMFIN001,SMFIN002),
              APPLID(<applid1>,<applid2>),
*          Workload Activity Report
           WLM(OUTPUT(WKLD0001),
               EXTERNAL(CPAXW001),
               LIST,         Detailed list of Transaction activity
*
               SUMMARY(EXE), Summary of BTE and EXE Y Transaction
*                            activity; or
*              SUMMARY,      Summary of BTE transactions only;
*                            If DETAIL report is not requested,
*                            then CICS PA does not SORT and the
*                            EXTERNAL operand may be omitted.
*
               PEAK(90))     Summary response time peak percentile;
*                            can be 50-100; default=90.
*                            ie. 90% of transactions completed within
*                            the reported response time.
*                            This is a statistical estimate based
*                            on a Normal Distribution.
/*
```

Figure 243. Sample JCL CPAPWLM - Workload Activity report

CPAPXSYS - Cross-System Work report and extract

This JCL runs the CICS PA Cross-System report and extract. The second Job Step (STEP2) then runs the Performance List report against the extract created in the first Job Step.

```
//CPAPXSYS JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//SMFIN002 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid2>
//* Extract Data Sets
//PCRSX001 DD DSN=<CICSPA.CrossSys.Extract>,
//            DISP=(NEW,CATLG),
//            UNIT=SYSDA,SPACE=(CYL,(10,10))
//*
//* External Work Data Sets
//CPAXW001 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//CPAXW002 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(50,10))
//*
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
         CICSPA IN(SMFIN001,SMFIN002),
                APPLID(<applid1>,<applid2>),
*          Cross-System Report
              CROSS(OUTPUT(PCRS0001),
                  EXTERNAL(CPAXW001),
                  PRINTMULTIPLE,NOWRITE),
*          Cross-System Extract
              CROSS(DDNAME(PCRSX001),
                  EXTERNAL(CPAXW002),
                  WRITEALL,NOPRINT)
/*
```

Figure 244. Sample JCL CPAPXSYS - Cross-System Work report and extract (Part 1 of 2)

```
//*
//STEP2    EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//PCRSX001 DD DSN=<CICSPA.CrossSys.Extract>,
//           DISP=(SHR)
//*
//*   Additional Extract Fields:
//*
//* CICSPA A001 TOTRECS      The total number of input records that
//*                          were added to produce this record.
//*
//* CICSPA A002 APPLRECS     The total number of application program
//*                          records that were added to produce this
//*                          record.
//*
//* CICSPA A003 TRANROUT     The total number of terminal-owning
//*                          region records that were added to
//*                          produce this record.
//*
//* CICSPA A004 FUNCSHIP     The total number of function shipping
//*                          request records that were added to
//*                          produce this record.
//*
//* CICSPA A005 DPLRECS      The total number of function shipping
//*                          distributed program link (DPL) request
//*                          records that were added into this
//*                          record. This field is a subset of the
//*                          total number of function shipping
//*                          requests field.
//*
//SYSIN    DD  *
       CICSPA IN(PCRSX001),
         LIST(FIELDS(TRAN,TASKNO,STOP(TIMES),RESP,
                      DISPATCH,CPU,SUSPEND,DISPWAIT,
                      IRWAIT(COUNT),RMISUSP(COUNT),
                      COUNT(OWNER(CICSPA),NUMBER(1)),   TOTRECS
                      COUNT(OWNER(CICSPA),NUMBER(2)),   APPLRECS
                      COUNT(OWNER(CICSPA),NUMBER(3)),   TRANROUT
                      COUNT(OWNER(CICSPA),NUMBER(4)),   FUNCSHIP
                      COUNT(OWNER(CICSPA),NUMBER(5)))) DPLRECS
```

Figure 244. Sample JCL CPAPXSYS - Cross-System Work report and extract (Part 2 of 2)

CPATOD - Summary by Time of Day report

This JCL runs the Performance Summary report, analyzing transaction activity by time of day.

```
//CPATOD   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
        APPLID(<applid1>),
     SUMMARY(OUTPUT(SUMM0001),
         INTERVAL(01:00),             Report Interval is 1 minute
         BY(START,                    Sort by Transaction Start Time
            TRAN),                    and Transaction ID
         FIELDS(START(TIMES),         Transaction Start Time
                TRAN,                 Transaction ID
                TASKCNT,              Total Task count
                RESPONSE(AVE),        Transaction response
                RESPONSE(MAX),        Transaction response time
                DISPATCH(TIME(AVE)),  Dispatch time
                CPU(TIME(AVE)),       CPU time
                SUSPEND(TIME(AVE)),   Suspend time
                DISPWAIT(TIME(AVE)),  Redispatch wait time
                FCWAIT(TIME(AVE)),    File I/O wait time
                FCAMCT(AVE),          File access-method requests
                IRWAIT(TIME(AVE)),    MRO link wait time
                SC24UHWM(AVE),        UDSA HWM below 16MB
                SC31UHWM(AVE)))       EUDSA HWM above 16MB
/*
```

Figure 245. Sample JCL CPATOD - Summary by Time of Day report

CPATOR - TOR reports

This JCL runs the Performance List and Summary reports for a Terminal-Owning-Region).

```
//CPATOR   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//* External Work Data Sets
//CPAXW001 DD  DSN=&&CPAXW001,DISP=(NEW,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(10,10))
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),APPLID(<applid1>),
    LIST(OUTPUT(LIST0001),
        FIELDS(TRAN,          Transaction identifier
               STYPE,         Transaction start type
               TERM,          Terminal ID
               USERID,        User ID
               RSYSID,        Remote System ID
               PROGRAM,       Program name
               STOP(TIMET),   Task stop time
               RESPONSE,      Transaction response time
               DISPATCH(TIME), Dispatch time
               CPU(TIME),     CPU time
               SUSPEND(TIME), Suspend time
               DISPWAIT(TIME), Redispatch wait time
               CHARIN1,       Terminal characters received count
               CHAROUT1,      Terminal characters sent count
               MSGIN1,        Messages received count
               MSGOUT1)),     Messages sent count
    SUMMARY(OUTPUT(SUMM0001),
        EXTERNAL(CPAXW001),
        BY(TRAN,TERM),
        FIELDS(TRAN,
               TERM,
               TASKCNT,
               RESPONSE(AVE,MAX),
               DISPATCH(TIME(AVE)),
               CPU(TIME(AVE)),
               SUSPEND(TIME(AVE)),
               DISPWAIT(TIME(AVE)),
               CHARIN1(AVE),  Terminal characters received count
               CHAROUT1(AVE), Terminal characters sent count
               MSGIN1(AVE),   Messages received count
               MSGOUT1(AVE))) Messages sent count
/*
```

Figure 246. Sample JCL CPATOR - TOR reports

CPATRU - Transaction Resource Usage reports

This JCL runs the Transaction Resource Usage List and Summary reports for File and Temporary Storage.

```
//CPATRU   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
   CICSPA IN(SMFIN001),
          APPLID(<applid1>),
*      List report for File and Temporary Storage
       RESUSAGE(OUTPUT(RESU0001),TRANLIST(FILE,TEMPSTOR)),
*      Transaction Summary for Files
       RESUSAGE(OUTPUT(RESU0002),TRANSUMM(FILE)),
*      Transaction Summary for Temporary Storage
       RESUSAGE(OUTPUT(RESU0003),TRANSUMM(TEMPSTOR)),
*      File Usage Summary
       RESUSAGE(OUTPUT(RESU0004),FILESUMM(BYTRAN,TOTAL)),
*      Temporary Storage Usage Summary
       RESUSAGE(OUTPUT(RESU0005),TSSUMM(BYTRAN,TOTAL))
/*
```

Figure 247. Sample JCL CPATRU - Transaction Resource Usage reports

CPAWEB - Web reports

This JCL runs the Performance List and Summary reports showing Web activity.

```
//CPAWEB   JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=4M,PARM=NOSTAE
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//* External Work Data Sets
//CPAXW001 DD  DSN=&&CPAXW001,DISP=(NEW,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(10,10))
//* Sort Work Data Sets
//CPASWK01 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK02 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK03 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//CPASWK04 DD DISP=(NEW,DELETE),UNIT=SYSDA,SPACE=(CYL,(20,5))
//SYSOUT   DD SYSOUT=*
//* Commands to request CICS PA reports
//SYSIN    DD  *
 CICSPA IN(SMFIN001),
        APPLID(<applid1>),
    LIST(OUTPUT(LIST0001),
        FIELDS(TRAN,           Transaction ID
                STOP(TIMET),    Task stop time
                RESPONSE,       Transaction response time
                DISPATCH(TIME), Dispatch time
                CPU(TIME),      CPU time
                SUSPEND(TIME),  Suspend time
                DISPWAIT(TIME), Redispatch wait time
                WBCHRIN,        Web characters received count
                WBCHROUT,       Web characters sent count
                WBRCV,          Web RECEIVE requests
                WBREPRCT,       Shared TS Repository read requests
                WBREPWCT,       Shared TS Repository write requests
                WBSEND,         Web SEND requests
                WBTOTAL)),      Web Total requests
    SUMMARY(OUTPUT(SUMM0001),
        EXTERNAL(CPAXW001),
        BY(TRAN),
        FIELDS(TRAN,             Transaction identifier
                TASKCNT,         Total Task count
                RESPONSE(AVE),   Transaction response time
                DISPATCH(TIME(AVE)), Dispatch time
                CPU(TIME(AVE)),  CPU time
                SUSPEND(TIME(AVE)), Suspend time
                DISPWAIT(TIME(AVE)), Redispatch wait time
                WBCHRIN(AVE),    Web characters received count
                WBCHROUT(AVE),   Web characters sent count
                WBRCV(AVE),      Web RECEIVE requests
                WBREPRCT(AVE),   Shared TS Repository read requests
                WBREPWCT(AVE),   Shared TS Repository write requests
                WBSEND(AVE),     Web SEND requests
                WBTOTAL(AVE)))   Web Total requests
/*
```

Figure 248. Sample JCL CPAWEB - Web reports

CPAXCEPT - Exception List and Summary reports

This JCL runs the CICS PA Exception List and Summary reports.

```
//CPAXCEPT JOB ,CLASS=A,NOTIFY=&SYSUID
//CICSPA   EXEC PGM=CPAMAIN,REGION=8M,PARM=NOSTAE
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//*
//* SMF Input Files
//SMFIN001 DD  DISP=SHR,DSN=<SMF.Input.DSN.applid1>
//*
//* Commands to request CICS PA reports
//SYSIN    DD  *
       CICSPA IN(SMFIN001),
            APPLID(<applid1>),
          LISTEXC(OUTPUT(XLST0001)),
          SUMEXC(OUTPUT(XSUM0001))
/*
```

Figure 249. Sample JCL CPAXCEPT - Exception List and Summary reports

Part 5. Statistics reporting using the dialog

The chapter in this part shows how to use the interactive Statistics Reporting facilities to produce reports from CICS statistics and server statistics.

For more information on understanding and interpreting the statistics data in the reports, refer to Chapter 5 "Using CICS statistics" in the *CICS Transaction Server for z/OS Performance Guide*.

Chapter 14. Using the Statistics reporting dialog

CICS PA provides comprehensive reporting for CICS statistics and server statistics in SMF 110 records with the following subtypes:

2   CICS Statistics
3   Shared Temporary Storage Server Statistics
4   Coupling Facility Data Table Server Statistics
5   Named Counter Sequence Number Server Statistics

Short-term in-depth analysis or long-term trend analysis for your CICS statistics is available via the CICS PA Historical Database (HDB) and Statistics Reporting facilities.

The CICS PA statistics reporting complements the CICS utilities DFH0STAT and DFHSTUP. CICS PA presents CICS statistics in a similar way to DFH0STAT, the CICS sample statistics program. It does not accumulate and report statistics intervals like DFHSTUP.

All statistics reporting is available from the dialog. The procedure is:

1. Specify an SMF File or HDB. A list of CICS statistics intervals for all systems is displayed.

2. Select the desired interval. A menu of statistics categories and reports is displayed.

3. Select the desired report. The statistics report is displayed. There are two types of reports: label reports or tabular reports:

   • In label-based reports, fields are reported vertically. This is used when there is only one record for the report, typically an overview report.

   • In tabular reports, fields are reported horizontally. This format is displayed when there can be multiple records in the report, typically for CICS resources.

4. Sort on any column in the report, ascending or descending, using point-and-shoot column heading underlines.

5. Hyperlink to related reports using point-and-shoot field values.

6. Press Help (F1) to display descriptions of all fields in the report, together with their CICS field name and DB2 column name.

7. Press Form (F6) to edit the Report Form which controls the fields that are displayed in the report.

For information on understanding and interpreting the statistics data, refer to Chapter 5 "Using CICS statistics" in the *CICS Transaction Server for z/OS Performance Guide.*

CICS Statistics Reporting Menu

CICS PA provides a flexible and powerful interactive viewer for CICS statistics, either directly from SMF files or from historical data collected in an HDB.

```
  File  Options  Help
 --------------------------------------------------------------------------------
 V2R1M0           CICS Performance Analyzer — Primary Option Menu
 Option ===> 7_____

 0  CICS PA Profile      Customize your CICS PA dialog profile
 1  Personal Systems     Specify personal CICS Systems, SMF Files and Groups
 2  Report Sets          Request and submit reports and extracts
 3  Report Forms         Define Report Forms
 4  Object Lists         Define Object Lists
 5  Historical Database  Collect and process historical data
 6  Shared Systems       Specify shared CICS Systems, SMF Files and Groups
 7  Statistics           Report CICS Statistics
 X  Exit                 Terminate CICS PA
```

Figure 250. Primary Option Menu

To invoke the Statistics reporting dialog, select option 7 **Statistics** from the Primary Option Menu. Alternatively, you can enter **STATS** from the command line anywhere in the CICS PA dialog. The CICS Statistics Reporting Menu is displayed.

```
  File  Options  Help
 ----------------------------------------------------------------------
                     CICS Statistics Reporting Menu
  Command ===>  _____

  Select an option then press Enter.

  _  1. SMF Files defined in Personal System Definitions
     2. SMF Files defined in Shared System Definitions
     3. Historical Databases for CICS Statistics
     4. Process SMF File
        _____  +

  Filter Criteria  NO_                    YYYY/MM/DD  HH:MM:SS
    APPLID . . . . _____        Start . . _____  _____
    Image  . . . . ____           Stop  . . _____  _____

    Type . . . . . _  EOD  _  INT  _  USS  _  REQ  _  RRT

  Options 2 and 3:
   HDB Register . . . 'CICSPA.HDB.REGISTER'_____  +

   F1=Help    F3=Exit    F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 251. CICS Statistics Reporting Menu

The statistics reporting interface is the same, regardless of whether the data source is an SMF file or an HDB. Select from the following options to display a list of eligible SMF files or HDBs:

1. **SMF Files defined in Personal System Definitions.** The list of SMF files in your Personal System Definitions.

2. **SMF Files defined in Shared System Definitions.** The list of Daily SMF Files defined in Shared System Definitions.

3. **Historical Databases for CICS Statistics.** The list of Statistics HDBs defined in the HDB Register.

4. **Process SMF File.** Process an ad hoc SMF File. Specify the SMF data set name immediately below.

For options 2 and 3, specify the **HDB Register** data set name that contains the Shared System Definitions and Statistics HDB definitions.

To limit the CICS statistics intervals that CICSPA displays, type **YES** next to **Filter Criteria** and then specify the combination of criteria that you are interested in. You can also activate, deactivate, or change the filter later, when CICSPA displays the list of CICS statistics intervals. For details, see "Set Filter" on page 509.

SMF File list

You can display a list of SMF Files from either your Personal or Shared System Definitions. Similarly, you can display a list of container data sets from Statistics HDBs.

Option 1 from the Statistics Reporting Menu displays the list of SMF Files in your Personal System Definitions.

```
  File  Edit  Options  Help
 -------------------------------------------------------------------------------
                               Personal SMF Files              Row 1 to 7 of 7
 Command ===> _____  Scroll ===> PAGE

 Select a data set to view reports.

    SMF Data Set Name                                 Volume
 S  CICSPA.CICS640.STATS.SERVER.TS.SMF                DATA01
 _  CICSPA.CICS530.DB2.SMF                            DATA02
 _  CICSPA.CICS530.DB2.SMF.TEST0001                   DATA02
 _  CICSPA.MQS520.SMFDATA.MQ.TEST001                  DATA04
 _  CICSPA.CICS620.TRU.SMF                            DATA00
 _  CICSPA.CICS620.TRU.SMF1                           DATA02
 _  CICSPA.CICS530.LOGGER.SMF2                        DATA02
 ***************************** Bottom of data ********************************
```

Figure 252. Personal SMF Files

Option 2 from the Statistics Reporting Menu displays the list of SMF Files in the Shared System Definitions in the specified HDB Register.

Statistics reporting

```
   File  Edit  Options  Help
 -------------------------------------------------------------------------------
                            Shared SMF Files                   Row 1 to 2 of 2
 Command ===> _____  Scroll ===> PAGE

 Select a data set to view reports.
                                                ------ Time Period -------
   SMF Data Set Name                                  YYYY-MM-DD HH.MM.SS
 _ CICPRO.SMF.G1450V00                          Start  2005-03-14 20.30.00
                                                Stop   2005-03-15 00.00.00
 -------------------------------------------------------------------------------
 S CICPRO.SMF.G1451V00                          Start  2005-03-14 20.45.57
                                                Stop   2005-03-15 00.00.00

 -------------------------------------------------------------------------------
 ***************************** Bottom of data ********************************
```

Figure 253. Shared SMF Files (Daily)

Enter line action **S** (or any non-blank character) to select a data set for statistics reporting. A list of all the statistics collection intervals in the requested SMF File will be displayed. See Figure 256 on page 508.

Statistics HDB list

Option 3 from the Statistics Reporting Menu displays the list of Statistics HDBs in the specified HDB Register.

```
   File  Options  Help
 -------------------------------------------------------------------------------
                              Report HDBs                       Row 1 to 6 of 6
 Command ===> _____  Scroll ===> PAGE

 Select to run report.

   Name      Type            Description               Changed        ID
 _ #STAT01   STATS                                  2005/02/25 16:58 SLC1
 _ #STAT02   STATS                                  2005/02/11 13:19 AWS3
 _ #STAT03   STATS                                  2005/02/08 20:10 SQU3
 _ #WEB01    STATS     Web information 01            2005/02/09 08:55 JZH1
 _ #WEB02    STATS     Web information 02            2005/02/09 08:58 CPB2
 S #020902   STATS     Sample Statistics            2005/02/09 18:01 TOM1
```

Figure 254. Statistics HDBs

Enter line action **S** (or any non-blank character) to select a Statistics HDB for reporting. A list of the container data sets in the HDB is displayed.

```
   File   Options   Help
 ------------------------------------------------------------------------------
                      Run STATS HDB Report - #020902           Row 1 to 4 of 4
 Command ===> _____  Scroll ===> PAGE

 Specify run options then press Enter.

 Select data sets by:          ----- Report Interval ------   HDB contains data
 _  1. Report Interval            YYYY/MM/DD  HH:MM:SS.TH   in the range:
    2. Data Set Name            From _____  _____    2004/12/16 07:39:23
                                To   _____  _____    2004/12/16 11:28:17

    Data Set Name                                   ------ Start ------  Volume
 _  CPA.#020902.D05040.T180209.HDB                 2004/12/16 07:39:23  USER02
 _  CPA.#020902.D05040.T180212.HDB                 2004/12/16 09:00:00  USER02
 _  CPA.#020902.D05040.T180215.HDB                 2004/12/16 10:08:20  USER02
 _  CPA.#020902.D05040.T180218.HDB                 2004/12/16 11:10:00  USER01
 ***************************** Bottom of data *******************************
```

Figure 255. Run Statistics HDB report

This panel shows the time period spanned by the data in the HDB and lists the container data sets.

Select one of the methods of reporting:
1. By report interval.
2. By data set name.

Then specify the report interval or enter line action **S** (or any non-blank character) to select an HDB data set for reporting.

When you have completed your selection, press Enter to continue with the report request. A list of all the statistics collection intervals in the selected data set will be displayed. See Figure 256 on page 508.

Statistics intervals

CICS PA scans the specified SMF Files for statistics intervals and presents the list of intervals for further analysis.

```
   File  Edit  Filter  Options  Help
 -------------------------------------------------------------------------------
                            Statistics Intervals              Row 18 from 38
 Command ===> _____  Scroll ===> PAGE

 Select the required CICS Statistics interval.

 /   System    Image  VRM  Type  --- Collection Time ---   Reset    Duration
 _   CCVT22M    FTS1   620  USS   2005/03/14 20:40:51 Mon   07:03:05
 _   CCVT22M    FTS1   620  USS   2005/03/14 20:44:16 Mon   07:03:05
 _   CCVWSRP    FTS1   620  USS   2005/03/14 20:50:02 Mon   08:50:25
 _   CCVWSRP    FTS1   620  USS   2005/03/14 20:52:24 Mon   08:50:25
 _   CCVT22M    FTS1   620  USS   2005/03/14 20:53:14 Mon   07:03:05
 _   CCVT23T    FTS1   630  EOD   2005/03/15 00:00:00 Tue   18:16:09
 _   CCVT31T    FTS1   640  EOD   2005/03/15 00:00:00 Tue   16:13:42
 _   CCVT31C    FTS1   640  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT23C    FTS1   630  EOD   2005/03/15 00:00:00 Tue   16:51:56
 _   CCVT23M    FTS1   630  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT13CX   FTS1   530  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT13C    FTS1   530  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT22M    FTS1   620  EOD   2005/03/15 00:00:00 Tue   07:03:05
 _   CCVWSRP    FTS1   620  EOD   2005/03/15 00:00:00 Tue   08:50:25
 _   CCVT13T    FTS1   530  EOD   2005/03/15 00:00:00 Tue   16:15:32
 _   CCVT22C    FTS1   620  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT22T    FTS1   620  EOD   2005/03/15 00:00:00 Tue   18:16:33
 S   CCVT22CX   FTS1   620  EOD   2005/03/15 00:00:00 Tue   12:24:27
 _   CCVT13M    FTS1   530  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT31M    FTS1   640  EOD   2005/03/15 00:00:00 Tue   00:00:00
 _   CCVT23CX   FTS1   630  EOD   2005/03/15 00:00:00 Tue   00:00:00
 ****************************** Bottom of data ******************************
```

Figure 256. CICS Statistics Intervals

Enter line action **S** to select the required interval to start reporting.

Line Actions: The valid line actions for the list of intervals are:

/	Display the menu of line actions
S	View statistics reports
P	Print statistics reports
D	Delete the collection interval (from the display only)

Primary Commands: The following primary commands are available:

RESET

> This command (or **RES**) removes all unprocessed line actions and reinstates deleted intervals.

> Also available from **Edit** in the action bar.

SORT SYSTEM|COLLECT

> This command sorts the list of CICS Statistics intervals by System or Collection Time. If not specified, the default sort sequence is System.

> Systems are sorted in ascending sequence. Collection Times are sorted in descending sequence (most recent first).

You can also sort on either of these two columns by selecting the point-and-shoot column heading.

FILTER [ON|OFF]

Filters allow you to control the information displayed. When filtering is in effect **Filter Mode - More:** is displayed in the top right corner of the panel.

There are three forms of the command:

- **FILTER** displays the active Filter where you can view or change the filtering criteria. See Figure 257.
- **FILTER OFF** suspends filtering and displays all the intervals.
- **FILTER ON** resumes filtering.

Also available from **Filter** in the action bar.

Set Filter

The following panel is displayed when you select **Filter->Set filter** in the action bar of the Statistics Intervals panel or enter the **FILTER** command.

```
-------------------- Set Filter --------------------------
 Command ===> _____

 Specify or revise filtering criteria then press Enter.

 System . . . _____    (Blank or pattern)
 Image  . . . ____        (Blank or pattern)

 Type . . . . /  EOD   /  INT   /  USS   /  REQ

              YYYY/MM/DD   HH:MM:SS
 Start  . . . _____  _____
 Stop . . . . _____  _____
```

Figure 257. Statistics Intervals: Set Filter

This facility allows you to filter the intervals displayed in the current view.

Specify the filtering criteria, then press Enter to set the filter.

A statistics interval will only be displayed in the filtered view when all the specified filtering options are matched. All others are hidden (they are not deleted).

When filtering is in effect, **Filter Mode - More:** is displayed in the top right corner of the panel. On initial entry to Statistics Intervals, no filtering is in effect, except when reporting from HDB with Report Interval specified.

To reset the filter and redisplay all intervals, select **Filter->Set filter off** in the action bar. The row count will redisplay in the top right corner of the panel. The filtering criteria will remain dormant in the Set Filter panel.

You can use the **FILTER ON** and **FILTER OFF** commands to swap between the filtered view and the full view of the data.

Statistics categories and reports

For a selected interval, CICS Statistics are displayed in a tree structure of categories and reports. The menu is release-specific. There are slight differences between the reports that are available in each CICS release.

CICS PA supports statistics reporting for CICS VRM 620 and above (CICS Transaction Server Versions 2.2, 2.3, 3.1, and 3.2).

Table 13. Statistics categories and reports

Category	Subcategory or Report	ID	Minimum CICS Version (620, unless otherwise stated)
Regions			
	Transaction Manager	010	
	CICS Dispatcher		
	Dispatcher Overview	060	
	Dispatcher TCB Modes	060	
	Dispatcher TCB Pools	060	
	MVS TCB Overview	064	
	MVS TCBs	065	
	CICS Storage		
	Storage Overview	002/014 **1**	
	DSAs	002/014 **1**	
	Domain Subpools	005	
	Task Subpools	006	
	CICS Dumps		
	Transaction Dump Overview	087	
	Transaction Dumps	085	
	System Dump Overview	090	
	System Dumps	088	
	Enqueue Pools	097	
Connectivity			
	VTAM	021	
	Terminal Autoinstall	024	
	Terminals	034	
	ISC/MRO Connections	052	
	LU62 Mode Names	076	
	ISC Security	054	
	TCP/IP Overview	107	
	TCPIPSERVICE Resources	108	
	IPCONN Resources	109	650
	FEPI Connections	017	
	FEPI Pools	016	
	FEPI Targets	018	
Files and Databases			
	Files	067	
	VSAM LSR Pools	039	
	VSAM LSR Pool Buffers	039	
	VSAM LSR Pool Files	040	

Table 13. Statistics categories and reports (continued)

Category	Subcategory or Report	ID	Minimum CICS Version (620, unless otherwise stated)
	DB2 Connections	102	
	DB2 Entries	103	
	IMS DBCTL Subsystems	028	
	WebSphere MQ Connections	074	650
Logging			
	Logstream Overview	092	
	MVS Logstreams	094	
	Journal Names	093	
	Recovery Manager	099	
Queues			
	Temporary Storage Overview	048	
	Transient Data Overview	045	
	Transient Data Queues	042	
Transactions			
	Transactions	011	
	Transaction Classes	012	
	Request Models	111	
Programs			
	Programs	025	
	Program Autoinstall	023	
	Loader Activity	030	
	Loader DSAs	030	
	LIBRARY Resources	031	650
	LIBRARY Data Set Names **2**	031	650
CICS Web Support			
	URIMAP Global	101	640
	URIMAP Resources	104	640
	PIPELINE Resources	105	640
	WEBSERVICE Resources	106	640
	DOCTEMPLATE Resources	112	650
Enterprise Java			
	CorbaServers	114	
	JVM Pool and Class Cache	117	
	JVM Profiles	118	630
	JVM Profile Modes	118	630
	JVM Programs	119	630
	Enterprise Java Beans	115	630
Miscellaneous			
	Monitoring	081	
	Statistics	066	
	Table Manager	063	
	User Domain	061	
CICS Server			
	Temporary Storage		

Statistics reporting

Table 13. Statistics categories and reports (continued)

Category	Subcategory or Report	ID	Minimum CICS Version (620, unless otherwise stated)
	List Structures	121	
	Queue Buffer Pools	122	
	Server Storage	123	
	Named Counters		
	List Structures	124	
	Server Storage	125	
	Coupling Facility Data Tables		
	List Structures	126	
	Table Access	127	
	Requests	128	
	Server Storage	129	

1 Statistics record ID 002 applies only to CICS version 640 and earlier.

2 The Library Data Set Names statistics report appears in the tree structure only when you are selecting the reports you want to collect in an HDB or export to DB2. This report does not appear in the tree structure for viewing or printing reports. To view this report:

1. View the LIBRARY Resources report.

2. Move the cursor to a library name, and then press Enter (the library name is a point-and-shoot field). The report displays the data set names in the concatenation for that library.

Statistics report tree

The reports for one Statistics Interval are presented in a tree structure (folder style) where the reports are grouped by category.

```
   File  Edit  Options  Help
 -------------------------------------------------------------------------------
 REPORT                        Statistics Reports                  Line 1 of 87
 Command ===> _____ Scroll ===> PAGE

 System: IYK3Z4/MV2C      Type: INT  Interval: 2004/12/16 07:42:00 Thursday

 ___          ** Reports **                      Size
    -   ___   Regions                             416
          ___    Transaction Manager                1
       -  ___    CICS Dispatcher                    37
             ___    Dispatcher Overview              1
             ___    Dispatcher TCB Modes            18
             ___    Dispatcher TCB Pools             4
             ___    MVS TCB Overview                 1
             ___    MVS TCBs                        13
       -  ___    CICS Storage                      355
             ___    Storage Overview                 1
             ___    DSAs                             8
             ___    Domain Subpools                342
             ___    Task Subpools                    4
       -  ___    CICS Dumps                          5
             ___    Transaction Dump Overview        1
             ___    Transaction Dumps                3
             ___    System Dump Overview             1
             ___    System Dumps                     0
          ___    Enqueue Pools                      18
    -   ___   Connectivity                         31
          ___    VTAM                               1
          ___    Terminal Autoinstall               1
          ___    Terminals                         25
          ___    ISC/MRO Connections                2
          ___    LU62 Mode Names                    0
          ___    ISC Security                       1
          ___    TCP/IP Overview                    1
          ___    TCP/IP Services                    0
          ___    FEPI Connections                   0
          ___    FEPI Pools                         0
          ___    FEPI Targets                       0
 ............___    IP Connections                  0
    -   ___   Files and Databases                  23
          ___    Files                             23
          ___    VSAM LSR Pools                     0
```

Figure 258. Statistics report menu tree

Size (on the right) indicates the number of entries in the report.

Enter line action **S** to select a report to display it, or print using the **P** line action.

Line Actions: The valid line actions for the Statistics Reports menu tree are:

/   Display the selection list of line actions
S   Depends on the position in the tree:
       ** Reports **   Expand all categories, or collapse all categories if already expanded
       Category   Expand/Collapse the category

           Report   Display the report. You can then edit the Form to dynamically change the format of the report.

I   Display information about the report

P   Print the report, or all reports in the category. You will be prompted for print options.

D   Delete the category or report. The **RESET** command reinstates them.

Primary Commands: The following primary command is available:

RESET

This command (or **RES**) clears outstanding line actions. It also expands all categories and reinstates deleted reports.

Also available from **Edit** in the action bar.

Expand and collapse the report tree

The reports for one Statistics Interval are presented in a tree structure (folder style) where the reports are grouped by category. This is similar to the way in which some PC tools display folders and their contents. The categories can be expanded (to show) or collapsed (to hide) the reports contained within them.

If your terminal emulation software permits, it is recommended that you configure your Mouse Options to activate the Lightpen function. Then you can flip the display status of report categories by (left button) clicking the **+** (to expand) and **-** (to collapse) characters with your mouse. Use of your mouse as a lightpen may vary depending on your terminal emulation software.

Use your mouse as a lightpen on the – symbol or enter line action **S** to collapse one or all categories.

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------------
 REPORT                        Statistics Reports                   Line 1 of 11
 Command ===> _____  Scroll ===> PAGE

 System: IYK3Z4/MV2C      Type: INT  Interval: 2004/12/16 07:42:00 Thursday

 ___         ** Reports **                          Size
     +   ___   Regions                               416
     +   ___   Connectivity                           31
     +   ___   Files and Databases                    23
     +   ___   Logging                                 6
     +   ___   Queues                                 64
     +   ___   Transactions                          203
     +   ___   Programs                            1,504
     +   ___   CICS Web Support                        1
     +   ___   Enterprise Java                         5
     +   ___   Miscellaneous                          13
     +   ___   CICS Server                             0
             ** End of Reports **
```

Figure 259. Statistics report menu tree: all categories collapsed

Then expand the category of interest. You can use your mouse on the + symbol, or enter line action **S.**

```
 File  Edit  Options  Help
 -------------------------------------------------------------------------------
 REPORT                        Statistics Reports                   Line 1 of 11
 Command ===> _____ Scroll ===> PAGE

 System: IYK3Z4/MV2C       Type: INT  Interval: 2004/12/16 07:42:00 Thursday

 ___            ** Reports **                          Size
      +   ___   Regions                                 416
            ___    Transaction Manager                    1
         +  ___    CICS Dispatcher                       37
         -  ___    CICS Storage                         355
                ___    Storage Overview                   1
                S__    DSAs                                8
                ___    Domain Subpools                   342
                ___    Task Subpools                       4
         +  ___    CICS Dumps                             5
            ___    Enqueue Pools                          18
      +   ___   Connectivity                             31
      +   ___   Files and Databases                      23
      +   ___   Logging                                   6
      +   ___   Queues                                   64
      +   ___   Transactions                            203
      +   ___   Programs                               1,504
      +   ___   CICS Web Support                          1
      +   ___   Enterprise Java                           5
      +   ___   Miscellaneous                            13
      +   ___   CICS Server                               0
            ** End of Reports **
```

Figure 260. Statistics report menu tree: partially expanded

Enter line action **S** to select a report to display it, or print using the **P** line action. For more information on printed reports, see "Printing Statistics reports" on page 523.

Display report information

Enter line action **I** to display report information.

Three levels of information about the report are provided:

1. **Interval Identification.** Identifies the Statistics interval from control information contained in the SMF statistics record.

2. **Report Identification.** Identifies the category and report name from the Statistics report tree.

3. **CICS Identification.** Identifies the CICS Domain that generated the data. Additional information ties the report back to the CICS macro that maps the Statistics data.

```
                    Report Information
Command ===> _____

Interval Identification:
 System . . : IYK3Z4A1  Image . . : MV2C
 VRM  . . . : 640
 Type . . . : EOD
 Reset  . . :               07:41:14
 Duration . :
 Interval . : 2004/12/16 07:44:24 Thursday

Report Identification:
 Category . : Connectivity
 Report . . : ISC/MRO Connections

CICS Identification:
 Domain . . : AP        Macro . . : DFHA14DS
 Stats ID . : 052       DSECT . . : DFHA14DS
```

Figure 261. Statistics report information

Display label reports for global statistics

In label-based reports, fields are reported vertically. This is used when there is only one record for the report, typically an overview report.

```
REPORT     Storage Overview                                     Line 00000001
Command ===>                                                    Scroll ===> PAGE

System: IYK3Z4/MV2C        Type: INT  Interval: 2004/12/16 07:42:00 Thursday

Page Pools  . . . . . . . . . . :               8
Storage Protection  . . . . . . :              NO
Reentrant Programs Protected  . :             YES
Transaction Isolation . . . . . :              NO
Current Unique Subspace Users . :               0
Total Unique Subspace Users . . :               0
Peak Unique Subspace Users  . . :               0
Current Common Subspace Users . :               0
Total Common Subspace Users . . :               0
Peak Common Subspace Users  . . :               0
Current DSA Limit . . . . . . . :           5120K
Current EDSA Limit  . . . . . . :          40960K
Current DSA Total . . . . . . . :           1280K
Current EDSA Total  . . . . . . :          23552K
Peak DSA Total  . . . . . . . . :           1280K
Peak EDSA Total . . . . . . . . :          23552K
MVS Storage Wait Time . . . . . :  00.00.00.000000
MVS Storage Request Waits . . . :               0
```

Figure 262. Statistics report: Storage Overview (label format)

Display tabular reports for resource statistics

In tabular reports, fields are reported horizontally. This format is displayed when there can be multiple records in the report, typically for CICS resources.

```
REPORT    Domain Subpools                        Line 00000001 Col 002 008   >
Command ===> _____ Scroll ===> PAGE

System: IYK3Z4/MV2C       Type: INT  Interval: 2004/12/16 07:42:00 Thursday


Subpool   DSA       Element      Fixed Element       Element
Name      Name      Type        Length Chaining     Boundary  Location  Acces
--------  --------  --------  ---------- --------   ---------- --------  -----
>LGJMC    ECDSA     FIXED             60 NO                  4 ABOVE     CICS
AITM_TAB  ECDSA     FIXED            584 NO                  8 ABOVE     CICS
AP_TCA24  CDSA      FIXED           1536 NO                128 BELOW     CICS
AP_TCA31  ECDSA     FIXED           1536 NO                128 ABOVE     CICS
AP_TXDEX  ECDSA     FIXED             72 NO                  8 ABOVE     CICS
APAID31   ECDSA     FIXED            152 NO                  8 ABOVE     CICS
APBMS     ECDSA     VARIABLE           0 YES                16 ABOVE     CICS
APCOMM31  ECDSA     VARIABLE           0 NO                 16 ABOVE     CICS
APDWE     ECDSA     FIXED             32 NO                  8 ABOVE     CICS
APECA     SDSA      FIXED              8 NO                  8 BELOW     CICS
APICE31   ECDSA     FIXED            208 NO                  8 ABOVE     CICS
APURD     ECDSA     VARIABLE           0 NO                 16 ABOVE     CICS
ASYNCBUF  ECDSA     FIXED           4096 NO                  4 ABOVE     CICS
BAGENRAL  ECDSA     VARIABLE           0 NO                 16 ABOVE     CICS
BAOFBUSG  ECDSA     FIXED             24 NO                  8 ABOVE     CICS
BAOFT_ST  ECDSA     FIXED            136 NO                  8 ABOVE     CICS
BR_BFBE   ECDSA     FIXED             80 NO                 16 ABOVE     CICS
BR_BFNB   ECDSA     FIXED             96 NO                 16 ABOVE     CICS
```

Figure 263. Statistics report: Domain Subpools (tabular format)

Scroll **Right** (F11) to display the remaining field columns in the report, or scroll **Left** (F10) to display the previous.

Sorting

In Statistics tabular reports, you can sort on any column. To sort on a column, tab to the point-and-shoot underline of the column heading and press Enter. Repeated point-and-shoot sorting flips the sequencing between ascending and descending.

To reset the report to the original sort order, select **Edit->Reset** in the action bar or enter the **RESET** or **RES** command.

Hyperlink

You can hyperlink from one report to another. Selected fields in the report will hyperlink to a related report. The hyperlink candidate fields are point-and-shoot fields. Position your cursor on the field value of interest and press Enter to link to that value in the related report.

Here is an example of how you can use hyperlink to trace data values.

Step 1.   Select DSAs to display the list of DSA types.

```
REPORT                    Statistics Reports                    Line 1 of 87
Command ===> _____ Scroll ===> CSR

System: IYK3ZAC1/MV2C     Type: EOD  Interval: 2004/12/16 07:39:30 Thursday

___           ** Reports **                              Size
    -   ___   Regions                                    418
        ___     Transaction Manager                       1
    -   ___     CICS Dispatcher                           35
        ___       Dispatcher Overview                      1
        ___       Dispatcher TCB Modes                    18
        ___       Dispatcher TCB Pools                     4
        ___       MVS TCB Overview                         1
        ___       MVS TCBs                                11
    -   ___     CICS Storage                             359
        ___       Storage Overview                         1
        S         DSAs                                     8
        ___       Domain Subpools                        346
        ___       Task Subpools                            4
```

Figure 264. Select DSAs report

Step 2. The list of DSAs is displayed.

```
REPORT    DSAs                                Line 00000001 Col 002 008   >
Command ===> _____ Scroll ===> CSR_

System: IYK3ZAC1/MV2C     Type: EOD  Interval: 2004/12/16 07:39:30 Thursday


                                     Current      Peak     Current
DSA      DSA                   DSA       DSA       DSA     Cushion
Name     Location Access     Index      Size      Size        Size
-------- -------- -------- -------- ---------- ---------- ----------
CDSA     BELOW    CICS            1      512K       512K        64K
UDSA     BELOW    CICS            2        0K         0K         0K
SDSA     BELOW    CICS            3      256K       256K        64K
RDSA     BELOW    CICS            4      512K       512K        64K
ECDSA    ABOVE    CICS            5     6144K      6144K       128K
EUDSA    ABOVE    CICS            6    11264K     11264K         0K
ESDSA    ABOVE    CICS            7     1024K      1024K       128K
ERDSA    ABOVE    CICS            8    20480K     20480K       256K
```

Figure 265. Hyperlink on DSA name ESDSA

Step 3. Use hyperlink to view the list of SUBPOOLs that belong to an individual DSA. Position the cursor at the required DSA name and then press Enter. The list of Domain Subpools that belong to the selected DSA is displayed, in this case ESDSA.

```
 _____
/                                                                            \
| REPORT    Domain Subpools                       Line 00000001 Col 002 008  > |
| Command ===> _____ Scroll ===> CSR    |
|                                                                             |
| System: IYK3ZAC1/MV2C     Type: EOD  Interval: 2004/12/16 07:39:30 Thursday |
|                                                                             |
|                                                                             |
| Subpool  DSA       Element       Fixed Element     Element                  |
| Name     Name      Type         Length Chaining   Boundary  Location        |
| --------  --------  --------  ---------- --------  ---------- --------       |
| IE_BUFF   ESDSA     VARIABLE           0 NO               16  ABOVE          |
| IIBUFFER  ESDSA     VARIABLE           0 NO               16  ABOVE          |
| LDEPGM    ESDSA     VARIABLE           0 NO               16  ABOVE          |
| LDERES    ESDSA     VARIABLE           0 NO               16  ABOVE          |
| SJSJPTE   ESDSA     FIXED            408 NO                8  ABOVE          |
| SJSJSTK   ESDSA     FIXED              8 NO                8  ABOVE          |
| SJSJTCB   ESDSA     FIXED           1336 NO                8  ABOVE          |
| SJSJVMS   ESDSA     FIXED           2200 NO                8  ABOVE          |
| SJUSERKY  ESDSA     VARIABLE           0 NO               16  ABOVE          |
| SMSHRU31  ESDSA     VARIABLE           0 YES              16  ABOVE          |
| WEBINB    ESDSA     FIXED          32768 YES               8  ABOVE          |
\                                                                            /
 ----------------------------------------------------------------------------
```

Figure 266. Domain Subpools report for DSA name ESDSA

Statistics Report Forms

The Statistics Report Forms allow you to tailor the format of each Statistics report. Each line in the Form represents a row heading in the label report or a column heading in the tabular report.

```
 _____
/                                                                            \
| FORM      Transaction Manager                            Line 1 of 12       |
| Command ===> _____ Scroll ===> PAGE  |
|                                                                             |
| /  Heading                                    Usage                         |
| _   Transactions                              _____                         |
| _   Current MAXTASK                           _____                         |
| _   Current Active User Transactions          _____                         |
| _   Current Queued User Transactions          _____                         |
| _   Times at MAXTASK                          _____                         |
| _   Peak Active User Transactions             _____                         |
| _   Peak Queued User Transactions             _____                         |
| _   Total Active User Transactions            _____                         |
| _   Total Delayed User Transactions           _____                         |
| _   Total Queuing Time for MAXTASK            OMIT_                         |
| _   Current Queuing Time for MAXTASK          OMIT_                         |
| _   Total Transactions to Last Reset          _____                         |
| ****************************** End of Form ****************************** |
\                                                                            /
 ----------------------------------------------------------------------------
```

Figure 267. Statistics Report Form (label format): Transaction Manager

```
FORM      TCP/IP Services                                    Line 1 of 23
Command ===> _____  Scroll ===> PAGE


                                                 ------ Width ------
/  Heading                                   Usage Column   Max Report
_  TCP/IP Service                            FIX__          8       8
A  Transactions Attached                     _____          12      22
_  Current Connections                       _____          11      35
_  Peak Connections                          _____          11      48
_  Time Opened GMT                           _____          19      69
_  Time Opened Local                         _____          19      90
_  Time Closed GMT                           _____          19     111
_  Time Closed Local                         _____          19     132
M  Port Number                               _____          10     144
_  SSL Support Level                         _____          8      154
_  Port Backlog                              _____          10     166
_  Send Requests                             _____          10     178
_  Bytes Sent                                _____          10     190
_  Receive Requests                          _____          10     202
_  Bytes Received                            _____          10     214
_  IP Address                                _____   ___15   15     231
_  WLM DNS Group                             _____   ___10   18     251
_  Protocol                                  _____          8      261
_  Authenticate                             _____    ___12   12     275
_  Privacy                                   _____          8      285
_  Attachsec                                 _____          9      296
_  TSQ Prefix                                _____          8      306
_  MAXDATA Length                            _____          10     318
******************************** End of Form ********************************
```

Figure 268. Statistics Report Form (tabular format): TCP/IP Services

The order of the fields in the Form dictates the order of the fields in the report. You can move the fields to the desired position. You can **OMIT** fields that you do not want reported. You can also **FIX** fields at the start of the report so that they remain in view when you scroll right. For long character fields in tabular reports, you can truncate the field in the report by specifying a **column width.**

When you save the Form (F3), the report changes to reflect the current Form.

Statistics field help

Field descriptions are available for all statistics reports.

```
                    Field Descriptions for Statistics Report

Category  : Files and Databases               Macro . . : DFHA17DS
Report  . : Files                             DSECT . . : DFHA17DS
_____
                                                      More:      +
File Name

CICS field name: A17FNAM              DB2 column name: FILE_NAME

The name you specified in the DEFINE FILE command of resource definition
online.

Reset characteristic: Not reset
_____

File Location

CICS field name: A17FLOC              DB2 column name: FILE_LOCATION

The file is defined as being local to this CICS system, or resides on a remote
CICS system. The field is one byte long, and is set to "R" if remote.

Reset characteristic: Not reset
_____

Data Table Fields

CICS field name: A17DT                DB2 column name: DATA_TABLE_FIELDS

A one-byte field that contains the value R, S, T, L, K, or X, if data table
statistics fields are present in the record. The values indicate:
R    This is a remote file for which table read and source read statistics are
     present.
S    The resource was not opened as a table but was able to access data from a
     table associated with the same data set.
T    The resource is a shared data table.
L    The resource is a coupling facility data table (locking model).
K    The resource is a coupling facility data table (contention model).
X    The resource has been opened with a source data set which has an
     associated CICS maintained data table and the resource has been updated
     which has caused the data table to also be updated.

Reset characteristic: Not reset
```

Figure 269. Statistics field help: Files (Statistics ID 067A)

The field help provides a description of each statistic, together with the CICS field name and the CICS PA DB2 column name.

Printing Statistics reports

Statistics reports can be printed, either to a DASD data set or SYSOUT file. Printed reports honor your current Form.

To print a statistics report, enter line action **P** against the report in the menu tree.

```
                          Print Statistics Report
   Command ===> _____

   Specify Statistics Report print options.

   Report Destination:
   1  1. Data Set   2. SYSOUT

   Output Data Set:
    Data Set Name . . STATS.REPORT_____
    Disposition . . . 1  1. OLD   2. MOD     (If cataloged)

   Enter "/" to select option
   /  Browse output data set

   Report Output:
    SYSOUT Class  . . A     Print Lines per Page . . 60_  (0-255)

    F1=Help     F3=Exit     F6=Resize  F12=Cancel
```

Figure 270. Print Statistics report

The data set can be PDS (with member) or PS (including GDG).

DCB information: RECFM=VBM LRECL=1024 BLKSIZE=6160

The following report is an example of a printed Statistics report.

```
V2R1M0                                    CICS Performance Analyzer
                                      CICS Statistics - Domain Subpools

System: IYK3Z7FA/MV2C  VRM: 630  Type: EOD  Interval: 2004/03/02 02:33:10 Tuesday    Reset: 01:18:49  Duration:
                                                                                      Initial
Subpool   DSA     Element        Fixed Element        Element                 DSA     Free     GETMAIN   FREEMAIN
Name      Name    Type           Length Chaining      Boundary  Location Access Index   Area     Requests  Requests
_____  _____   _____       _____ _____      _____  _____  _____ _____   _____    _____   _____
>LGJMC    ECDSA   FIXED              60 NO                    4  ABOVE    CICS   ECDSA   4K             3         0
AITM_TAB  ECDSA   FIXED             584 NO                    8  ABOVE    CICS   ECDSA   4K            20         0
AP_TCA24  CDSA    FIXED            1536 NO                  128  BELOW    CICS   CDSA    16K          230       227
AP_TCA31  ECDSA   FIXED            1536 NO                  128  ABOVE    CICS   ECDSA   96K         3983      3980
AP_TXDEX  ECDSA   FIXED              72 NO                    8  ABOVE    CICS   ECDSA   4K           133         5
APAID31   ECDSA   FIXED             152 NO                    8  ABOVE    CICS   ECDSA   4K             2         2
APBMS     ECDSA   VARIABLE            0 YES                  16  ABOVE    CICS   ECDSA   0K             0         0
APCOMM31  ECDSA   VARIABLE            0 NO                   16  ABOVE    CICS   ECDSA   0K          3727      3727
APDWE     ECDSA   FIXED              32 NO                    8  ABOVE    CICS   ECDSA   4K            50        50
APECA     SDSA    FIXED               8 NO                    8  BELOW    CICS   SDSA    0K             0         0
APICE31   ECDSA   FIXED             200 NO                    8  ABOVE    CICS   ECDSA   4K            50        47
APURD     ECDSA   VARIABLE            0 NO                   16  ABOVE    CICS   ECDSA   0K             0         0
ASYNCBUF  ECDSA   FIXED            4096 NO                    4  ABOVE    CICS   ECDSA   0K             0         0
BAGENRAL  ECDSA   VARIABLE            0 NO                   16  ABOVE    CICS   ECDSA   0K             7         0
BAOFBUSG  ECDSA   FIXED              24 NO                    8  ABOVE    CICS   ECDSA   0K             0         0
BAOFT_ST  ECDSA   FIXED             136 NO                    8  ABOVE    CICS   ECDSA   0K             0         0
BR_BFBE   ECDSA   FIXED              80 NO                   16  ABOVE    CICS   ECDSA   0K             0         0
```

Figure 271. Statistics report print

Statistics reporting

Part 6. Using the Historical Database (HDB)

The chapters in this part tell you how to use the CICS PA Historical Database (HDB) facility for performance trend analysis.

Chapter 15. Guided Tour: Performance HDB

CICS PA Historical Database is a repository of statistics and performance related data for your CICS systems.

CICS PA Historical Database builds a history of CICS statistics class data and transaction activity from your CMF performance class data that can be customized to meet your various reporting requirements. Your Historical Database environment is controlled from the CICS PA ISPF dialog. It provides a fully managed environment from where you can control all aspects of CICS statistics and performance data, including collection and reporting.

Implementing a statistics and performance data warehouse requires a considerable investment. Careful planning is required to ensure that the data you collect today will be useful in the long term to measure CICS performance trends and workloads to help you plan for the future. Therefore it is important that you are familiar with the features and capabilities of the CICS PA Historical Database before embarking on implementation.

This chapter introduces the CICS PA Historical Database (HDB) facility and describes the concepts. It then takes you on a Guided Tour to show you how to use the CICS PA dialog to define and maintain your Performance HDBs, produce reports and export the HDB data to DB2 tables.

What is an HDB?

An HDB (Historical Database) is a definition that allows you to collect, report and manage CICS statistics and transaction performance data. In the CICS PA Historical Database environment, you can create as many HDBs as required.

An HDB has the following components:
- Options that allow you to tailor the HDB to meet your requirements.
- A Template that defines the CICS performance data to be included in the HDB. Templates allow you to customize what information is to be contained in the HDB. They are similar to Report Forms. Templates are relevant only to Performance HDBs (List and Summary), they are not required for Statistics HDBs.
- Selection Criteria that allow you to filter the CMF Performance Class data used to build the HDB.
- Container data sets that contain either the HDB performance data or the HDB statistics data.

There are two types of Performance HDB, List and Summary where the HDB type is determined by the Template. There is a third type of HDB for CICS Statistics and Server statistics data. For a Statistics HDB, instead of a Template, you select from a menu the statistics categories and reports that identify the data that you want collected.

List HDB

Records in a List HDB represent single events. For example, the execution of a single transaction with its associated performance characteristics. Typically, one CMF Performance record creates one List record. The List HDB is analogous to the CICS PA Performance List report (see "Performance List report" on page 188).

What is an HDB?

The following is an example of a List HDB:

Start Time	Tran ID	Userid	Response Time	CPU Time	Dispatch Time	Dispatch Count	Suspend Time	Suspend Count	File Calls
2002-05-31-12.56.47.9763	MENU	JOHN	0.9956	0.1020	0.7567	2	0.2012	1	7
2002-05-31-12.56.49.1223	STOK	CHRIS	1.5464	0.4943	1.1028	3	0.4376	2	12

Figure 272. Example of a List HDB

List HDBs typically have a short lifespan and are used to provide detailed ad-hoc reporting or to diagnose performance problems.

Summary HDB

Records in a Summary HDB represent a summarization (or average) of one or more events over time. For example, the performance characteristics of a Transaction ID over a 15 minute interval. Typically, many CMF Performance records create one Summary record. The Summary HDB is analogous to the CICS PA Performance Summary report (see "Performance Summary report" on page 197).

The following is an example of a Summary HDB:

Start Time	Tran ID	Task Count	Average Response Time	Average CPU Time	Average Dispatch Time	Average Dispatch Count	Average Suspend Time	Average Suspend Count	Average File Calls
2002-05-31-12.00.00	MENU	12	0.9956	0.1020	0.7567	2	0.2012	1	7
2002-05-31-12.00.00	STOK	17	1.5464	0.4943	1.1028	3	0.4376	2	12

Figure 273. Example of a Summary HDB

Summary HDBs typically have a longer lifespan and are built up over time to provide historical reporting and trend analysis.

Statistics HDB

A Statistics HDB provides the ability to warehouse and analyze CICS statistics data via powerful online viewing and reporting facilities. Short-term in-depth analysis or long-term trend analysis for your CICS statistics is possible.

The following is an example of a Statistics HDB:

```
                     Statistics Reports                    Line 1 of 87
Command ===> _____   Scroll ===> PAGE

                                                             DB2
___          ** Report **                          Collect  Load
    -  ___    Regions                                 Yes    Yes
           ___   Transaction Manager                  Yes    No
        -  D__   CICS Dispatcher                       No     No
              ___   Dispatcher Overview                No     No
              ___   Dispatcher TCB Modes               No     No
              ___   Dispatcher TCB Pools               No     No
              ___   MVS TCB Overview                   No     No
              ___   MVS TCBs                           No     No
        -  A__   CICS Storage                         Yes    Yes
              ___   Storage Overview                  Yes    Yes
              ___   DSAs                               Yes    Yes
              ___   Domain Subpools                   Yes    Yes
              ___   Task Subpools                     Yes    Yes
        -  ___   CICS Dumps                           Yes    No
              ___   Transaction Dump Overview         Yes    No
              ___   Transaction Dumps                 Yes    No
```

Figure 274. Example of a Statistics HDB definition

Statistics data is collected for activated categories and reports with **Collect=Yes**.

```
REPORT                      Statistics Reports                    Line 1 of 87
Command ===> _____   Scroll ===> PAGE

System: IYK3Z4/MV2C       Type: INT  Interval: 2004/12/16 07:42:00 Thursday

___          ** Reports **                          Size
    -  ___    Regions                                379
           ___   Transaction Manager                   1
        -  ___   CICS Dispatcher                        0
              ___   Dispatcher Overview                 0
              ___   Dispatcher TCB Modes                0
              ___   Dispatcher TCB Pools                0
              ___   MVS TCB Overview                    0
              ___   MVS TCBs                            0
        -  ___   CICS Storage                         355
              ___   Storage Overview                    1
              ___   DSAs                                8
              ___   Domain Subpools                   342
              S__   Task Subpools                       4
        -  ___   CICS Dumps                             5
              ___   Transaction Dump Overview           1
              ___   Transaction Dumps                   3
              ___   System Dump Overview                1
              ___   System Dumps                        0
```

Figure 275. Example of a Statistics HDB data collection

Size indicates the number of records collected.

```
REPORT    Task Subpools                                              Line 00000001 Col 002 010
Command ===> _____ Scroll ===> PAGE

System: IYK3Z4/MV2C      Type: INT  Interval: 2004/12/16 07:42:00 Thursday

DSA                           DSA      GETMAIN     FREEMAIN    Element     Page                  Peak Page
Name      Location  Access    Index    Requests    Requests    Storage     Storage   Elements    Storage
--------  --------  --------   --------  ----------  ----------  ----------  ----------  ----------  ----------
CDSA      BELOW     CICS       CDSA            97          92        5680        20K          5         56K
UDSA      BELOW     CICS       UDSA             0           0           0         0K          0          0K
ECDSA     ABOVE     CICS       ECDSA         5661        5654        8064        16K          7         52K
EUDSA     ABOVE     CICS       EUDSA            1           1           0         0K          0         64K
```

Figure 276. Example of a Statistics HDB report

HDB data

An HDB keeps its data in sequential data sets called containers. A new data set is created every time a request is submitted to load data into the HDB.

Saving data in small data sets rather than one monolithic table or data set makes management of the environment simpler:

- You can start using an HDB immediately without worrying whether enough DASD space is available to hold many year's worth of data.
- DFHSM can migrate old data, ensuring only the most recent or required data is retained online for immediate reporting, saving expensive DASD resources.
- ABENDX37 conditions are avoided. In the event of a data set full condition, CICS PA simply closes the full data set and continues loading into a new one.
- Individual data sets can be loaded directly into a DB2 table or CSV extract data set for further analysis.

How to analyze HDB data

Three facilities are provided to help you analyze HDB data:

1. **Reporting.**

   The HDB Reporting facility provides flexible reporting of HDBs via Report Forms.

2. **Exporting to DB2.**

   HDB data can be loaded directly into a DB2 table for further analysis. HDB data is saved in a format that is suitable for direct load. The HDB Export facility automates this process for you.

3. **Extracting to CSV.**

   HDB data can be exported into an extract data set in CSV format (comma separated values) for further analysis by PC spreadsheet tools.

HDB tour outline

Every aspect of the CICS PA Historical Database is controlled via the ISPF dialog.

This section takes you through the process of defining and using an HDB for CMF performance class data.

Setup. Initially, your HDB environment requires a minimal one-time setup. HDB definitions are saved in the HDB Register, a VSAM KSDS. CICS PA automatically defines the Register for you when you first try to use it.

Then the required steps are:

Step 1. **Template.**

Defining an HDB is a two step process: first define a Template and then define an HDB based on that Template. The Template identifies which CMF performance fields are to be kept in the HDB.

Step 2. **Definition.**

After the Template is defined, then define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data.

Step 3. **Load.**

Loading data into the HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

```
HDB(LOAD(...
```

CICS PA reads the CMF performance class data and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data.

Step 4. **Report.**

Reporting against an HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to report against an HDB is:

```
HDB(REPORT(...
```

You can tailor HDB reporting by using a Report Form. This allows you to select which fields in the HDB are reported and how they are presented.

Step 5. **Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.

b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

Step 6. **Extract.**

The HDB Extract facility allows you to export data from your HDB data sets to an extract data set in CSV format, suitable for import into PC-based spreadsheet applications for further analysis.

Step 7. **Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets.

Step 8. **Housekeeping.**

HDB housekeeping should be run periodically to cleanup your HDB environment. Housekeeping performs two tasks:

a. Deletes HDB container data sets that have expired or have delete pending.

b. Removes definitions from the HDB Register that are no longer required.

Historical Database Menu

Option 5 **Historical Database** from the CICS PA Primary Option Menu takes you to the Historical Database Menu. The HDB menu is presented in typical processing sequence.

```
  File  Options  Help
 -------------------------------------------------------------------
                        Historical Database Menu
 Option ===> _____

 1  Templates       Design HDB Templates
 2  Define          Define a new HDB
 3  Load            Load data into the HDBs
 4  Report          Submit HDB report requests
 5  Export          Export HDB data sets to DB2
 6  Extract         Extract HDB data sets to CSV
 7  Maintenance     Maintain HDB definitions and data sets
 8  Housekeeping    Perform HDB housekeeping

 HDB Register . . . 'CICSPROD.CICSPA.HDB.REGISTER'_____   +


   F1=Help      F3=Exit      F4=Prompt    F10=Actions   F12=Cancel
```

Figure 277. Historical Database (HDB) Menu

Specify the HDB Register data set name. Remember that you may want to share this Register with other users. This will ensure that HDB data can be generated once and available to everyone.

HDB Register

Your HDB environment is controlled by the HDB Register. The HDB Register is a VSAM KSDS that acts as a repository for all definitions associated with your HDB environment, such as:
* Templates (Performance HDBs only)
* HDB Definitions
* Selection Criteria (Performance HDBs only)
* Object Lists (Performance HDBs only)
* Container data set information
* Audit information about Load requests
* Shared System Definitions

It is recommended that you share the HDB Register with other CICS PA users so that you only need to generate history data once, allowing multiple users to report against it. There is no limit to the number of HDB Registers you can define.

If your HDB Register is not cataloged, the dialog will first prompt you to define it when you select an option from the menu.

```
                       Define HDB Register
Command ===> _____


                                       Enter "/" to select option
                                         _  Edit IDCAMS command
                                         _  Browse errors only
  HDB Register Name  . . 'CICSPROD.CICSPA.HDB.REGISTER'_____

                         Cluster Level Information:

 Space Units  . . . . . 1  1. Cylinders   Primary Quantity . . . 1_____
                           2. Tracks      Secondary Quantity . . 1_____
                           3. Records
                           4. Kilobytes
                           5. Megabytes
 Volume . . . . . . . . _____
 Data Class . . . . . . _____
 Management Class . . . _____
 Storage Class  . . . . _____

 F1=Help     F3=Exit     F6=Resize     F12=Cancel
```

Figure 278. Define HDB Register

Specify the required allocation settings and then press **Enter** to define the HDB Register data set. Typically a space allocation of 1 primary and 1 secondary cylinder is sufficient.

Once the Register is defined, you are ready to start using HDB.

HDB Templates

Templates specify the performance information that is to be contained in an HDB. Templates are used by List and Summary HDBs. They are not required for Statistics HDBs which instead use a menu-selection facility.

Customize the Templates to specify the data that you want to be contained in the HDB. Templates are similar to Report Forms which are used to customize reports.

Select option 1 **Templates** from the HDB menu to define (or update) Templates.

```
  File  Options  Help
 ----------------------------------------------------------------------------
                             HDB Templates
Command ===> NEW_____ Scroll ===> CSR_

Select to edit Template. Enter NEW command to define a new Template.

/  Name     Type             Description               Changed        ID
******************************* End of list *******************************

 F1=Help      F3=Exit      F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 279. HDB Templates

The NEW command is used to define a new Template.

Guided Tour: Performance HDB

```
   File  Systems  Options  Help
 -------------------------------------------------------------
                      New HDB Template
 Command ===> _____

 Specify the name of the new Template and its options.

 Name . . . . . PRODSUM_

 APPLID . . . . _____    +     Version (VRM) . . ____ +
 MVS Image  . . _____
                                 _  Field Categories
 Type 2  1. List
         2. Summary


  F1=Help  F3=Exit  F4=Prompt  F6=Resize  F10=Actions  F12=Cancel
```

Figure 280. New HDB Template

You need to specify the Template name and type. Other options affect which CMF
Fields the Template will initially be defined with. They can be used to reduce the
amount of fields contained in the Template.

In this example, a Summary Template called PRODSUM will be created. Press
Enter to proceed with defining the Template.

```
  File  Edit  Confirm  Upgrade  Options  Help
 --------------------------------------------------------------------------
                     EDIT Summary Template - PRODSUM     Row 1 of 231 More: >
 Command ===> _____     Scroll ===> CSR_

 Description  . . . Summary HDB Template_____   Version (VRM): 650

 Selection Criteria:
   _   Performance                        Time Interval  . . 00:15:00  (hh:mm:ss)

       Field
 /     Name +    K  Description
 __    START___   A  Task start time
 __    MVSID___   A  MVS SMF ID
 __    APPLID__   A  CICS Generic APPLID
 __    TRAN____   A  Transaction identifier
 __    TASKCNT_      Total Task count
 __    RESPONSE      Transaction response time
 __    DISPATCH      Dispatch time
 __    CPU_____      CPU time
 __    SUSPEND_      Suspend time
 __    DISPWAIT      Redispatch wait time
 __    FCWAIT__      File I/O wait time
 D_    FCAMCT__      File access-method requests
 __    IRWAIT__      MRO link wait time
 __    SC24UHWM      UDSA HWM below 16MB
 I_    SC31UHWM      EUDSA HWM above 16MB
 __    TSWAIT__      VSAM TS I/O wait time
 __    EOD_____      ---------------- End of HDB -----------------
 __    TERM____   A  Terminal ID
 __    APPLTRAN   A  Application naming Tran ID
 __    APPLPROG   A  Application naming Program
 __    STOP____   A  Task stop time
  F1=Help     F3=Exit      F4=Prompt    F5=Rfind     F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 281. Edit Summary Template

Templates are similar to Report Forms. Where Report Forms define the fields to be included in a report or extract, Templates define the fields to be included in an HDB.

When you define a new Template, the default fields list is initially displayed. Edit the Template to include the required fields.

The **EOD** marker in the Template signifies the end of fields that will be included in the HDB. Fields after the EOD marker will not be included in the HDB. You can move required fields above the EOD marker to include them in the HDB.

The example above in Figure 281 displays the default Summary Template. Key fields are positioned at the top and the most common performance indicators like response, dispatch and suspend times are included.

Edit the Template to meet your reporting requirements. In the example above, FCAMCT is deleted and TSWAIT is inserted.

Specify Performance Selection Criteria and the Report Interval to control the data you want in your HDBs:

Selection Criteria
> Templates have optional Selection Criteria that allows you to filter the CMF

performance class records used to build the HDB. For example, the HDB only includes data for transactions that use File Control services (FCTOTAL>0).

Select Performance to specify Selection Criteria.

Report Interval
Summary Templates specify a recording time interval. The default is 1 minute which indicates that summary data is accumulated and recorded in 1 minute intervals. Select the interval carefully because it will impact on HDB processing as follows:

1. **Loading**. Shorter recording intervals write more records, increasing the size of your HDB data sets.

2. **Reporting**. Longer recording intervals restrict reporting. For example, if you specify a recording interval of 1 hour then you can only report on 1 hour (or higher) intervals, and 15 minute interval reporting is not possible.

Therefore selecting the correct interval is a balance between not loading too much data and not restricting reporting. In the example above the interval has been changed to 15 minutes.

Exit (F3) to save the Template. You are now ready to define an HDB that uses this Template.

Warning!
After the Template has been initially saved, you are permitted to edit the Template to change its field list. However if the Template is already being used to load data into a HDB, then changing the Template can potentially cause reporting problems in the future. CICS PA supports the alteration of Template fields, but a few simple rules will ensure that HDB processing is not compromised:

1. Do not change the key fields of a Summary Template.

2. Do not change the focus of a Template. For example, if the Template includes Temporary Storage fields only, do not delete those fields and insert File Control fields in their place. You should create another Template with a focus on File Control.

Defining a Performance HDB

Defining a Performance HDB allows you to collect (load) and report historical performance data. The definition alone does not cause any action by CICS PA.

Select option 2 **Define** from the HDB menu to define a new HDB. Then when prompted, select option 1 to create a Performance HDB.
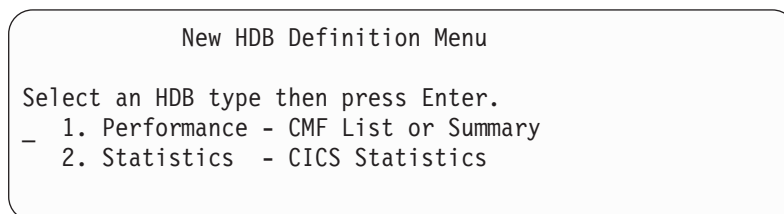
```
          New HDB Definition Menu


Select an HDB type then press Enter.
_   1. Performance - CMF List or Summary
    2. Statistics  - CICS Statistics
```

Figure 282. New HDB Definition Menu

In the following example, we have given the HDB a name of CICSP1H and a description of Summary HDB for CICSP1.

```
  File  Systems  Options  Help
---------------------------------------------------------------------------
                              New HDB Definition
Command ===> _____

Specify new HDB definition options then press EXIT to save.

Name . . . . . . CICSP1H_  APPLID  CICSP1__ +  Image _____
Description  . . Summary HDB for CICSP1_____

HDB Format:                               Selection Criteria:
 Template  . . . PRODSUM_  +                 _  Performance

Data Retention Period:
 Years . . 10_  Months . . ___  Weeks . . ___  Days . . ___  Hours . . ___

Data Set Allocation Settings:
 DSN Prefix . . . . . . JCH_____
 Management class . . . _____    (Blank for default management class)
 Storage class  . . . . _____    (Blank for default storage class)
  Volume serial . . . . _____      (Blank for system default volume)
  Device type . . . . . _____    (Generic unit or device address)
 Data class . . . . . . _____    (Blank for default data class)
  Space Units . . . . . CYLS____    (TRKS, CYLS)
  Primary quantity  . . 10_____    (In above units)
  Secondary quantity    10_____    (In above units)

F1=Help  F3=Exit  F4=Prompt  F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 283. New HDB Definition

The other options are:

APPLID

APPLID is optional and specifies the CICS system that the HDB applies to. You can use **Prompt** (F4) to select from a list of CICS systems defined in your System Definitions.

Specify APPLID to ensure that only data for this CICS system is loaded into the HDB. At Load time, CICS PA will generate JCL that includes this APPLID in the command deck and DD statements for this system's SMF Files.

Template

The format and type of the HDB is determined by the Template.

In the example above we have specified PRODSUM, the Template created in the previous step. You can use **Prompt** (F4) to select from a list of defined Templates. PRODSUM is a Summary Template and HDB CICSP1H inherits its attributes.

Selection Criteria

HDBs have optional Selection Criteria that allows you to filter the CMF performance class records used to build the HDB. For example, the HDB only includes data for a particular application's transaction ids, such as TRAN=MY*. Select Performance to specify Selection Criteria.

Templates can also specify Selection Criteria. If the Template and HDB both have active Selection Criteria then both are checked and *both* must match for the record to be processed.

Template Selection Criteria typically focuses on the type of data being recorded. For example, if your Template is monitoring File Control activity

then its Selection Criteria can specify FCTOTAL>0 to include only transactions that used File Control services.

HDB Selection Criteria typically focuses on the application targeted by the HDB. For example, if the HDB is for MY application then its Selection Criteria can specify TRAN = MY* to include only transactions in MY application.

The resultant HDB will include data for transactions matching MY* that use File Control services.

Data Retention Period

The Data Retention Period specifies how long the HDB container data sets are to be kept. Typically:

- Summary HDBs need to keep their container data sets for many years for long term trend analysis.
- List HDBs used for ad-hoc reporting may only need to keep their container data sets for a couple of hours or days.

Only one Retention Period can be specified: either years, months, weeks, days, or hours. You can leave it blank to ensure data is never expired.

Container data sets are deleted by **HDB Housekeeping** after they have passed their expiry date.

Use **HDB Maintenance** to check container data set status or to alter the retention period.

Data Set Allocation Settings

Data Set Allocation Settings specify the allocation attributes of the data sets that contain data for this HDB. CICS PA dynamically allocates container data sets at load time.

The format of the data set name is *DSN-prefix.HDB-name.Dyyddd.Thhmmss*.**HDB** where the DSN prefix is the data set name high level qualifier.

Specify allocation settings that satisfy your installation requirements. The size of container data sets is not critical. Typically you would specify a size that accommodates a single load request. For example, if you load data into the HDB daily, then 10 cylinders may be sufficient. However if CICS PA encounters an out-of-space condition (ABENDx37) during load, then it simply closes the data set and recommences loading in a new data set. You can decide to specify a larger size initially and adjust it later using **HDB Maintenance.**

Exit (F3) to save the HDB. You are now ready to use this HDB.

Loading data into a Performance HDB

After defining the HDB, you can start to collect (load) the historical performance data.

Select option 3 **Load** from the HDB menu to generate JCL to load an HDB.

```
  File  Options  Help
 --------------------------------------------------------------------------------
                                    Load HDBs                      Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to load an HDB.

    Name     Type              Description                 Changed          ID
 S CICSP1H  SUMMARY   Summary HDB for CICSP1           2004/12/06 16:02 JCH
 ******************************* End of list *********************************

  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 284. Load HDBs

Select the required HDB from the list to display the Load panel.

```
  File  Systems  Options  Help
 -------------------------------------------------------------------
                         Load SUMMARY HDB CICSP1H
 Command ===> _____

 Specify HDB load options then press Enter to continue submit.

 System Selection:                     ──── Report Interval ────
  APPLID . . CICSP1H_  +                  YYYY/MM/DD  HH:MM:SS.TH
  Image  . . _____   +          From 0_____      09:00:00.00
  Group  . . _____   +          To   0_____      16:30:00.00

 DB2 Export Options:                   Table Load Options
 _   Load DB2 Table                    1  1. Resume   2. Replace

 Include Clock Field Components        Summary Options
 1  1. Time and Count                  _   Include Sums of Squares
    2. Time only
    3. Count only                      Enter "/" to select option
                                       /  Edit JCL before submit

  F1=Help     F3=Exit    F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 285. Load Summary HDB

The options are:

System Selection

System Selection specifies the CICS system(s) whose data is to be loaded into the HDB. It is initialized to the CICS system APPLID that you specified during HDB definition.

In the example above, CICS PA generates an APPLID(CICSP1) operand in the command deck and includes DD statements for the SMF Files defined in System Definitions for CICSP1.

Report Interval

Specify the time range of data to be included in the HDB. You can specify an explicit date, such as 2004-12-05, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. In the example above we have used a relative date of zero (0) to indicate that we are processing today's SMF data, from 9:00am to 4:30pm.

It is recommended that you specify relative dates if you want to use an automated job scheduler to run the load HDB JCL regularly. The JCL can be set up once and run daily without needing to change it.

DB2 Export Options

To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL" on page 625. (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined. To define a DB2 table, see "Creating DDL to define a DB2 table" on page 637.

If you select the **Replace** Table Load option, but the HDB load fails, then the result will be an empty DB2 table.

Once you have specified your Load options, you will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your load request.

If you selected **Edit JCL before submit** then the Load HDB JCL is displayed in an edit session. Specify this option if you want to save the JCL in an automated job scheduler JCL library.

```
EDIT       JCH.SPFTEMP1.CNTL                            Columns 00001 00072
Command ===> change '<unresolved>' 'CICSP1.DAILY.CMF(0)'__  Scroll ===> CSR_
****** *************************** Top of Data ****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB LOAD JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
000005 //CPAHDBRG DD  DSN=CICSPROD.CICSPA.HDB.REGISTER,DISP=SHR
000006 //SYSPRINT DD  SYSOUT=*
000007 //* SMF Input Files
000008 //* SMF Files that follow have unresolved DSNs
000009 //* SMF File for System=CICSP1
000010 //SMFIN901 DD DSN=<unresolved>,DISP=SHR
000011 //* Command Input
000012 //SYSIN DD *
000013 * HDB=CICSP1H
000014 * Description=Summary HDB for CICSP1
000015        CICSPA SMFSTART(0,09:00:00.00),
000016               SMFSTOP(0,16:30:00.00)
000017 * HDB Load for System=CICSP1
000018        CICSPA IN(SMFIN901),
000019               APPLID(CICSP1),
000020               LINECNT(60),
000021               FORMAT(':','/'),
000022           HDB(OUTPUT(HDBL0001),LOAD(CICSP1H))
000023 /*
```

Figure 286. Edit JCL for Load Summary HDB

The SMF file data set name for system CICSP1 is unresolved. This indicates that the System Definition for CICSP1 does not have SMF files specified. Substitute the required SMF file data set name into the JCL.

The command deck specifies operands to load HDB CICSP1H:

```
HDB(OUTPUT(HDBL0001),LOAD(CICSP1H))
```

Enter **SUBmit** in the command line to submit the job to run the load.

Successful completion of the Load request will generate a Recap report like the following.

```
V2R1M0                                  CICS Performance Analyzer
                                          HDB Load Recap Report

HDBL0001 Printed at 9:28:48 12/07/2004  Data from 09:02:00 12/07/2004 to 16:29:00 12/07/2004  Page  1

LOAD requested for HDB: CICSP1H   Register DSN: CICSPROD.CICSPA.HDB.REGISTER

The following Container(s) were created and loaded:
  Container DSN: JCH.CICSP1H.D03219.T092846.HDB              No of Records: 54,567
   Start Time Stamp: 2004-12-07-09.00.00        End Time Stamp: 2004-12-07-16.00.00

LOAD process complete.
```

Figure 287. HDB Load Recap report

The Recap report provides a list of the Container data sets created by the Load process. In this example, CICS PA created Container data set JCH.CICSP1H.D03219.T092846.HDB. It contains 54,567 records for the period 9:00am to 4:00pm on December 7, 2004.

HDB Load Audit

HDB load requests create an audit record that includes:
*   Date/time range of the data used to create the containers
*   Status indicator, OK or Failed

The purpose of the HDB Load Audit is two-fold:
*   Verify that all load requests have completed successfully
*   Highlight gaps in the data due to Load requests not being run

The Load Audit records can be viewed and maintained from the dialog. For more information, see "HDB Load Audit" on page 647.

Performance HDB Reporting

After you have loaded data into an HDB it is then eligible for reporting.

Select option 4 **Report** from the HDB menu to submit a report request.

```
  File  Options  Help
 ----------------------------------------------------------------------------
                              Report HDBs                      Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to run report.

    Name    Type           Description                 Changed        ID
 S CICSP1H  SUMMARY  Summary HDB for CICSP1          2004/12/07 09:28 JCH
 ****************************** End of list ******************************


  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 288. Performance HDB Reporting

Select the required HDB from the list to display the Run Report panel, as shown in the following example..

```
   File  Options  Help
  --------------------------------------------------------------------
                       Run SUMMARY HDB Report - CICSP1H
  Command ===> _____

  Specify run options then press Enter to continue submit.

  Report Format:                          ----- Report Interval ------
   Report Form  . . _____   +             YYYY/MM/DD   HH:MM:SS.TH
                                          From 2004/12/07  09:00:00.00
                                          To   2004/12/07  16:00:00.00
  Reporting Options:
   Time Interval . . 00:01:00   (hh:mm:ss)
   Totals Level  . . 8          (blank or 0-8)
   Precision . . . . 4          (4-6)

  Enter "/" to select option
  /  Edit JCL before submit

  HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.

   F1=Help     F3=Exit     F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 289. Run Summary HDB Report

The options are:

Report Form

Specify a Report Form to tailor the format of the report output. If you do not specify a Form, CICS PA will report all the fields in the HDB in order up to the maximum 8000 characters.

Report Interval

Specify the reporting time range. You can specify an explicit date, such as 2004/12/07, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. At the bottom of the display is the time range of data contained in this HDB. If you specify a Report Interval, then it must be within this range otherwise the report request will fail.

Time Interval

Specify an optional Time Interval when reporting Summary HDBs. The default is the Time Interval used to create the data (as defined in the Template). In our example, Template PRODSUM used to create the HDB data specified 15 minutes.

You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In the example above, the Interval has been changed to 1 hour.

Totals Level

This option applies only to the Summary HDB report. Leave blank if you do not want to include total lines in the report. This generates the NOTOTALS operand.

Specify a number between 1 and 8 to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. This generates the TOTALS(n) operand for n between 1 and 8. Default: **8**

Specify 0 for no subtotals, but print only the grand total. This generates the TOTALS(0) operand.

Precision

> Specify the precision for numeric fields: 4, 5 or 6 decimal places to report up to microseconds. This generates the PRECISION(n) operand for n between 4 and 6. Default: **4**

Once you have specified your Report options, you will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your report request.

If you selected **Edit JCL before submit** then the Report HDB JCL is displayed in an edit session.

```
EDIT       JCH.SPFTEMP2.CNTL                          Columns 00001 00072
Command ===> _____ Scroll ===> CSR_
****** *************************** Top of Data ***************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB REPORT JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD DISP=SHR,DSN=CPA.V2R1M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REGISTER
000006 //SYSPRINT DD SYSOUT=*
000007 //* Command Input
000008 //SYSIN DD *
000009 * HDB=CICSP1H
000010 * Description=Summary HDB for CICSP1
000011        CICSPA SMFSTART(2004/12/07,09:00:00.00),
000012               SMFSTOP(2004/12/07,16:00:00.00)
000013        CICSPA NOAPPLID,
000014            LINECNT(60),PRECISION(4),
000015            FORMAT(':','/'),
000016          HDB(OUTPUT(HDBR0001),REPORT(CICSP1H),
000017            INTERVAL(01:00:00),NOTOTALS)
000018 /*
000019 //* HDB Container Data Sets. HDB Report processing does not require
000020 //* these data sets to be included in the JCL as they are dynamically
000021 //* allocated when required. They are included:
000022 //* 1) for your reference
000023 //* 2) to ensure that all required data sets are cataloged
000024 //* 3) to allow DFHSM to recall required data sets up front
000025 //HDB00001 DD DISP=SHR,DSN=JCH.CICSP1H.D03219.T092846.HDB
****** ************************** Bottom of Data **************************
```

Figure 290. Edit JCL for Summary HDB report

The HDB container data sets are listed at the bottom of the JCL. They are not required here because the CICS PA batch reporting utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to report against HDB CICSP1H:

`HDB(OUTPUT(HDBR0001),REPORT(CICSP1H))`

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Report request will generate an HDB Summary report.

Guided Tour: Performance HDB

```
V2R1M0                                        CICS Performance Analyzer
                                            Historical Database Summary

HDBR0001 Printed at 12:20:43  12/09/2004     Data from 09:00:00 12/07/2004 to 16:00:00 12/07/2004                    Page  1

                                        Avg     Avg     Avg     Avg     Avg     Avg     Avg     Avg     Avg
Start               MVS  APPLID  Tran  Tasks Response Dispatch User CPU Suspend DispWait FC Wait IR Wait SC24UHWM SC31UHWM
Interval                                     Time    Time     Time    Time    Time    Time    Time
2004/12/07 09:00 MVS1 CICSP1    ABRA    1   .2729   .0009    .0006   .2720   .0000   .0000   .2719       0       0
2004/12/07 09:00 MVS1 CICSP1    ASIX    2   .2184   .0009    .0006   .2175   .0000   .0000   .2175       0       0
2004/12/07 09:00 MVS1 CICSP1    ATRA    1  1.6067   .0008    .0005  1.6058   .0000   .0000  1.6057       0       0
2004/12/07 09:00 MVS1 CICSP1    BLIX    1   .0845   .0008    .0005   .0836   .0000   .0000   .0835       0       0
2004/12/07 09:00 MVS1 CICSP1    CRVI    1   .0004   .0004    .0000   .0000   .0000   .0000   .0000       0       0
2004/12/07 09:00 MVS1 CICSP1    CSMI    2   .0107   .0006    .0004   .0101   .0000   .0000   .0101       0       0
2004/12/07 09:00 MVS1 CICSP1    DEBT    1   .0038   .0006    .0004   .0032   .0000   .0000   .0031       0       0
2004/12/07 09:00 MVS1 CICSP1    OPIC    1   .0236   .0008    .0006   .0227   .0000   .0000   .0227       0       0
2004/12/07 09:00 MVS1 CICSP1    RESU    1   .0341   .0009    .0006   .0332   .0000   .0000   .0332       0       0
2004/12/07 09:00 MVS1 CICSP1    RGYM    1   .0056   .0010    .0007   .0046   .0000   .0000   .0045       0       0
2004/12/07 09:00 MVS1 CICSP1    T050    2   .0296   .0009    .0006   .0288   .0000   .0000   .0286       0       0
2004/12/07 09:00 MVS1 CICSP1    T096    1   .0398   .0012    .0005   .0386   .0001   .0000   .0385       0       0
2004/12/07 09:00 MVS1 CICSP1    XYLO    1   .0010   .0009    .0001   .0001   .0000   .0000   .0000   11600   16368
```

Figure 291. HDB Summary report

Tailoring the HDB report format

To change the format of the report or to report additional information from the HDB then you need to use a Report Form. Report Forms are defined outside the HDB menu using option 3 **Report Forms** from the CICS PA Primary Option Menu.

In the example below, we have created a Summary Report Form called HDBFORM1.

```
   File  Edit  Confirm  Upgrade  Options  Help
 -------------------------------------------------------------------------------
                    EDIT SUMMARY Report Form - HDBFORM1    Row 1 of 236 More: >
 Command ===> _____    Scroll ===> CSR_

 Description  . . . Summary Report Form_____    Version (VRM): 650

 Selection Criteria:
   _  Performance                                       Page width . . 132_

     Field      Sort
 /   Name +   K  O  Type     Fn    Description
 __  TRAN____  K  A  _____  ___   Transaction identifier
 __  TASKCNT_         _____  ___   Total Task count
 __  RESPONSE         _____  AVE   Transaction response time
 __  RESPONSE         _____  DEV   Transaction response time
 __  DISPATCH         TIME___ AVE   Dispatch time
 __  DISPATCH         COUNT__ AVE   Dispatch time
 __  CPU_____         TIME___ AVE   CPU time
 __  SUSPEND_         TIME___ AVE   Suspend time
 __  SUSPEND_         COUNT__ AVE   Suspend time
 __  DISPWAIT         TIME___ AVE   Redispatch wait time
 __  FCWAIT__         TIME___ AVE   File I/O wait time
 __  FCWAIT__         COUNT__ AVE   File I/O wait time
 __  IRWAIT__         TIME___ AVE   MRO link wait time
 __  IRWAIT__         COUNT__ AVE   MRO link wait time
 __  EOR_____                ---------------- End of Report ----------------
```

Figure 292. Edit Summary Report Form

This Form will change the default HDB report in a number of ways:

1. The Form does not specify a time stamp key. This will cause the report to be summarized by Transaction ID only. The interval records of the HDB will be accumulated for each Transaction ID.
2. The count components of the Clock fields have been included. By default the HDB Summary report only displays the average of the time components.
3. Response time is also to be reported as a Standard Deviation. This will provide an indication of how response time varies. The higher the standard deviation the more that response time varies.

When you next report against the HDB, you can use this Report Form. On the Run Report panel, press **Prompt** (F4) to select from a list of Report Forms.

```
   File  Options  Help
 ----------------------------------------------------------------------
                    Run SUMMARY HDB Report - CICSP1H
 Command ===> _____

 Specify Report request options then press Enter to continue submit.

 Reporting Options:                      ----- Report Interval ------
  Report Form  . . HDBFORM1  +              YYYY/MM/DD  HH:MM:SS.TH
                                         From 2004/12/07  09:00:00.00
                                         To   2004/12/07  16:00:00.00

 Time Interval  . . 01:00:00  (hh:mm:ss)

 Enter "/" to select option
 /  Edit JCL before submit

 HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.

  F1=Help     F3=Exit    F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 293. Run Summary HDB report specifying a Report Form

When a Report Form is specified, the command input changes to include the FIELDS operand to indicate that customized reporting is required.

```
  EDIT       JCH.SPFTEMP2.CNTL                               Columns 00001 00072
  Command ===> _____ Scroll ===> CSR_
  ****** **************************** Top of Data *****************************
  000001 //CICSPA  JOB ,NOTIFY=&SYSUID
  000002 //*  CICS PA V2R1 HDB REPORT JCL
  000003 //CICSPA   EXEC PGM=CPAMAIN
  000004 //STEPLIB  DD DISP=SHR,DSN=CPA.V2R1M0.SCPALINK
  000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REGISTER
  000006 //SYSPRINT DD SYSOUT=*
  000007 //* Command Input
  000008 //SYSIN DD *
  000009 * HDB=CICSP1H
  000010 * Description=Summary HDB for CICSP1
  000011        CICSPA SMFSTART(2004/12/07,09:00:00.00),
  000012               SMFSTOP(2004/12/07,16:00:00.00)
  000013        CICSPA NOAPPLID,
  000014               LINECNT(60),PRECISION(4),
  000015               FORMAT(':','/'),
  000016           HDB(OUTPUT(HDBR0001),REPORT(CICSP1H),
  000017               INTERVAL(01:00:00),NOTOTALS)
  000018               FIELDS(TRAN,
  000019                      TASKCNT,
  000020                      RESPONSE(AVE),
  000021                      RESPONSE(DEV),
  000022                      DISPATCH(TIME(AVE)),
  000023                      DISPATCH(COUNT(AVE)),
  000024                      CPU(TIME(AVE)),
  000025                      SUSPEND(TIME(AVE)),
  000026                      SUSPEND(COUNT(AVE)),
  000027                      DISPWAIT(TIME(AVE)),
  000028                      FCWAIT(TIME(AVE)),
  000029                      FCWAIT(COUNT(AVE)),
  000030                      IRWAIT(TIME(AVE)),
  000031                      IRWAIT(COUNT(AVE))))
  000032 /*
  000033 //HDB00001 DD DISP=SHR,DSN=JCH.CICSP1H.D03219.T092846.HDB
  ****** ************************** Bottom of Data ****************************
```

Figure 294. Edit JCL for Summary HDB report specifying a Report Form (FIELDS operand)

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Report request will generate an HDB Summary report.

```
V2R1M0                                CICS Performance Analyzer
                                     Historical Database Summary

HDBR0001 Printed at 13:59:25  12/09/2004    Data from 09:00:00 12/07/2004 to 16:00:00 12/07/2004           Page    1


         Avg     S Dev     Avg     Avg     Avg     Avg     Avg     Avg     Avg     Avg     Avg     Avg
Tran  Tasks Response Response Dispatch Dispatch User CPU Suspend Suspend DispWait FC Wait FC Wait IR Wait IR Wait
         Time     Time     Time   Count    Time    Time   Count    Time    Time   Count    Time   Count
ABRA   7854  .2729    .0147   .0009       3   .0006   .2720       3   .0000   .0000       0   .2719       2
ASIX   9327  .2184    .2949   .0009       2   .0006   .2175       2   .0000   .0000       0   .2175       1
ATRA  21024 1.6067    .4389   .0008       2   .0005  1.6058       2   .0000   .0000       0  1.6057       1
BLIX   7328  .0845    .0043   .0008       2   .0005   .0836       2   .0000   .0000       0   .0835       1
CRVI   9203  .0004    .0001   .0004       1   .0000   .0000       1   .0000   .0000       0   .0000       0
CSMI   2372  .0107    .0092   .0006       3   .0004   .0101       3   .0000   .0000       0   .0101       2
DEBT  13293  .0038    .0011   .0006       2   .0004   .0032       2   .0000   .0000       0   .0031       1
OPIC   1275  .0236    .0076   .0008       2   .0006   .0227       2   .0000   .0000       0   .0227       1
RESU   5674  .0341    .0132   .0009       2   .0006   .0332       2   .0000   .0000       0   .0332       1
RGYM   7485  .0056    .0009   .0010       2   .0007   .0045       2   .0000   .0000       0   .0045       1
T050  18290  .0296    .0121   .0009       3   .0006   .0288       3   .0000   .0000       0   .0286       2
T096    123  .0398    .0098   .0012       2   .0005   .0386       2   .0001   .0000       0   .0385       1
XYLO  13921  .0010    .0002   .0009       1   .0001   .0001       1   .0000   .0000       0   .0000       0
```

Figure 295. HDB Summary report formatted using a Report Form

The Report Form (and resultant FIELDS operand) changes the report to show a summary by Transaction ID over the entire reporting interval. Compare this report output to Figure 291 on page 544.

Exporting Performance HDB data to DB2

After you have loaded data into an HDB it is then eligible for export to DB2.

Summary HDB data is the most commonly used for performance reporting. It is already summarized by time.

List HDB data is typically used to drill down to isolate performance problems or for ad-hoc reporting. Take care when exporting List HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

Statistics HDB data is used for both short-term problem analysis and long-term trend analysis. Like List HDBs, take care when exporting Statistics HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

Select option 5 **Export** from the HDB menu to export HDB data into DB2.

```
   File  Options  Help
 ---------------------------------------------------------------------------
                              Export HDBs                     Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to export HDB to DB2.

    Name     Type            Description                 Changed        ID
 S CICSP1H  SUMMARY  Summary HDB for CICSP1          2004/12/07 15:25 JCH
 ******************************* End of list *********************************

  F1=Help     F3=Exit    F7=Backward    F8=Forward    F10=Actions   F12=Cancel
```

Figure 296. Exporting Performance HDBs

Select the required HDB to display its list of container data sets.

```
   File  Options  Help
 ---------------------------------------------------------------------------
                     Export SUMMARY HDB - CICSP1H            Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Export HDB data set.

 Name . . : CICSP1H

    Data Set Name                                  Start         Volume
 S  JCH.CICSP1H.D03219.T092846.HDB          2004/12/07 09:00:00  USER01
 ******************************* End of list *********************************

  F1=Help     F3=Exit     F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 297. Export HDB

CICS PA can only export one container data set at a time. Select the data set that contains the data in the required time range to be exported into DB2.

```
   File   Options   Help
 ---------------------------------------------------------------------
                            Export HDB Data Set
 Command ===> _____

 HDB Name  . . . : CICSP1H
 Data Set Name . : JCH.CICSP1H.D03219.T092846.HDB


 Select option
 1  1. Create DDL to define table       2. Load data into table

 Create Options                         Load Options
 _   Create Database                    1  1. Resume
 _   Create Storage Group                  2. Replace

 DB2 Settings:
  DB2 Subsystem ID . . . DB2P
  DSNTIAD Plan Name  . . DSNTIA71
  DB2 Load Library . . . 'DB2.V710.SDSNLOAD'_____
  DB2 Exit Library . . . 'DB2.V710.SDSNEXIT'_____
  DB2 RUNLIB Library . . 'DB2.V710.RUNLIB.LOAD'_____
  Database . . . . . . . CICSPA__   Storage Group  . . SYSDEFLT
  VCAT Catalog name  . . USER____   Volume . . . . . . DA0001
  Allocation: Primary   20_____    Secondary  . . . . 20___

 Include Clock Field Components         Summary Options
 1  1. Time and Count                   /   Include Sums of Squares
    2. Time only
    3. Count only

  F1=Help       F3=Exit      F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 298. Export HDB Data Set

Exporting HDB data into DB2 is a two step process, controlled by the **Select Option.** First step is to create the DDL to define the DB2 table. Second step is to load the data into the DB2 table. You can then use your favorite DB2 query tool to analyze the data.

Step 1. "Creating DDL to define a DB2 table"
Step 2. "Loading data into the DB2 table" on page 552
Step 3. Chapter 19, "Analyzing HDB DB2 Export data," on page 659

Creating DDL to define a DB2 table

CICS PA uses DSNTIAD, the sample Dynamic SQL program to run the DDL that defines the DB2 table.

CICS PA builds the JCL that contains the CREATE TABLE statement required to define the DB2 table for this HDB data set. The HDB name is used as the table name, however you can change this by editing the JCL.

The options are:

Create Options
> Select **Create Database** if you want the CREATE TABLE statement to be preceded by a CREATE DATABASE statement to define the DB2 database. You may need to ask your DB2 administrator to do this for you if you do not have sufficient authority.

Select **Create Storage Group** if you want the CREATE TABLE statement to be preceded by a CREATE STOGROUP statement to define the DB2 Storage Group.

DB2 Settings

Specify the required DB2 settings for your environment. CICS PA only provides a basic facility to load data into DB2. It does not provide any management or reporting capabilities once the data is in DB2.

If you omit any DB2 settings, CICS PA will insert parameter markers such as **<setting>** in the JCL stream.

Include Clock Field Components

CMF performance class Clock fields accumulate data for both their count and time components in the HDB. You have a choice as to which components to load into DB2. For example, selecting **Time only** will load the time component but not the count component. Time only is sufficient for most analysis requirements.

Summary Options

Specify **Include Sums of Squares** to load sum-of-square values into the DB2 Table. CICS PA always loads the Total. This allows you to calculate averages. Sums of Squares are required to calculate standard deviation and peak percentiles. Totals (and not Sums of Squares) is sufficient for most analysis requirements.

Note: The storage space for indexes is set to a default arbitrary value. Refer to the *DB2 UDB for z/OS Administration Guide,* for information on how to calculate the space required for an index.

Review the JCL then submit to create the DB2 table:

```
EDIT       JCH.SPFTEMP1.CNTL                          Columns 00001 00072
Command ===> _____ Scroll ===> CSR_
****** ************************* Top of Data *****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB - DDL TO DEFINE DB2 TABLE
000003 //RUNTIAD EXEC PGM=IKJEFT01,DYNAMNBR=20
000004 //STEPLIB  DD DISP=SHR,DSN=DB2.V710.SDSNLOAD
000005 //         DD DISP=SHR,DSN=DB2.V710.SDSNEXIT
000006 //SYSTSPRT DD SYSOUT=*
000007 //SYSTSIN  DD *
000008  DSN SYSTEM(DB2P)
000009  RUN PROGRAM(DSNTIAD) -
000010      LIB('DB2.V710.RUNLIB.LOAD') PLAN(DSNTIA71)
000011 /*
000012 //SYSPRINT DD SYSOUT=*
000013 //SYSUDUMP DD SYSOUT=*
000014 //SYSIN    DD *
000015    CREATE STOGROUP SYSDEFLT VOLUMES(DA0001) VCAT USER;
000016
000017    CREATE DATABASE CICSPA;
000018
000019    COMMIT;
000020
000021    CREATE TABLESPACE CICSP1H
000022          IN        CICSPA
000023          LOCKSIZE  ANY
000024          BUFFERPOOL BP0
000025          CLOSE     NO
000026          SEGSIZE   32
000027          USING     STOGROUP SYSDEFLT
000028          PRIQTY    20
000029          SECQTY    20
000030          ERASE     NO ;
000031
```

Figure 299. Edit JCL for HDB Export: Define DB2 table (Part 1 of 2)

```
000031
000032     CREATE TABLE CICSPA.CICSP1H (
000033        START_DATE              DATE,
000034        START_TIME              TIME,
000035        MVSID                   CHAR(4),
000036        APPLID                  CHAR(8),
000037        TRAN                    CHAR(4),
000038        TASKCNT                 FLOAT,
000039        RESPONSE_TIME           FLOAT,
000040        RESPONSE_TIME_SSQ       FLOAT,
000041        DISPATCH_COUNT          FLOAT,
000042        DISPATCH_COUNT_SSQ      FLOAT,
000043        DISPATCH_TIME           FLOAT,
000044        DISPATCH_TIME_SSQ       FLOAT,
000045        CPU_COUNT               FLOAT,
000046        CPU_COUNT_SSQ           FLOAT,
000047        CPU_TIME                FLOAT,
000048        CPU_TIME_SSQ            FLOAT,
000049        SUSPEND_COUNT           FLOAT,
000050        SUSPEND_COUNT_SSQ       FLOAT,
000051        SUSPEND_TIME            FLOAT,
000052        SUSPEND_TIME_SSQ        FLOAT,
000053        DISPWAIT_COUNT          FLOAT,
000054        DISPWAIT_COUNT_SSQ      FLOAT,
000055        DISPWAIT_TIME           FLOAT,
000056        DISPWAIT_TIME_SSQ       FLOAT,
000057        FCWAIT_COUNT            FLOAT,
000058        FCWAIT_COUNT_SSQ        FLOAT,
000059        FCWAIT_TIME             FLOAT,
000060        FCWAIT_TIME_SSQ         FLOAT,
000061        IRWAIT_COUNT            FLOAT,
000062        IRWAIT_COUNT_SSQ        FLOAT,
000063        IRWAIT_TIME             FLOAT,
000064        IRWAIT_TIME_SSQ         FLOAT,
000065        SC24UHWM_COUNT          FLOAT,
000066        SC24UHWM_COUNT_SSQ      FLOAT,
000067        SC31UHWM_COUNT          FLOAT,
000068        SC31UHWM_COUNT_SSQ      FLOAT,
000069        TSWAIT_COUNT            FLOAT,
000070        TSWAIT_COUNT_SSQ        FLOAT,
000071        TSWAIT_TIME             FLOAT,
000072        TSWAIT_TIME_SSQ         FLOAT
000073     ) IN CICSPA.CICSP1H;
000074
000075     CREATE TYPE 2 UNIQUE INDEX CICSPA.CICSP1H_IX
000076          ON CICSPA.CICSP1H
000077        (
000078        START_DATE,
000079        START_TIME,
000080        MVSID,
000081        APPLID,
000082        TRAN
000083        )
000084     USING STOGROUP   SYSDEFLT
000085           PRIQTY     10
000086           SECQTY     10
000087           ERASE      NO
000088           CLUSTER
000089           BUFFERPOOL BP0
000090           CLOSE      NO
000091 ;
****** *************************** Bottom of Data ***************************
```

Figure 299. Edit JCL for HDB Export: Define DB2 table (Part 2 of 2)

Review the job output in SDSF to verify that the table was created successfully.

Loading data into the DB2 table

CICS PA uses the DB2 Load Utility to load data into the DB2 table.

CICS PA builds the JCL that contains the DB2 Load Utility statement required to load the HDB data set into the DB2 table that was defined in the previous step.

The options are:

Load Options

Select **Resume** if you want the DB2 Load Utility to resume loading data into the table. Typically, this is appropriate for Summary HDBs.

Select **Replace** if you want the DB2 Load Utility to replace data already loaded in the table. Typically, this is appropriate for List HDBs.

Review the JCL then submit to load the DB2 table:

```
EDIT       JCH.SPFTEMP1.CNTL                          Columns 00001 00072
Command ===> _____ Scroll ===> CSR_
****** ***************************** Top of Data *****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB - LOAD DATA INTO DB2 TABLE
000003 //DSNUPROC EXEC PGM=DSNUTILB,REGION=0M,
000004 //          PARM='DB2P'
000005 //STEPLIB  DD  DISP=SHR,DSN=DB2.V710.SDSNLOAD
000006 //         DD  DISP=SHR,DSN=DB2.V710.SDSNEXIT
000007 //SYSPRINT DD  SYSOUT=*
000008 //UTPRINT  DD  SYSOUT=*
000009 //SYSUDUMP DD  SYSOUT=*
000010 //SYSREC   DD  DSN=JCH.CICSP1H.D03219.T092846.HDB,
000011 //             DISP=SHR
000012 //SYSUT1   DD  UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
000013 //SORTOUT  DD  UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
000014 //SYSIN    DD  *
000015 LOAD DATA RESUME YES
000016      INTO TABLE CICSPA.CICSP1H (
000017        START_DATE            POSITION(1)    DATE EXTERNAL(10),
000018        START_TIME            POSITION(12)   TIME EXTERNAL(8),
000019        MVSID                 POSITION(20)   CHAR(4),
000020        APPLID                POSITION(24)   CHAR(8),
000021        TRAN                  POSITION(32)   CHAR(4),
000022        TASKCNT               POSITION(36)   FLOAT,
000023        RESPONSE_TIME         POSITION(44)   FLOAT,
000024        RESPONSE_TIME_SSQ     POSITION(52)   FLOAT,
000025        DISPATCH_COUNT        POSITION(60)   FLOAT,
000026        DISPATCH_COUNT_SSQ    POSITION(68)   FLOAT,
000027        DISPATCH_TIME         POSITION(76)   FLOAT,
000028        DISPATCH_TIME_SSQ     POSITION(84)   FLOAT,
000029        CPU_COUNT             POSITION(92)   FLOAT,
000030        CPU_COUNT_SSQ         POSITION(100)  FLOAT,
000031        CPU_TIME              POSITION(108)  FLOAT,
000032        CPU_TIME_SSQ          POSITION(116)  FLOAT,
000033        SUSPEND_COUNT         POSITION(124)  FLOAT,
000034        SUSPEND_COUNT_SSQ     POSITION(132)  FLOAT,
000035        SUSPEND_TIME          POSITION(140)  FLOAT,
000036        SUSPEND_TIME_SSQ      POSITION(148)  FLOAT,
000037        DISPWAIT_COUNT        POSITION(156)  FLOAT,
000038        DISPWAIT_COUNT_SSQ    POSITION(164)  FLOAT,
000039        DISPWAIT_TIME         POSITION(172)  FLOAT,
000040        DISPWAIT_TIME_SSQ     POSITION(180)  FLOAT,
000041        FCWAIT_COUNT          POSITION(188)  FLOAT,
000042        FCWAIT_COUNT_SSQ      POSITION(196)  FLOAT,
000043        FCWAIT_TIME           POSITION(204)  FLOAT,
000044        FCWAIT_TIME_SSQ       POSITION(212)  FLOAT,
000045        IRWAIT_COUNT          POSITION(220)  FLOAT,
000046        IRWAIT_COUNT_SSQ      POSITION(228)  FLOAT,
000047        IRWAIT_TIME           POSITION(236)  FLOAT,
000048        IRWAIT_TIME_SSQ       POSITION(244)  FLOAT,
000049        SC24UHWM_COUNT        POSITION(252)  FLOAT,
000050        SC24UHWM_COUNT_SSQ    POSITION(260)  FLOAT,
000051        SC31UHWM_COUNT        POSITION(268)  FLOAT,
000052        SC31UHWM_COUNT_SSQ    POSITION(276)  FLOAT,
000053        TSWAIT_COUNT          POSITION(284)  FLOAT,
000054        TSWAIT_COUNT_SSQ      POSITION(292)  FLOAT,
000055        TSWAIT_TIME           POSITION(300)  FLOAT,
000056        TSWAIT_TIME_SSQ       POSITION(308)  FLOAT
000057 )
****** *************************** Bottom of Data ***************************
```

Figure 300. Edit JCL for HDB Export: Load DB2 table

Review the job output in SDSF to verify that the table was created successfully.

Analyzing the DB2 data

After HDB data has been loaded into DB2, you can use you favorite DB2 query tool to analyze the data. Refer to Chapter 19, "Analyzing HDB DB2 Export data," on page 659 for examples of how to use QMF™ SQL queries to analyze the data.

Extracting Performance HDB data to CSV

After you have loaded data into an HDB it is then eligible for extract to CSV data sets.

Select option 6 **Extract** from the HDB menu to request an HDB extract..

```
   File  Options  Help
 -------------------------------------------------------------------------------
                             Extract HDBs                     Row 1 to 1 of 1
 Command ===> _____  Scroll ===> CSR_

 Select to run report.

    Name     Type              Description                 Changed        ID
 S CICSP1H  SUMMARY   Summary HDB for CICSP1           2004/12/07 09:28 JCH
 ****************************** End of list ******************************

  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 301. HDB Extract

Select the required HDB from the list to display the Run Extract panel.

```
                 Run SUMMARY HDB Extract - CICSP1H
  Command ===> _____

  Specify Extract request options then press Enter to continue submit.

  ----- Report Interval ------   HDB contains data
       YYYY/MM/DD  HH:MM:SS.TH   in the range:
  From 2004/12/15  _____    2004/11/17 05:17    Extract Recap:
  To   2004/12/16  _____    2005/01/17 21:31    DDname . . . HXTS0001

  Output Data Set:
   Data Set Name . . HDB.EXTRACT_____
   Disposition . . . 1  1. OLD   2. MOD    (If cataloged)

  Extract Format:                          Enter "/" to select option
   Form . . . . . . _____ +              /   Include Field Labels
   Delimiter . . . .;                      _   Numeric Fields in Float format

  Processing Options:                      Enter "/" to select option
   Time Interval . . 01:00:00  (hh:mm:ss)  /  Edit JCL before submit

   F1=Help     F3=Exit     F4=Prompt   F6=Resize  F12=Cancel
```

Figure 302. Run Summary HDB Extract

The options are:

Report Interval

Specify the reporting time range. You can specify an explicit date, such as 2004/12/15, or a relative date to indicate today (0), yesterday (-1), two days

ago (-2), and so on. Adjacent is the time range of data contained in this HDB. If you specify a Report Interval, then it must be within this range otherwise the extract request will fail.

Extract Recap DDname

The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **HXTS0001.**

This option generates the `OUTPUT(ddname)` operand.

Output Data Set

The name of the data set where the extract records are written. When specifying the data set name, standard TSO conventions apply.

If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

CICS PA generates the `DDNAME(ddname)` operand and assigns a default DDname **HDBX0001.**

Disposition

This option applies if the extract data set you specified is already cataloged.

Select option **1 - OLD** to overwrite the data set contents with the new extract data.

Select option **2 - MOD** to append the new extract data.

Report Form

Specify a Report Form to tailor the format of the extract records. If you do not specify a Form, CICS PA will write all the fields in the HDB in order.

Delimiter

Specify the field delimiter to be used to separate each data field in the extract data set. The default is a semicolon and generates the `DELIMIT(';')` operand.

Include Field Labels

Select this option to indicate that the first record to be written to the extract data set is to be a field labels record. This is the default and generates the `LABELS` operand.

Leave blank if you do not want a field labels record written to the extract data set. This generates the `NOLABELS` operand.

Numeric Fields in Float format

Select this option if you want CICS PA to write numeric fields to the extract data set in S390 FLOAT format. This generates the `FLOAT` operand. Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If you do not select this option, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool. This generates the `NOFLOAT` operand.

Time Interval

Specify an optional Time Interval when extracting Summary HDBs. The

> default is the Time Interval used to create the data (as defined in the Template). In our example, Template PRODSUM used to create the HDB data specified 15 minutes.
>
> You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In the example above, the Interval has been changed to 1 hour.

Once you have specified your Extract options, you will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your request details.

If you selected **Edit JCL before submit** then the Extract HDB JCL is displayed in an edit session.

```
EDIT       userid.SPFTEMP2.CNTL                       Columns 00001 00072
Command ===> _____ Scroll ===> CSR_
****** **************************** Top of Data ****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB EXTRACT JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD DISP=SHR,DSN=CPA.V2R1M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REGISTER
000006 //SYSPRINT DD SYSOUT=*
000007//HDBX0001 DD  DSN=userid.HDB.EXTRACT,
000008//             DISP=(OLD)
000009 //* Command Input
000010 //SYSIN DD *
000011 * HDB=CICSP1H
000012 * Description=Summary HDB for CICSP1H
000013         CICSPA SMFSTART(2004/12/15,00:00:00.00),
000014                 SMFSTOP(2004/12/16,00:00:00.00)
000015         CICSPA NOAPPLID,
000016                LINECNT(60),
000017                FORMAT(':','/'),
000018                PRECISION(4),
000019              HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),
000020                OUTPUT(HXTS0001),LABELS,DELIMIT(';'),NOFLOAT,
000021                INTERVAL(01:00:00))
000022 /*
000023 //* HDB Container Data Sets. HDB Report processing does not require
000024 //* these data sets to be included in the JCL as they are dynamically
000025 //* allocated when required. They are included:
000026 //* 1) for your reference
000027 //* 2) to ensure that all required data sets are cataloged
000028 //* 3) to allow DFHSM to recall required data sets up front
000029 //HDB00001 DD DISP=SHR,DSN=userid.CICSP1H.D03219.T092846.HDB
****** ************************** Bottom of Data **************************
```

Figure 303. Edit JCL for Summary HDB Extract

The HDB container data sets are listed at the bottom of the JCL. They are not required here because the CICS PA batch utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to extract records from HDB CICSP1H, write them to the extract data set with DDname HDBX0001, and write the Recap report output to the DDname HXTS0001:

```
HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),OUTPUT(HXTS0001),...)
```

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Extract request will generate an HDB Summary Extract Recap report.

```
 V2R1M0                                      CICS Performance Analyzer
                                            Historical Database Summary
HXTS0001 Printed at  8:29:25  3/15/2005    Data from 15:00:00 12/15/2004 to 00:00:00 12/16/2004                    Page      1


HDBX0001 Extract has completed successfully
         Data Set Name . . . . userid.HDB.EXTRACT
         Record count  . . . .        788
```

Figure 304. HDB Summary Extract Recap report

The extract data set contains records like those in the following example.

```
Start Date;Start Time;MVS;APPLID;Tran;#Tasks;Response Time Avg;Dispatch Time Avg;User CPU Time Avg;Suspend Time
2004/12/15 15:00:00;MV2C  ;IYK3ZAC1;CSHQ  ;    1;55155.62;   .2103;   .0212;55155.41;   .0331;   .0001;
2004/12/15 15:00:00;MV2C  ;IYK3ZAC1;CSNC  ;    1;55159.06;   .3379;   .0041;55158.72;   .0356;   .0001;
2004/12/15 15:00:00;MV2C  ;IYK3ZAC1;CSNE  ;    1;55153.97;   .0881;   .0060;55153.88;   .0042;   .0001;
2004/12/15 18:00:00;MV2C  ;IYK2ZFV1;CEX2  ;    1;50237.83;   .5030;   .2717;50237.33;   .1800;   .0001;
2004/12/15 18:00:00;MV2C  ;IYK2ZFV1;CSHQ  ;    1;50234.95;   .3105;   .0190;50234.64;   .5761;   .0001;
2004/12/15 18:00:00;MV2C  ;IYK2ZFV1;CSNC  ;    1;50393.54;   .4259;   .0058;50393.12;   .0026;   .0001;
2004/12/15 18:00:00;MV2C  ;IYK2ZFV1;CSNE  ;    1;50389.87;   .1321;   .0177;50389.74;   .0074;   .0001;
2004/12/15 18:00:00;MV2C  ;IYK2ZFV2;CEX2  ;    1;50241.24;   .2630;   .1828;50240.98;   .2255;   .0001;
```

Figure 305. HDB Summary Extract record format

Tailoring the HDB extract format

The format of the extract records can be changed by specifying a Report Form. The process for HDB Extract is the same as applying a Report Form to an HDB Report. For more information, see "Tailoring the HDB report format" on page 544.

Analyzing the extract data

After HDB data has been loaded into an extract data set in CSV format, you can use you favorite PC analysis tools, such as Lotus 1-2-3 or Excel, to analyze the data. Refer to Chapter 20, "Analyzing HDB CSV extract data," on page 667 for examples of how to use such tools to analyze the data.

Maintaining Performance HDBs

Select option 7 **Maintenance** from the HDB menu to maintain your HDB environment.

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```
    File  Options  Help
  ----------------------------------------------------------------------------
                               HDB Maintenance                 Row 1 to 1 of 1
  Command ===> _____ Scroll ===> CSR_

  Select to maintain HDB definition and its data sets.

  /  Name     Type              Description              Changed       ID
  S CICSP1H  SUMMARY   Summary HDB for CICSP1           2004/12/07 15:25 JCH
  ******************************* End of list *********************************

   F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 306. HDB Maintenance

Line Actions: The available line actions are:

/	Display the selection list of line actions
E	Edit (maintain) the HDB. See "Maintaining HDB definitions."
S	Select the HDB (same as Edit).
D	Delete the HDB. The HDB Definition will be deleted immediately. The HDB container data sets will be deleted when Housekeeping is next run.
A	Display the HDB Load audit trail. See "HDB Load Audit" on page 647.

Maintaining HDB definitions

Enter line action **S** to select an HDB from the list to edit.

```
    File  Systems  Options  Help
  ----------------------------------------------------------------------------
                                 Maintain HDB                        More: >
  Command ===> _____

  Review and update HDB definition options then press EXIT to save.

  Name . . . . . : CICSP1H  Type SUMMARY  APPLID  CICSP1__ +  Image  _____
  Description  . . Summary HDB for CICSP1_____

  Specify View . . 1  1. Options  2. Data Sets

  HDB Format:                            Selection Criteria:
   Template  . . . PRODSUM_  +              _  Performance

  Data Retention Period:
   Years . . 10_  Months . . ___  Weeks . . ___  Days . . ___  Hours . . ___

  Data Set Allocation Settings:
   DSN Prefix . . . . . . USER_____
   Management class . . . _____     (Blank for default management class)
   Storage class  . . . . _____     (Blank for default storage class)
    Volume serial . . . . _____        (Blank for system default volume)
    Device type . . . . . _____     (Generic unit or device address)
   Data class . . . . . . _____     (Blank for default data class)
    Space Units . . . . . CYLS____     (TRKS, CYLS)
    Primary quantity  . . 20_____      (In above units)
    Secondary quantity    20_____      (In above units)

   F1=Help    F3=Exit    F4=Prompt    F7=Backward    F8=Forward    F10=Actions
  F11=Right  F12=Cancel
```

Figure 307. Maintain HDB definition

Maintaining HDB container data sets

Scroll **Right** (F11) to view the list of container data sets.

```
   File  Systems  Options  Help
 -------------------------------------------------------------------------------
                             Maintain HDB              Row 1 of 1 More: >
 Command ===> _____ Scroll ===> CSR_

 Maintain HDB data sets.

 Name . . . . . : CICSP1H  Type SUMMARY  APPLID  CICSP1__ +  Image  _____
 Description  . . Summary HDB for CICSP1_____

 Specify View . . 2  1. Options  2. Data Sets

 /  Data Set Name                                  Start        Volume
 S  JCH.CICSP1H.D03219.T092846.HDB         2004/12/07 09:00:00  USER01
 ******************************** End of list ********************************


  F1=Help    F3=Exit    F4=Prompt    F7=Backward    F8=Forward    F10=Actions
 F11=Right  F12=Cancel
```

Figure 308. Maintain HDB container data sets

Data set maintenance functions are:

S **Select** a data set to view its details as shown in Figure 309.

B **Browse** the data set using ISPF Browse. See Figure 310 on page 560 for an example of the data set contents.

D **Delete** the data set. Note that only the data set status changes (to Delete Pending). The data set is not physically deleted until Housekeeping is run.

U **Undo** reverses the Delete action.

Display data set details

```
                         HDB Data Set
 Command ===> _____

 Data Set Name  . . : JCH.CICSP1H.D03219.T092846.HDB
 VOLSER . . . . . . : USER01

 Status . . . . . . : Active
 Creation Date  . . : 2004/12/07 21:28:48
 Expiry Date  . . . : 2013/12/07 21:28:48

 Data Start . . . . : 2004/12/07 09:00:00
 Data End . . . . . : 2004/12/07 16:00:00
 Record Count . . . : 54567

  F1=Help    F3=Exit    F6=Resize F12=Cancel
```

Figure 309. View HDB container data set details

Browse data set contents

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```
  ISRBROBA  CPPX.#STAT01.D05060.T231503.HDB           Line 00000000 Col 001 080
    Command ===>                                              Scroll ===> PAGE
******************************* Top of Data ***********************************
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..>LGJ
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..AITM
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..AP_T
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..AP_T
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..AP_T
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APAI
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APBM
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APCO
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APDW
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APEC
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APIC
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..APUR
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..ASYN
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..BAGE
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..BAOF
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..BAOF
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..BR_B
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..BR_B
 2005-02-26-00.00.00CCVT22M FTS1     CCVT22M 620EOD        ....11:04:10005A2..BR_B
```

Figure 310. Browse contents of HDB container data set

Housekeeping

Select option 8 **Housekeeping** from the HDB menu to perform HDB housekeeping.

```
                  HDB Housekeeping
 Command ===> _____

 Register . . : CICSPROD.CICSPA.HDB.REGISTER

 Select one of the following options
 1  1. Submit HDB Housekeeping JCL
    2. Repair HDB Register using VERIFY command

 Enter "/" to select option
 /  Edit JCL before submit

  F1=Help     F3=Exit      F6=Resize    F12=Cancel
```

Figure 311. HDB Housekeeping

HDB Housekeeping performs tasks to re-organize and clean up your HDB environment:

1. **Submit HDB Housekeeping JCL.**

   Run HDB Housekeeping periodically to delete expired HDB data sets and to re-organize the HDB Register.

2. **Repair HDB Register using VERIFY command.**

   The IDCAMS VERIFY command is used to repair the end-of-data-set information in the VSAM Catalog for the HDB Register. Use repair if message IEC161I is being issued repeatedly. This condition is usually caused by a prior HDB dialog or batch request that failed.

Chapter 16. Guided Tour: Statistics HDB

Every aspect of the CICS PA Historical Database is controlled using the ISPF dialog.

This section takes you through the process of defining and using a Statistics HDB.

Setup. Initially, your HDB environment requires a minimal one-time setup. HDB definitions are saved in the HDB Register, a VSAM KSDS. CICS PA automatically defines the Register for you when you first try to use it.

Then the required steps are:

Step 1. **Definition.**

Unlike Performance HDBs, Statistics HDBs do not require a Template, so you can immediately define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data.

Step 2. **Load.**

Loading data into the HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

`HDB(LOAD(...`

CICS PA reads the CICS statistics and server statistics data and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data.

Step 3. **Report.**

Unlike Performance HDBs that are reported in batch, Statistics HDBs are reported in the dialog only.

Step 4. **Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.

b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

Step 5. **Extract.**

Extract allows you to extract HDB data into a CSV (comma separated variable) file, suitable for importing into a PC-based spreadsheet application.

Step 6. **Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets.

Step 7. **Housekeeping.**

HDB housekeeping should be run periodically to cleanup your HDB environment. Housekeeping performs two tasks:

a. Deletes HDB container data sets that have expired or have delete pending.

b. Removes definitions from the HDB Register that are no longer required.

Historical Database Menu

Option 5 **Historical Database** from the CICS PA Primary Option Menu takes you to the Historical Database Menu. The HDB menu is presented in the order that reflects the seven steps to using Statistics HDB.

```
   File   Options   Help
 -------------------------------------------------------------------
                        Historical Database Menu
 Option ===> _____

 1  Templates       Design HDB Templates
 2  Define          Define a new HDB
 3  Load            Load data into the HDBs
 4  Report          Submit HDB report requests
 5  Export          Export HDB data sets to DB2
 6  Extract         Extract HDB data sets to CSV
 7  Maintenance     Maintain HDB definitions and data sets
 8  Housekeeping    Perform HDB housekeeping

 HDB Register . . . 'CICSPROD.CICSPA.HDB.REGISTER'_____   +



   F1=Help      F3=Exit      F4=Prompt    F10=Actions   F12=Cancel
```

Figure 312. Historical Database (HDB) Menu

Specify the HDB Register data set name. Remember that you may want to share this Register with other users. This will ensure that HDB data can be generated once and available to everyone.

HDB Register

Your HDB environment is controlled by the HDB Register. The HDB Register is a VSAM KSDS that acts as a repository for all definitions associated with your HDB environment, such as:
* Templates (Performance HDBs only)
* HDB Definitions
* Selection Criteria (Performance HDBs only)
* Object Lists (Performance HDBs only)
* Container data set information
* Audit information about Load requests

It is recommended that you share the HDB Register with other CICS PA users so that you only need to generate history data once, allowing multiple users to report against it. There is no limit to the number of HDB Registers you can define.

If your HDB Register is not cataloged, the dialog will first prompt you to define it when you select an option from the menu.

Defining a Statistics HDB

Defining a Statistics HDB allows you to collect (load) and report historical CICS statistics and server statistics data. The definition alone does not cause any action by CICS PA.

Select option 2 **Define** from the HDB menu to define a new HDB. Then when prompted, select option 2 to create a Statistics HDB.

```
              New HDB Definition Menu

Select an HDB type then press Enter.
 _   1. Performance - CMF List or Summary
     2. Statistics  - CICS Statistics
```
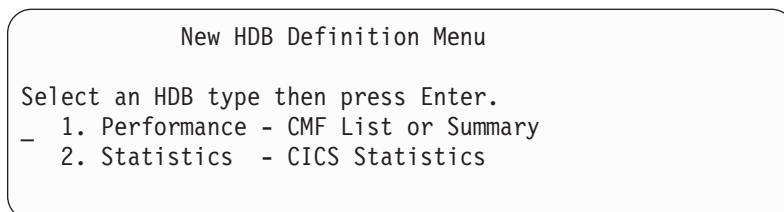
Figure 313. New HDB Definition Menu

In the following example, we have given the HDB a name of CICSP1S and a description of Statistics HDB for CICSP1.

```
   File  Systems  Options  Help
 -----------------------------------------------------------------------------
                            New HDB Definition
 Command ===> _____

 Specify new HDB definition options then press EXIT to save.

 Name . . . . . . CICSP1S_  APPLID  CICSP1__ +  Image MVS1____
 Description  . . Statistics HDB for CICSP1_____

 Statistics Reports:
  _   Select to specify Statistics Reports

 Data Retention Period:
  Years . . 10_   Months . . ___   Weeks . . ___   Days . . ___   Hours . . ___

 Data Set Allocation Settings:
  DSN Prefix . . . . . . CICSPA_____
  Management class . . . _____      (Blank for default management class)
  Storage class  . . . . _____      (Blank for default storage class)
   Volume serial . . . . _____         (Blank for system default volume)
   Device type . . . . . _____      (Generic unit or device address)
  Data class . . . . . . _____      (Blank for default data class)
   Space Units . . . . . CYLS____      (TRKS, CYLS)
   Primary quantity  . . 10_____       (In above units)
   Secondary quantity    10_____       (In above units)

 F1=Help  F3=Exit  F4=Prompt  F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 314. New HDB Definition

The other options are:

APPLID

APPLID is optional and specifies the CICS system that the HDB applies to. You can use **Prompt** (F4) to select from a list of CICS systems defined in your System Definitions.

Specify APPLID to ensure that only data for this CICS system is loaded into the HDB. At Load time, CICS PA will generate JCL that includes this APPLID in the command deck and DD statements for this system's SMF Files.

Data Retention Period

The Data Retention Period specifies how long the HDB container data sets are to be kept. Typically:

- Summary HDBs need to keep their container data sets for many years for long term trend analysis.
- List HDBs used for ad-hoc reporting may only need to keep their container data sets for a couple of hours or days.

Only one Retention Period can be specified: either years, months, weeks, days, or hours. You can leave it blank to ensure data is never expired.

Container data sets are deleted by **HDB Housekeeping** after they have passed their expiry date.

Use **HDB Maintenance** to check container data set status or to alter the retention period.

Data Set Allocation Settings

Data Set Allocation Settings specify the allocation attributes of the data sets that contain data for this HDB. CICS PA dynamically allocates container data sets at load time.

The format of the data set name is *DSN-prefix.HDB-name.Dyyddd.Thhmmss*.**HDB** where the DSN prefix is the data set name high level qualifier.

Specify allocation settings that satisfy your installation requirements. The size of container data sets is not critical. Typically you would specify a size that accommodates a single load request. For example, if you load data into the HDB daily, then 10 cylinders may be sufficient. However if CICS PA encounters an out-of-space condition (ABENDx37) during load, then it simply closes the data set and recommences loading in a new data set. You can decide to specify a larger size initially and adjust it later using **HDB Maintenance.**

Statistics Reports

Statistics HDBs, by default, do not collect any statistics. You must select **Select to specify Statistics Reports** to activate the types of statistics (reports) that you want to collect.

In the following example, we have activated collection for three CICS Dispatcher reports and all four CICS Storage reports.

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------------
                             Statistics Reports                   Line 1 of 25
 Command ===> _____  Scroll ===> CSR_

                                                            DB2
 ___                  ** Reports **                  Collect  Load
      -   ___     Regions                            Yes      No
              ___     Transaction Manager            No       No
          -   ___     CICS Dispatcher                Yes      No
              A__     Dispatcher Overview            Yes      No
              A__     Dispatcher TCB Modes           Yes      No
              A__     Dispatcher TCB Pools           Yes      No
              ___     MVS TCB Overview               No       No
              ___     MVS TCBs                       No       No
          -   A__  CICS Storage                      Yes      No
              ___     Storage Overview               Yes      No
              ___     DSAs                           Yes      No
              ___     Domain Subpools                Yes      No
              ___     Task Subpools                  Yes      No
          +   ___  CICS Dumps                        No       No
              ___     Enqueue Pools                  No       No
      +   ___     Connectivity                       No       No
      +   ___     Files and Databases                No       No
      +   ___     Logging                            No       No
      +   ___     Queues                             No       No
      +   ___     Transactions                       No       No
      +   ___     Programs                           No       No
      +   ___     CICS Web Support                   No       No
      +   ___     Enterprise Java                    No       No
      +   ___     Miscellaneous                      No       No
      +   ___     CICS Server                        No       No
                 ** End of Reports **
```

Figure 315. Activate statistics reports for HDB data collection

When you load a statistics HDB, you can also choose to export the data to DB2.
The DB2 Load column identifies the statistics reports that will be exported.

Exit (F3) to save the collection and DB2 load settings.

Exit (F3) again to save the HDB. You are now ready to use this HDB.

Loading data into a Statistics HDB

After defining the HDB, you can start to collect (load) the historical statistics data.

Select option 3 **Load** from the HDB menu to generate JCL to load an HDB.

```
   File  Options  Help
 ------------------------------------------------------------------------------
                                Load HDBs                        Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to load an HDB.

    Name     Type             Description              Changed          ID
 S CICSP1S  SUMMARY   Summary HDB for CICSP1        2004/12/06 16:02 JCH
 ******************************** End of list ********************************


  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 316. Load HDBs

Select the required HDB from the list to display the Load panel.

```
   File  Systems  Options  Help
 ---------------------------------------------------------------------
                        Load SUMMARY HDB CICSP1S
 Command ===> _____

 Specify HDB load options then press Enter to continue submit.

 System Selection:                    ───── Report Interval ─────
  APPLID . . CICSP1S_  +                    YYYY/MM/DD  HH:MM:SS.TH
  Image  . . _____  +              From 0_____    09:00:00.00
  Group  . . _____  +              To   0_____    16:30:00.00

 DB2 Export Options:                  Table Load Options
 _   Load DB2 Table                   1  1. Resume    2. Replace

 Include Clock Field Components       Summary Options
 1  1. Time and Count                 _   Include Sums of Squares
    2. Time only
    3. Count only                     Enter "/" to select option
                                      /  Edit JCL before submit


  F1=Help     F3=Exit     F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 317. Load Summary HDB

The options are:

System Selection

System Selection specifies the CICS system(s) whose data is to be loaded into the HDB. It is initialized to the CICS system APPLID that you specified during HDB definition.

In the example above, CICS PA generates an `APPLID(CICSP1)` operand in the command deck and includes DD statements for the SMF Files defined in System Definitions for CICSP1.

Report Interval

Specify the time range of data to be included in the HDB. You can specify

an explicit date, such as 2004-12-05, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. In the example above we have used a relative date of zero (0) to indicate that we are processing today's SMF data, from 9:00am to 4:30pm.

Note that EOD statistics are often cut at midnight, so would not be included in this HDB.

It is recommended that you specify relative dates if you want to use an automated job scheduler to run the load HDB JCL regularly. The JCL can be set up once and run daily without needing to change it.

DB2 Export Options

To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL" on page 625. (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined. To define a DB2 table, see "Creating DDL to define a DB2 table" on page 637.

If you select the **Replace** Table Load option, but the HDB load fails, then the result will be an empty DB2 table.

Once you have specified your Load options, you will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your load request.

If you selected **Edit JCL before submit** then the Load HDB JCL is displayed in an edit session. Specify this option if you want to save the JCL in an automated job scheduler JCL library.

```
EDIT       JCH.SPFTEMP1.CNTL                          Columns 00001 00072
Command ===> change '<unresolved>' 'CICSP1.DAILY.CMF(0)'__ Scroll ===> CSR_
****** **************************** Top of Data *****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB LOAD JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
000005 //CPAHDBRG DD  DSN=CICSPROD.CICSPA.HDB.REGISTER,DISP=SHR
000006 //SYSPRINT DD  SYSOUT=*
000007 //* SMF Input Files
000008 //* SMF Files that follow have unresolved DSNs
000009 //* SMF File for System=CICSP1
000010 //SMFIN901 DD DSN=<unresolved>,DISP=SHR
000011 //* Command Input
000012 //SYSIN DD *
000013 * HDB=CICSP1S
000014 * Description=Summary HDB for CICSP1
000015         CICSPA SMFSTART(0,09:00:00.00),
000016                SMFSTOP(0,16:30:00.00)
000017 * HDB Load for System=CICSP1
000018         CICSPA IN(SMFIN901),
000019                APPLID(CICSP1),
000020                LINECNT(60),
000021                FORMAT(':','/'),
000022            HDB(OUTPUT(HDBL0001),LOAD(CICSP1S))
000023 /*
```

Figure 318. Edit JCL for Load Summary HDB

Guided Tour: Statistics HDB

The SMF file data set name for system CICSP1 may be unresolved. This indicates that the System Definition for CICSP1 does not have SMF files specified. Substitute the required SMF file data set name into the JCL.

The command deck specifies operands to load HDB CICSP1S:

```
HDB(OUTPUT(HDBL0001),LOAD(CICSP1S))
```

Enter **SUBmit** in the command line to submit the job to run the load.

Successful completion of the Load request will generate a Recap report like the following example.

```
V2R1M0                                        CICS Performance Analyzer
                                                HDB Load Recap Report

HDBL0001 Printed at 9:28:48 15/03/2005  Data from 09:00:00 15/03/2005 to 16:30:00 15/03/2005                    Page  1

LOAD requested for HDB: CICSP1S    Register DSN: CICSPROD.CICSPA.HDB.REGISTER

The following Container(s) were created and loaded:
  Container DSN: CICSPA.CICSP1S.D03219.T092846.HDB            No of Records: 54,567
    Start Time Stamp: 2005-03-15-09.00.00        End Time Stamp: 2005-03-15-16.00.00

LOAD process complete.
```

Figure 319. HDB Load Recap report

The Recap report provides a list of the Container data sets created by the Load process. In this example, CICS PA created Container data set CICSPA.CICSP1S.D03219.T092846.HDB. It contains 54,567 records for the period 9:00am to 4:00pm on March 15, 2005.

HDB Load Audit

HDB load requests create an audit record that includes:
- Date/time range of the data used to create the containers
- Status indicator, OK or Failed

The purpose of the HDB Load Audit is two-fold:
- Verify that all load requests have completed successfully
- Highlight gaps in the data due to Load requests not being run

The audit records can be viewed and maintained from the dialog. For more information, see "HDB Load Audit" on page 647.

Statistics HDB Reporting

After you have loaded data into an HDB it is then eligible for reporting.

Select option 4 **Report** from the HDB menu to interactively process statistics reports. Note that, unlike Performance HDBs that are reported in batch, Statistics HDBs are reported in the dialog only.

```
  File  Options  Help
 --------------------------------------------------------------------------------
                                Report HDBs                      Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to run report.

    Name     Type            Description               Changed         ID
 S CICSP1S  STATS    Statistics HDB for CICSP1        2005/03/16 12:23 JCH
 ******************************** End of list *******************************
```

Figure 320. Select a Statistics HDB for reporting

Select the required HDB from the list to display the Run Report panel, as shown in the following example.

```
  File  Options  Help
 --------------------------------------------------------------------------------
                       Run STATS HDB Report - CICSP1S       Row 1 to 3 of 3
 Command ===> _____ Scroll ===> PAGE

  Specify run options then press Enter.

 Select data sets by:              Report Interval        HDB contains data
  2  1. Report Interval            YYYY/MM/DD  HH:MM:SS.TH  in the range:
     2. Data Set Name        From  −1_____   10:00:00.00 2005/03/15 07:00:00
                             To    0_____    10:00:00.00 2005/03/16 11:00:00

    Data Set Name                               ------ Start ------  Volume
 S CICSPA.CICSP1.D05074.T102306.HDB             2005/03/15 07:00:00  USER05
 S CICSPA.CICSP1.D05074.T152311.HDB             2005/03/15 14:00:00  USER05
 S CICSPA.CICSP1.D05075.T042316.HDB             2005/03/16 02:00:00  USER05
 **************************** Bottom of data *******************************
```

Figure 321. Run Statistics HDB Report

The list of container data sets is displayed. You can select report data by either:

1. Specifying a Report Interval, in which case, CICS PA will automatically select the required container data sets.
2. Explicitly selecting the required container data sets as shown in the example above.

The list of statistics intervals is then displayed.

Guided Tour: Statistics HDB

```
 File  Edit  Filter  Options  Help
 -------------------------------------------------------------------------------
 REPORT                          Statistics Intervals              Row 1 from 12
 Command ===> _____ Scroll ===> CSR_

 Select the required CICS Statistics interval.

 /    System   Image  VRM  Type   --- Collection Time ---    Reset     Duration
 _    CICSP1   MVS1   640  USS    2005/03/15 07:00:00 Tue  06:00:00
 _    CICSP1   MVS1   640  USS    2005/03/15 08:00:00 Tue  07:00:00
 S    CICSP1   MVS1   640  EOD    2005/03/15 09:00:00 Tue  08:00:00
 P    CICSP1   MVS1   640  EOD    2005/03/15 10:00:00 Tue  09:00:00
 _    CICSP1   MVS1   640  INT    2005/03/15 11:00:00 Tue  10:00:00  01:00:00
 _    CICSP1   MVS1   640  USS    2005/03/15 12:00:00 Tue  11:00:00
 _    CICSP1   MVS1   640  USS    2005/03/15 13:00:00 Tue  12:00:00
 _    CICSP1   MVS1   640  USS    2005/03/15 14:00:00 Tue  13:00:00
 _    CICSP1   MVS1   640  INT    2005/03/15 15:00:00 Tue  14:00:00  01:00:00
 _    CICSP1   MVS1   640  INT    2005/03/16 07:00:00 Wed  06:00:00  01:00:00
 _    CICSP1   MVS1   640  USS    2005/03/16 08:00:00 Wed  07:00:00
 _    CICSP1   MVS1   640  INT    2005/03/16 09:00:00 Wed  08:00:00  01:00:00
 **************************** Bottom of data *******************************
```

Figure 322. Select a statistics interval

Select one or more intervals to view the reports.

For Statistics HDBs, only reports for which data is collected (at Load time) can be viewed. That is, if Size is greater than 0.

```
 File  Edit  Options  Help
 ------------------------------------------------------------------------------
 REPORT                          Statistics Reports                 Line 1 of 25
 Command ===>_____ Scroll ===> CSR_

 System: CICSP1/MVS1      Type: EOD  Interval: 2005/03/15 09:00:00 Tuesday
 ___          ** Reports **                            Size
     -   ___    Regions                                 381
            ___    Transaction Manager                    0
        -   ___    CICS Dispatcher                        23
               ___    Dispatcher Overview                  1
               ___    Dispatcher TCB Modes                18
               ___    Dispatcher TCB Pools                 4
               ___    MVS TCB Overview                     0
               ___    MVS TCBs                             0
        -   ___    CICS Storage                           358
               ___    Storage Overview                     1
               S__    DSAs                                 8
               ___    Domain Subpools                     345
               ___    Task Subpools                        4
        +   ___    CICS Dumps                              0
            ___    Enqueue Pools                           0
     +   ___    Connectivity                               0
     +   ___    Files and Databases                        0
     +   ___    Logging                                    0
     +   ___    Queues                                     0
     +   ___    Transactions                               0
     +   ___    Programs                                   0
     +   ___    CICS Web Support                           0
     +   ___    Enterprise Java                            0
     +   ___    Miscellaneous                              0
     +   ___    CICS Server                                0
            ** End of Reports **
```

Figure 323. Select a statistics report: DSAs

In this example, we selected to view the DSAs report.

Initially, all the information contained in the DSAs statistics record is reported.

You can change this using a Form which is discussed in the following sections. See "Forms" on page 574.

Guided Tour: Statistics HDB

```
    File   Edit   Form   Options   Help
  --------------------------------------------------------------------------------
  REPORT    DSAs                                       Line 00000001 Col 002 008   >
  Command ===> _____ Scroll ===> CSR_

  System: IYCWLMS2/MV2C     Type: EOD  Interval: 2004/12/16 11:23:58 Thursday


                                            Current      Peak     Current
  DSA       DSA                     DSA        DSA        DSA      Cushion
  Name      Location  Access      Index       Size       Size        Size
  --------  --------  --------   --------  ----------  ----------  ----------
  CDSA      BELOW     CICS            1         512K        512K         64K
  UDSA      BELOW     USER            2        1024K       1024K         64K
  SDSA      BELOW     USER            3         256K        256K         64K
  RDSA      BELOW     READONLY        4         512K        512K         64K
  ECDSA     ABOVE     CICS            5       16384K      16384K        128K
  EUDSA     ABOVE     USER            6       46080K      46080K          0K
  ESDSA     ABOVE     USER            7        1024K       1024K        128K
  ERDSA     ABOVE     READONLY        8       20480K      20480K        256K
```

Figure 324. Statistics report: DSAs

Scroll **Right** (F11) and **Left** (F10) to view all the columns in the report.

Statistics reporting has several features that help you tailor the display to meet your needs. The following sections introduce these features.

Sorting

Position the cursor on the heading separator line immediately below the column you want to sort and press Enter. The report is sorted by that column in ascending sequence. Press Enter again to sort in descending sequence.

The following example is sorted in descending Peak DSA Size sequence.

```
   File  Edit  Form  Options  Help
 --------------------------------------------------------------------------------
 REPORT    DSAs                                      Line 00000001 Col 002 008   >
 Command ===> _____    Scroll ===> CSR_

 System: IYCWLMS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday


                                        Current        Peak      Current
 DSA       DSA                    DSA       DSA         DSA       Cushion
 Name      Location  Access     Index      Size        Size         Size
 --------  --------  --------  --------  ----------  ----------  ----------
 EUDSA     ABOVE     USER             6     46080K      46080K          0K
 ERDSA     ABOVE     READONLY         8     20480K      20480K        256K
 ECDSA     ABOVE     CICS             5     16384K      16384K        128K
 UDSA      BELOW     USER             2      1024K       1024K         64K
 ESDSA     ABOVE     USER             7      1024K       1024K        128K
 CDSA      BELOW     CICS             1       512K        512K         64K
 RDSA      BELOW     READONLY         4       512K        512K         64K
 SDSA      BELOW     USER             3       256K        256K         64K
```

Figure 325. Statistics report: sort on Peak DSA Size (descending)

Forms

Statistics Report Forms allow you to tailor the report so that only information you want to see is displayed.

Use the **FORM** primary command, **Form** in the action bar, or press **F6** to display the Form for the current report.

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------
 FORM     DSAs                                           Line 1 of 28
 Command ===> _____  Scroll ===> CSR_

                                              ------ Width ------
 /  Heading                             Usage Column   Max Report
 _  DSA Name                            FIX__           8      8
 _  Peak DSA Size                       FIX__          10     20
 _  DSA Location                        OMIT_           0
 _  Access                              OMIT_           0
 _  DSA Index                           OMIT_           0
 _  Current DSA Size                    OMIT_           0
 _  Current Cushion Size                OMIT_           0
 _  GETMAIN Requests                    _____          10     32
 _  FREEMAIN Requests                   _____          10     44
 _  Current Extents                     OMIT_           0
 _  Extents Added                       _____          10     56
 _  Extents Released                    _____          10     68
 _  ADD SUBPOOL Requests                _____          10     80
 _  DELETE SUBPOOL Requests             _____          10     92
 _  GETMAINs No Storage Returned        _____          10    104
 _  GETMAINs Suspended                  _____          10    116
 _  Current Suspended                   _____          10    128
 _  Peak Requests Suspended             _____          10    140
 _  Requests Purged Waiting Storage     _____          10    152
 _  Cushion Releases                    _____          10    164
 _  Short-on-Storage Count              _____          16    182
 _  Short-on-Storage Total Time         _____          19    203
 _  Current Subpools                    _____          10    215
 _  Free Storage                        _____          10    227
 _  Peak Free Storage                   _____          10    239
 _  Lowest Free Storage                 _____          10    251
 _  Largest Free Area                   _____          10    263
 _  Storage Violations                  _____          10    275
 ******************************* End of Form *******************************
```

Figure 326. Statistics Report Form

In this example, one additional field is fixed (Peak DSA Size), several fields have been omitted, and two (Extents) fields moved to the top.

Press Exit (F3) to save and activate the Form.

The report is modified to display only the columns requested in the Form.

```
   File  Edit  Form  Options  Help
 --------------------------------------------------------------------------------
 REPORT    DSAs                                    Line 00000001 Col 003 007   >
 Command ===> _____ Scroll ===> CSR_

 System: IYCWLMS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday


             Peak
 DSA          DSA      GETMAIN     FREEMAIN     Extents      Extents
 Name        Size      Requests    Requests     Added        Released
 --------  ----------  ----------  ----------  ----------  ----------
 CDSA           512K        1062        1002           2           0
 UDSA          1024K         207         207           1           0
 SDSA           256K           1           0           1           0
 RDSA           512K          19           2           2           0
 ECDSA        16384K       33880       19766          16           0
 EUDSA        46080K         752         748          45           0
 ESDSA         1024K           6           6           1           0
 ERDSA        20480K         412           7          13           0
```

Figure 327. Statistics report: FORM ON

You can enter the **FORM OFF** command to view the default report format, then
enter **FORM ON** to reapply the Form.

Hyperlink

Hyperlinks allow you to link to other statistics reports related to the current report. Certain fields in some statistics reports are hyperlink fields. Hyperlink fields are point-and-shoot fields.

Note: Ensure that your ISPF Settings distinguish point-and-shoot fields (see "CUA attribute settings" on page 25) and that you can Tab to them (see "Point-and-Shoot fields" on page 25).

In our DSAs report in Figure 327 on page 575, the DSA Name field is a hyperlink field. Tab to ESDSA and press Enter to hyperlink to the report of Domain Subpools belonging to ESDSA.

```
  File  Edit  Form  Options  Help
 -------------------------------------------------------------------------------
 REPORT    Domain Subpools                        Line 00000001 Col 002 008   >
 Command ===> _____  Scroll ===> CSR_

 System: IYCWLMS2/MV2C      Type: EOD  Interval: 2004/12/16 11:23:58 Thursday


 Subpool   DSA       Element       Fixed Element        Element
 Name      Name      Type         Length Chaining      Boundary  Location  Acces
 --------  --------  --------  ---------- --------  ----------  --------  -----
 IE_BUFF   ESDSA     VARIABLE           0 NO                16  ABOVE     USER
 IIBUFFER  ESDSA     VARIABLE           0 NO                16  ABOVE     USER
 LDEPGM    ESDSA     VARIABLE           0 NO                16  ABOVE     USER
 LDERES    ESDSA     VARIABLE           0 NO                16  ABOVE     USER
 SJSJPTE   ESDSA     FIXED            408 NO                 8  ABOVE     USER
 SJSJSTK   ESDSA     FIXED              8 NO                 8  ABOVE     USER
 SJSJTCB   ESDSA     FIXED           1336 NO                 8  ABOVE     USER
 SJSJVMS   ESDSA     FIXED           2200 NO                 8  ABOVE     USER
 SJUSERKY  ESDSA     VARIABLE           0 NO                16  ABOVE     USER
 SMSHRU31  ESDSA     VARIABLE           0 YES               16  ABOVE     USER
 WEBINB    ESDSA     FIXED          32768 YES                8  ABOVE     USER
```

Figure 328. Statistics report: Hyperlink

The hyperlink report is a subset of the complete report, filtered by the hyperlink field value, which in this example is ESDSA.

Exit (F3) to return to the previous report.

Statistics Field Help

Extensive help is available for each column in the report. Press **Help** (F1) when the cursor is positioned in the body of the report to display help for the report fields.

```
                 Field Descriptions for Statistics Report

 Category  : Regions                              Macro . . : DFHSMSDS
 Report  . : DSAs                                 DSECT . . : SMSBODY
 -------------------------------------------------------------------------------
                                                                 More:     +
 DSA Name

 CICS field name: SMSDSANAME           DB2 column name: DSA_NAME

 The name of the DSA that this record represents.
 Values can be: CDSA, UDSA, SDSA, RDSA, ECDSA, EUDSA, ESDSA, or ERDSA.

 Reset characteristic: Not reset
 -------------------------------------------------------------------------------

 DSA Location

 CICS field name: SMSLOCN              DB2 column name: LOCATION

 The location of the DSA, either ABOVE or BELOW the 16MB line.
 -------------------------------------------------------------------------------

 Access

 CICS field name: SMSACCESS            DB2 column name: ACCESS

 The type of access of the DSA, either:
 CICS        Access is CICS key
 USER        Access is USER key
 READONLY    Read-only protection

 If storage protection is not active, all storage areas will revert to CICS
 except those in the ERDSA.

 Reset characteristic: Not reset
 -------------------------------------------------------------------------------
```

Figure 329. Statistics report: Field Help

Field Help is also available from the Extended Help (F1 from the command line). Tab to **Field Descriptions** and press F1.

Note that the DB2 column names are also shown. These are used by CICS PA when exporting data to DB2.

Print

All statistics reports can be printed to a DASD data set or SYSOUT file. The **P** line action is available from both the list of Statistics Intervals panel (where the entire interval can be printed) or the list of Statistics Reports panel (where individual categories and reports can be printed). In this example, the report will be printed to a data set, and then browsed.

```
                       Print Statistics Report
Command ===> _____

Specify Statistics Report print options.

Report Destination:
1  1. Data Set   2. SYSOUT

Output Data Set:
 Data Set Name . . 'JCH.CICSP1.STATS.REPORT'_____
 Disposition . . . 1  1. OLD   2. MOD    (If cataloged)

 Enter "/" to select option
 /  Browse output data set

Report Output:
 SYSOUT Class  . . A    Print Lines per Page . . 60_  (0-255)
```

Figure 330. Statistics report: Print

Browsing the data set provides an alternative way of viewing the same report, as shown in the following example.

```
  BROWSE    JCH.CICSP1.STATS.REPORT                Line 00000000 Col 001 080
   Command ===>                                           Scroll ===> PAGE
******************************* Top of Data ********************************

 V1R4M0                                          CICS Performance Analyzer
                                                 CICS Statistics - DSAs
                                               _____
 System: IYCWLMS2/MV2C     Type: EOD  Interval: 2004/12/16 11:23:58 Thursday

                                      Current      Peak     Current
 DSA        DSA                DSA        DSA       DSA      Cushion      G
 Name       Location  Access   Index     Size      Size       Size      Re
 _____     _____   _____  _____  _____  _____  _____    ___
 CDSA       BELOW     CICS         1      512K      512K        64K
 UDSA       BELOW     CICS         2      256K      256K        64K
 SDSA       BELOW     CICS         3      256K      256K        64K
 RDSA       BELOW     READONLY     4      512K      512K        64K
 ECDSA      ABOVE     CICS         5     5120K     5120K       128K
 EUDSA      ABOVE     CICS         6     1024K     1024K         0K
 ESDSA      ABOVE     CICS         7        0K        0K         0K
 ERDSA      ABOVE     READONLY     8    18432K    18432K       256K
 ****************************** Bottom of Data ******************************
```

Figure 331. Statistics report: Browse print data set

When a report is printed, it can be viewed as an output file attached to your current TSO session, using SDSF for example. Note that when you print a report, the active Form is honored.

Exporting Statistics HDB data to DB2

Select option 5 **Export** from the HDB menu to export HDB data into DB2.

Unlike Performance HDBs, Statistics HDBs do not have a common record format. The records for each statistics report (or type, as identified by its CICS domain and statistics ID) have a different record format. Therefore one DB2 table must be defined for each type of statistics record to be exported.

```
   File  Options  Help
 ------------------------------------------------------------------------------
                              Export HDBs                      Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to export HDB to DB2.

   Name     Type              Description                 Changed       ID
 S CICSP1S  STATS     Statistics HDB for CICSP1        2005/03/16 12:23 JCH
 ****************************** End of list ******************************


   F1=Help      F3=Exit      F5=Rfind     F7=Backward  F8=Forward  F10=Actions
  F12=Cancel
```

Figure 332. Exporting Statistics HDBs

In this example, we have selected our statistics HDB for exporting to DB2.

Select the required HDB to display its list of container data sets.

```
   File  Options  Help
 ------------------------------------------------------------------------------
                        Export STATS HDB - CICSP1S            Row 1 to 2 of 2
   Command ===> _____ Scroll ===> PAGE

   Select to export HDB data sets to DB2.

   HDB Name . . : CICSP1S    Type . . : STATS

      Data Set Name                           ------ Start ------  Volume
   _  S CICSPA.CICSP1.D05074.T102306.HDB      2005/03/15 07:00:00  USER05
   _  S̄ CICSPA.CICSP1.D05074.T152311.HDB      2005/03/15 14:00:00  USER05
   _  S̄ CICSPA.CICSP1.D05075.T042316.HDB      2005/03/16 02:00:00  USER05
   **************************** Bottom of data ****************************
```

Figure 333. Export Statistics HDB

The list of statistics reports is displayed.

Guided Tour: Statistics HDB

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------------
 EXPORT                          Statistics Reports                   Line 1 of 25
 Command ===> _____ Scroll ===> CSR_

 Select reports to export to DB2.
                                                                    DB2
 ___           ** Reports **                            Collect  Load
     -   ___   Regions                                    Yes     No     .
             ___   Transaction Manager                    Yes     No
         -   ___   CICS Dispatcher                        Yes     No
                 ___   Dispatcher Overview                Yes     No
                 ___   Dispatcher TCB Modes               Yes     No
                 ___   Dispatcher TCB Pools               Yes     No
                 ___   MVS TCB Overview                   Yes     No
                 ___   MVS TCBs                           Yes     No
         -   ___   CICS Storage                           Yes     No
                 ___   Storage Overview                   Yes     No
                 S__   DSAs                                Yes     No
                 ___   Domain Subpools                    Yes     No
                 ___   Task Subpools                      Yes     No
         +   ___   CICS Dumps                             Yes     No
             ___   Enqueue Pools                          Yes     No
     +   ___   Connectivity                               No      No
     +   ___   Files and Databases                        No      No
     +   ___   Logging                                    No      No
     +   ___   Queues                                     No      No
     +   ___   Transactions                               No      No
     +   ___   Programs                                   No      No
     +   ___   CICS Web Support                           No      No
     +   ___   Enterprise Java                            No      No
     +   ___   Miscellaneous                              No      No
     +   ___   CICS Server                                No      No
             ** End of Reports **
```

Figure 334. Select Statistics reports for export to DB2

Enter line action **S** to select the reports that you want to export to DB2.

Only the reports that you select will be exported to DB2. The DB2 Load column is ignored: this column is only used when loading the HDB with the Load DB2 Table option selected.

In the following example, we have selected the DSAs report.

Step 1. Create the DB2 table

Exporting HDB data into DB2 is a two step process. The first step creates the DB2 table.

```
  File  Options  Help
 ---------------------------------------------------------------------
                          Export HDB Data Set
 Command ===> _____

 Select option
 1  1. Create DDL to define table       2. Load data into table

 Create Options                          Load Options
 _   Create Database                     1  1. Resume
 _   Create Storage Group                   2. Replace

 DB2 Settings:
  DB2 Subsystem ID . . . DB2P
  DSNTIAD Plan Name  . . DSNTIA71
  DB2 Load Library . . . 'DB2.V710.SDSNLOAD'_____
  DB2 Exit Library . . . 'DB2.V710.SDSNEXIT'_____
  DB2 RUNLIB Library . . 'DB2.V710.RUNLIB.LOAD'_____
  Database . . . . . . . CICSPA__   Storage Group  . . PROD____
  VCAT Catalog name  . . USER____
  Allocation: Primary    20_____   Secondary  . . . . 20____
```

Figure 335. Export Step 1. Create DB2 table

Select option 1 **Create DDL to define table.**

The create table JCL is generated and displayed in an edit session for review and submission.

Guided Tour: Statistics HDB

```
EDIT       JCH.SPFTEMP3.CNTL                          Columns 00001 00072
Command ===> SUB_____ Scroll ===> PAGE
****** ************************** Top of Data ***************************
000001 //JCH#CPA JOB ,NNOTIFY=&SYSUID
000002 //* CICSPA V1R4 HDB - DDL TO DEFINE DB2 TABLE
000003 //RUNTIAD EXEC PGM=IKJEFT01,DYNAMNBR=20
000004 //SYSTSPRT DD SYSOUT=*
000005 //SYSTSIN  DD *
000006  DSN SYSTEM(DB2P)
000007  RUN PROGRAM(DSNTIAD) LIB('DB2.V710.RUNLIB.LOAD') PLAN(DSNTIA71)
000008 /*
000009 //SYSPRINT DD SYSOUT=*
000010 //SYSUDUMP DD SYSOUT=*
000011 //SYSIN    DD *
000012    CREATE TABLESPACE #180203
000013          IN        CICSPA
000014          LOCKSIZE  ANY
000015          BUFFERPOOL BP0
000016          CLOSE     NO
000017          SEGSIZE   32
000018          USING     STOGROUP PROD
000019          PRIQTY    20
000020          SECQTY    20
000021          ERASE     NO;
000022
000023    CREATE TABLE CICSPA.HST002B (
000024        START_DATE            DATE,
000025        START_TIME            TIME,
000026        APPLID                CHAR(8),
000027        MVSID                 CHAR(4),
000028        DSA_NAME              CHAR(8),
000029        DSA_LOCATION          CHAR(8),
000030        ACCESS                CHAR(8),
000031        DSA_INDEX             CHAR,
```

Figure 336. Edit JCL to create DB2 table

Note the DB2 table name "CICSPA.HST002B". This name reflects the statistics ID of the selected report, in this case 002 for DSAs. The B suffix is appended to distinguish this report from the Storage Overview report that shares the same 002 ID

You can change this name to something more meaningful, for example CICSPA.CICSP1_DSAS.

Submit the JCL to create the table.

Step 2. Load the DB2 table

The second step loads the DB2 table.

```
  File  Options  Help
 --------------------------------------------------------------------
                        Export HDB Data Set
Command ===> _____

Select option
2  1. Create DDL to define table      2. Load data into table

Create Options                        Load Options
_   Create Database                   1  1. Resume
_   Create Storage Group                 2. Replace

DB2 Settings:
 DB2 Subsystem ID . . . DB2P
 DSNTIAD Plan Name  . . DSNTIA71
 DB2 Load Library . . . 'DB2.V710.SDSNLOAD'_____
 DB2 Exit Library . . . 'DB2.V710.SDSNEXIT'_____
 DB2 RUNLIB Library . . 'DB2.V710.RUNLIB.LOAD'_____
 Database . . . . . . . CICSPA__  Storage Group  . . PROD____
 VCAT Catalog name  . . USER____
 Allocation: Primary    20_____   Secondary  . . . . 20____
```

Figure 337. Export Step 2. Load DB2 table

Select option 2 **Load data into table.**

The load table JCL is generated and displayed in an edit session for review and submission.

Guided Tour: Statistics HDB

```
EDIT       JCH.SPFTEMP3.CNTL                            Columns 00001 00072
Command ===> SUB_____ Scroll ===> PAGE
****** *************************** Top of Data ****************************
000001 //JCH#CPA JOB ,NOTIFY=&SYSUID
000002 //* CICSPA V1R4 HDB - LOAD DATA INTO DB2 TABLE
000003 //DSNUPROC EXEC PGM=DSNUTILB,REGION=0M,
000004 //         PARM='DB2P'
000005 //STEPLIB  DD  DISP=SHR,DSN=DB2.V710.SDSNLOAD
000006 //         DD  DISP=SHR,DSN=DB2.V710.SDSNEXIT
000007 //SYSPRINT DD  SYSOUT=*
000008 //UTPRINT  DD  SYSOUT=*
000009 //SYSUDUMP DD  SYSOUT=*
000010 //SYSREC   DD  DSN=SKU.#180203.D05049.T182306.HDB,
000011 //             DISP=SHR
000012 //         DD  DSN=SKU.#180203.D05049.T182311.HDB,
000013 //             DISP=SHR
000014 //         DD  DSN=SKU.#180203.D05049.T182316.HDB,
000015 //             DISP=SHR
000016 //SYSUT1   DD  UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
000017 //SORTOUT  DD  UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
000018 //SYSIN    DD  *
000019 LOAD DATA RESUME YES
000020    INTO TABLE CICSPA.HST002B WHEN (70) = '002B' (
000021        START_DATE          POSITION(1)     DATE EXTERNAL(10),
000022        START_TIME          POSITION(12)    TIME EXTERNAL(8),
000023        APPLID              POSITION(20)    CHAR(8),
000024        MVSID               POSITION(28)    CHAR(4),
000025        DSA_NAME            POSITION(77)    CHAR(8),
000026        DSA_LOCATION        POSITION(85)    CHAR(8),
000027        ACCESS              POSITION(93)    CHAR(8),
000028        DSA_INDEX           POSITION(101)   CHAR,
000029        DSA_SIZE_CUR        POSITION(102)   INTEGER,
000030        DSA_SIZE_PEAK       POSITION(106)   INTEGER,
000031        CUSHION_SIZE        POSITION(110)   INTEGER,
000032        GETMAIN_REQUESTS    POSITION(114)   INTEGER,
. . .
```

Figure 338. Edit JCL to load DB2 table

Extracting Statistics HDB data to CSV

Select option 6 **Extract** from the HDB menu to request an HDB extract.

The HDB Extract facility allows you to export data from your HDB data sets to an Extract data set in CSV format, suitable as input into PC-based spreadsheet applications.

In this example, we have selected our statistics HDB for extracting to CSV.

```
  File  Options  Help
 --------------------------------------------------------------------------
                             Extract HDBs                    Row 1 to 1 of 1
 Command ===> _____   Scroll ===> CSR_

 Select to extract HDB.

    Name     Type              Description              Changed        ID
 S CICSP1S  STATS    Statistics HDB for CICSP1      2005/03/16 12:23 JCH
 ***************************** Bottom of data ********************************
```

Figure 339. HDB Extract

The list of statistics reports is displayed. Select the reports that you want to extract to CSV.

Guided Tour: Statistics HDB

```
   File  Edit  Options  Help
 -------------------------------------------------------------------------------
 EXPORT                          Statistics Reports                   Line 1 of 25
 Command ===> _____ Scroll ===> CSR_

 Select reports to export to DB2.
                                                                 DB2
 ___              ** Reports **                         Collect  Load
      -   ___     Regions                                 Yes      No     .
              ___     Transaction Manager                 Yes      No
          -   ___     CICS Dispatcher                      Yes      No
                  ___     Dispatcher Overview              Yes      No
                  ___     Dispatcher TCB Modes             Yes      No
                  ___     Dispatcher TCB Pools             Yes      No
                  ___     MVS TCB Overview                 Yes      No
                  ___     MVS TCBs                         Yes      No
          -   ___     CICS Storage                         Yes      No
                  ___     Storage Overview                 Yes      No
                  S__     DSAs                             Yes      No
                  ___     Domain Subpools                  Yes      No
                  ___     Task Subpools                    Yes      No
          +   ___     CICS Dumps                           Yes      No
                  ___     Enqueue Pools                    Yes      No
      +   ___     Connectivity                              No       No
      +   ___     Files and Databases                       No       No
      +   ___     Logging                                   No       No
      +   ___     Queues                                    No       No
      +   ___     Transactions                              No       No
      +   ___     Programs                                  No       No
      +   ___     CICS Web Support                          No       No
      +   ___     Enterprise Java                           No       No
      +   ___     Miscellaneous                             No       No
      +   ___     CICS Server                               No       No
              ** End of Reports **
```

Figure 340. Select Statistics reports for CSV extract

We have selected the DSAs report.

The run extract panel is displayed.

```
                      Run STATS HDB Extract — CICSP1
Command ===> _____

Specify run options then press Enter to continue submit.

----- Report Interval ------  HDB contains data
     YYYY/MM/DD  HH:MM:SS.TH  in the range:
From 2005/03/16  08:00:00.00  2005/03/15 07:00     Extract Recap:
To   2005/03/16  09:00:00.00  2005/03/16 11:00      DDname . . . HXTS0001

Output Data Set:
 Data Set Name Prefix . . 'JCH.CICSPA.EXTRACT'_____
 Disposition  . . . . . . 1  1. OLD   2. MOD  (If cataloged)

Extract Format:                       Enter "/" to select option
 Delimiter  . . . . . . . ;            /  Include Field Labels
                                       _  Numeric Fields in Float format

                                      Enter "/" to select option
                                       /  Edit JCL before submit
```

Figure 341. Run Statistics HDB Extract

Specify the required reporting interval, data set name and other formatting options, then press Enter to proceed.

If you selected **Edit JCL before submit** then the extract JCL is generated and displayed in an edit session for review and submission.

Guided Tour: Statistics HDB

```
EDIT       JCH.SPFTEMP3.CNTL                        Columns 00001 00072
Command ===> _____ Scroll ===> PAGE
****** ************************** Top of Data ****************************
000001 //JCH#CPA JOB ,NNOTIFY=&SYSUID
000002 //* CICSPA V1R4 HDB Extract JCL
000003 //CICSPA   EXEC PGM=CPAMAIN
000004 //STEPLIB  DD  DSN=CPPT.V140.SCPALINK,
000005 //             DISP=SHR
000006 //CPAHDBRG DD  DSN=CPPX.V140.QA.HDB.REGISTER,
000007 //             DISP=SHR
000008 //SYSPRINT DD  SYSOUT=*
000009 //*  DSAs
000010 //STAT002B DD  DSN=JCH.SDS.STAT002B,
000011 //             DISP=(NEW,CATLG),
000012 //             UNIT=SYSDA,SPACE=(CYL,(10,10))
000013 //SYSIN    DD  *
000014 * STATS HDB=CICSP1
000015   CICSPA SMFSTART(2005/03/16,08:00:00.00),
000016          SMFSTOP(2005/03/16,09:00:00.00)
000017   CICSPA LINECNT(60),
000018          FORMAT(':','/'),
000019          HDB(EXTRACT(CICSP1),OUTPUT(HXTS0001),
000020            LABELS,DELIMIT(';'),NOFLOAT,
000021            STAT002B(STAT002B))    DSAs
000022 /*
000023 //* HDB Container Data Sets. HDB Extract processing does not require
000024 //* these data sets to be included in the JCL as they are dynamically
000025 //* allocated when required. They are included:
000026 //* 1) for your reference
000027 //* 2) to ensure that all required data sets are cataloged
000028 //* 3) to allow DFHSM to recall required data sets up front
000029 //HDB00001 DD DISP=SHR,DSN=CICSPA.CICSP1.D05074.T102306.HDB
000030 //HDB00002 DD DISP=SHR,DSN=CICSPA.CICSP1.D05074.T152311.HDB
000031 //HDB00003 DD DISP=SHR,DSN= CICSPA.CICSP1.D05075.T042316.HDB
****** ************************** Bottom of Data **************************
```

Figure 342. Edit JCL for Statistics HDB Extract

Multiple statistics reports can be extracted in a single request.

Note that, like DB2 tables, CICS PA appends the statistics ID suffix to the extract
data set name. Data set JCH.SDS.STAT002B can now be file transferred to your
workstation for importing into a spreadsheet application.

Maintaining Statistics HDBs

Statistics and Performance HDBs are maintained in the same way. You can alter any of the HDB characteristics, including container data set name and allocation size for example.

Select option 7 **Maintenance** from the HDB menu to maintain your HDB environment.

```
   File  Systems  Options  Help
 ------------------------------------------------------------------------------
                               Maintain HDB                          More: >
 Command ===> _____

 Review and update HDB definition options then press EXIT to save.


 Name . . . . . . CICSP1S_  Type STATS    APPLID  CICSP1__ +  Image MVS1____
 Description  . . Statistics HDB for CICSP1_____

 Specify View . . 1  1. Options  2. Data Sets

 Statistics Reports:
  S  Select to specify Statistics Reports

 Data Retention Period:
  Years . . 20_  Months . . ___  Weeks . . ___  Days . . ___  Hours . . __

 Data Set Allocation Settings:
  DSN Prefix . . . . . . CICSPA_____
  Management class . . . _____     (Blank for default management class)
  Storage class  . . . . _____     (Blank for default storage class)
   Volume serial . . . . _____        (Blank for system default volume)
   Device type . . . . . _____     (Generic unit or device address)
  Data class . . . . . . _____     (Blank for default data class)
   Space Units . . . . . CYLS____     (TRKS, CYLS)
   Primary quantity  . . 10_____     (In above units)
   Secondary quantity    10_____     (In above units)

 F1=Help  F3=Exit  F4=Prompt  F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 343. Maintain HDB definition

For Statistics HDBs, you can also change the types of statistics data collected. Select **Select to specify Statistics Reports** to review or alter the type of statistics collected.

Guided Tour: Statistics HDB

```
   File  Edit  Options  Help
 ------------------------------------------------------------------------------
 EXPORT                        Statistics Reports                  Line 1 of 25
 Command ===> _____ Scroll ===> CSR_

 Select reports to export to DB2.
                                                                    DB2
 ___            ** Reports **                            Collect  Load
     -   ___    Regions                                    Yes     No    .
            A__    Transaction Manager                     Yes     No
          -   ___    CICS Dispatcher                       Yes     No
                 ___    Dispatcher Overview                Yes     No
                 ___    Dispatcher TCB Modes               Yes     No
                 ___    Dispatcher TCB Pools               Yes     No
                 ___    MVS TCB Overview                   Yes     No
                 ___    MVS TCBs                           Yes     No
          -   ___    CICS Storage                          Yes     No
                 ___    Storage Overview                   Yes     No
                 ___    DSAs                               Yes     No
                 ___    Domain Subpools                    Yes     No
                 ___    Task Subpools                      Yes     No
          +   ___    CICS Dumps                            Yes     No
                 ___    Enqueue Pools                      Yes     No
     +   ___    Connectivity                               No      No
     +   ___    Files and Databases                        No      No
     +   ___    Logging                                    No      No
     +   ___    Queues                                     No      No
     +   ___    Transactions                               No      No
     +   ___    Programs                                   No      No
     +   ___    CICS Web Support                           No      No
     +   ___    Enterprise Java                            No      No
     +   ___    Miscellaneous                              No      No
     +   ___    CICS Server                                No      No
                 ** End of Reports **
```

Figure 344. Activate Statistics report for data collection

In the following example, we have activated collection for Transaction Manager statistics.

Note that either activating new reports, or deactivating report already collecting data does not change the data already collected. All the existing data can still be reported, regardless of whether collection is still active or not.

Housekeeping

Housekeeping of Statistics and Performance HDBs is performed in the same way.

Select option 8 **Housekeeping** from the HDB menu to perform HDB housekeeping.

```
                      HDB Housekeeping
Command ===> _____

Register . . : CICSPROD.CICSPA.HDB.REGISTER

Select one of the following options
1  1. Submit HDB Housekeeping JCL
      2. Repair HDB Register using VERIFY command

Enter "/" to select option
/  Edit JCL before submit

 F1=Help     F3=Exit     F6=Resize    F12=Cancel
```

Figure 345. HDB Housekeeping

HDB Housekeeping performs tasks to re-organize and clean up your HDB environment:

1. **Submit HDB Housekeeping JCL.**

   Run HDB Housekeeping periodically to delete expired HDB data sets and to re-organize the HDB Register.

2. **Repair HDB Register using VERIFY command.**

   The IDCAMS VERIFY command is used to repair the end-of-data-set information in the VSAM Catalog for the HDB Register. Use repair if message IEC161I is being issued repeatedly. This condition is usually caused by a prior HDB dialog or batch request that failed.

Guided Tour: Statistics HDB

Chapter 17. Using the HDB dialog

CICS PA provides a menu-driven facility for managing your Historical Databases. A CICS PA Historical Database (HDB) is a repository of performance related data for your CICS systems. The type of information and level of detail contained in an HDB is determined by user-defined templates.

This chapter describes the CICS PA dialog for defining templates, defining and maintaining your HDBs, producing reports from the HDB data, and exporting the HDB data to DB2 tables.

Primary Option Menu

The CICS PA Historical Database is accessed from Primary Menu Option 5 **Historical Database.**

```
   File  Options  Help
 -----------------------------------------------------------------------------
 V2R1M0            CICS Performance Analyzer — Primary Option Menu
 Option ===> _____

 0  CICS PA Profile      Customize your CICS PA dialog profile
 1  Personal Systems     Specify personal CICS Systems, SMF Files and Groups
 2  Report Sets          Request and submit reports and extracts
 3  Report Forms         Define Report Forms
 4  Object Lists         Define Object Lists
 5  Historical Database  Collect and process historical data
 6  Shared Systems       Specify shared CICS Systems, SMF Files and Groups
 7  Statistics           Report CICS Statistics
 X  Exit                 Terminate CICS PA
```

Figure 346. Primary Option Menu

Historical Database Menu

Select option 5 **Historical Database** from the CICS PA Primary Option Menu to invoke the Historical Database Menu.

Every aspect of the CICS PA Historical Database is controlled via the ISPF dialog. The Historical Database Menu contains the functions to manage the Historical Database environment.

Historical Database Menu

```
   File  Options  Help
  ------------------------------------------------------------------
                      Historical Database Menu
  Option ===> _____

  1  Templates        Design HDB Templates
  2  Define           Define a new HDB
  3  Load             Load data into the HDBs
  5  Export           Export HDB data sets to DB2
  6  Extract          Extract HDB data sets to CSV
  7  Maintenance      Maintain HDB definitions and data sets
  8  Housekeeping     Perform HDB housekeeping

  HDB Register . . . 'CICSPROD.CICSPA.HDB.REGISTER'_____   +



    F1=Help      F3=Exit      F4=Prompt    F10=Actions    F12=Cancel
```

Figure 347. Historical Database (HDB) Menu

The menu provides a pathway to the eight steps for defining and using HDBs:

Step 1. **Template.** (Performance HDBs only, not Statistics HDB)

Defining an HDB is a two step process: first define a Template and then define an HDB based on that Template. The Template identifies which CMF performance fields are to be kept in the HDB. For more information, see "HDB Templates" on page 598.

Step 2. **Definition.**

After the Template is defined, then define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data. For more information, see "Define a Performance HDB" on page 619.

Step 3. **Load.**

Loading data into the HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

```
HDB(LOAD(...
```

CICS PA reads the CMF performance class data and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data. For more information, see "Load HDBs" on page 623.

Step 4. **Report.**

Reporting against a Performance HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to report against a Performance HDB is:

```
HDB(REPORT(...
```

You can tailor Performance HDB reporting by using a Report Form. This allows you to select which fields in the HDB are reported and how they are presented.

Statistics HDB reporting is done interactively using the CICS PA dialog.

Step 5. **Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

    a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.

    b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

For more information, see "HDB Export to DB2 tables" on page 636

Step 6. **Extract.**

The HDB Extract facility allows you to export data from your HDB data sets to an extract data set in CSV (comma separated values) format, suitable as input into PC-based spreadsheet applications.

Step 7. **Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets. For more information, see "HDB Maintenance" on page 644.

Step 8. **Housekeeping.**

HDB housekeeping should be run periodically to clean-up your HDB environment. Housekeeping performs two tasks:

    a. Deletes HDB container data sets that have expired.

    b. Removes definitions from the HDB Register that are no longer required.

For more information, see "HDB Housekeeping" on page 650.

Initially, your HDB environment requires a minimal one-time setup. On the Historical Database Menu, specify the name of the **HDB Register.** This is a VSAM KSDS where HDB definitions are saved.

You can define as many HDB Registers as required; however only one Register can be used at a time and each Register acts independently. Information cannot be shared between Registers. It is recommended that one global Register is defined and made available to all users. In this way, all Historical Databases are available to users.

The default name is 'CICSPA.HDB.REGISTER'. You can change this by overtyping or pressing **Prompt** (F4) to select from a list of previously used registers. Normal ISPF data set conventions apply when specifying the name of the data set.

If the HDB Register data set is not cataloged, CICS PA will prompt you to define it when you attempt to use it.

HDB Register

The Historical Database (HDB) Register is a VSAM KSDS that is the inventory of all information associated with the Historical Database Manager, such as:
- Templates
- HDB Definitions
- Selection Criteria
- Object Lists
- Container data set information
- Shared System Definitions

On the Historical Database Menu, specify the HDB Register data set name. If the HDB Register data set is not cataloged, the dialog will prompt you to define it when you select an option from the menu.

Historical Database Menu

```
                          Define HDB Register
 Command ===> _____

                                        Enter "/" to select option
                                        _  Edit IDCAMS command
                                        _  Browse errors only
  HDB Register Name  . . 'CICSPROD.CICSPA.HDB.REGISTER'_____

                          Cluster Level Information:

 Space Units  . . . . . 1  1. Cylinders   Primary Quantity . . . 1_____
                           2. Tracks       Secondary Quantity . . 1_____
                           3. Records
                           4. Kilobytes
                           5. Megabytes
 Volume . . . . . . . . _____
 Data Class . . . . . . _____
 Management Class . . . _____
 Storage Class  . . . . _____

 F1=Help     F3=Exit     F6=Resize     F12=Cancel
```

Figure 348. Define HDB Register

Specify the required allocation settings and then press **Enter** to define the HDB Register data set.

The allocation settings are:

Edit IDCAMS command

> Select this option to edit the IDCAMS command that CICS PA generates to define the HDB Register. If this option is not selected, the IDCAMS command will be issued immediately.

Browse errors only

> Select this option to browse the output from IDCAMS only when a non-zero return code is returned by IDCAMS. If this option is not selected, the output from IDCAMS will always be presented.

HDB Register Name

> Specify the name of the HDB Register data set to be defined.
>
> Normal ISPF data set conventions apply. Enclose a fully qualified data set name in quotes, otherwise the TSO prefix will be used as a high level qualifier.

Cluster Level Information

> **Space Units**
>
> > Select one of the following in which to express the data set size:
> > 1. cylinders
> > 2. tracks
> > 3. records
> > 4. kilobytes
> > 5. megabytes
>
> **Space Quantities**
>
> > Specify the Primary and Secondary allocation quantities in cylinders, tracks, records, kilobytes or megabytes as indicated in the Space Units field. Express all quantities in decimal, not hexadecimal.

> Typically a space allocation of 1 primary and 1 secondary cylinder is sufficient.

Volume

> The volume serial name of the DASD volume to contain the data set.

Data Class

> Specify the name of the data class for the data set. The data class provides the allocation attributes for the data set. The storage administrator at your installation defines the data class. However, you can override the parameters defined for a data class by explicitly specifying other attributes.

Management Class

> For an SMS-managed data set, specify the name of the management class for a new data set. The storage administrator at your installation defines the names of the management classes you can specify.
>
> If management class is not specified, but storage class is specified or defaulted, management class will be derived from automatic class selection (ACS).
>
> If management class is specified and storage class is not specified or derived, the DEFINE will fail. Note that if SMS is inactive and management class is specified, the DEFINE will fail.

Storage Class

> For an SMS-managed data set, specify the name of the storage class. The storage class replaces the storage attributes that are specified on the UNIT and VOLUME operand for non-SMS-managed data set. Use the storage class to specify the storage service level to be used by SMS for storage of the data set. The storage administrator at your installation defines the names of the storage classes you can specify. A storage class is assigned when either you specify a storage class, or an ACS routine selects a storage class for the new data set. Note that if SMS is inactive and storage class is specified, the DEFINE will fail.

Once the Register is defined, you are ready to start using HDB.

HDB Templates

Templates define the type and format of data in the Historical Databases. Templates are similar to Report Forms. Where Report Forms define the fields to be included in a report or extract, Templates define the fields to be included in an HDB. Templates provide HDBs with:

- Flexibility. You decide exactly what and how much information is recorded in the HDB.
- Ease of use. The editor provides a simple way of tailoring the template.
- Transparency. You can see at a glance exactly what information is recorded in the HDB.

The Template contains the following definition information about the HDB:

- Type of HDB: List or Summary.
- Fields names and associated field attributes.

List of Templates

Select option 1 **Templates** from the Historical Database Menu to display the list of defined Templates, allowing you to define new Templates or update existing ones.

```
   File  Options  Help
 ----------------------------------------------------------------------------
                             HDB Templates
 Command ===> NEW_____ Scroll ===> CSR_

 Select to edit Template. Enter NEW command to define a new Template.

 /   Name     Type          Description                Changed        ID
 _   CPULST   LIST      Transaction CPU Analysis        2004/12/29 00:00 CICSPA
 _   CPUSUM   SUMMARY   Transaction CPU Analysis        2004/12/29 00:00 CICSPA
 _   ENQLST   LIST      CICS ENQueue/Lock Delay Analysis 2004/12/29 00:00 CICSPA
 _   ENQSUM   SUMMARY   CICS ENQueue/Lock Delay Analysis 2004/12/29 00:00 CICSPA
 _   FCLST    LIST      File Request Activity           2004/12/29 00:00 CICSPA
 _   FCSUM    SUMMARY   File Request Activity           2004/12/29 00:00 CICSPA
 ******************************* End of list *********************************

  F1=Help      F3=Exit      F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 349. HDB Templates

You can manage your Templates using the following line actions and primary commands.

Line Actions: The available line actions are:

/	Display the selection list of line actions
E	Edit the Template. Care should be taken when updating a template if an HDB is already using it. Data loaded prior to the update will remain unchanged and will therefore be different to any new data loaded in the future.
S	Select the Template (same as Edit).
V	View the Template. This looks like the Edit panel but has no hold on the data and has no Save capability.
C	Copy the Template to the same or another Register.
D	Delete the Template.

> **Note:** You cannot delete a Template if it used by an HDB. You may need to run Housekeeping before the Delete is allowed.

Primary Commands: The following primary commands are available:

NEW name

> This command creates a new Template. The New Template window is displayed to allow you to specify the name, type and other attributes of the new Template. See "Creating new Templates" for information on how to proceed.
>
> Also available from **File** in the action bar.

SELECT name

> This command (or **S**) selects the specified Template for editing. If the Template does not exist, it is created as if the **NEW** command was used.

SORT Name|Type|Description|Changed|Id

> This command sorts the list of Templates on the specified column. The default sort field is **Name.** The sort sequence is ascending for all except the Changed column which is descending. The sort order is retained only until Exit or another SORT command is issued.

LOCATE string

> This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

Creating new Templates

The **NEW** command is used to define a new Template. New Templates are created by specifying their initial attributes and then tailoring the data fields using the Template editor.

```
   File  Systems  Options  Help
 ---------------------------------------------------------------
                      New HDB Template
 Command ===> _____

 Specify the name of the new Template and its options.


 Name . . . . . PRODSUM_


 APPLID . . . . _____   +    Version (VRM) . . ____ +
 MVS Image  . . _____
                                  _  Field Categories

 Type 2  1. List
         2. Summary



  F1=Help  F3=Exit  F4=Prompt  F6=Resize  F10=Actions  F12=Cancel
```

Figure 350. New HDB Template

You need to specify the Template name and type. In this example, a Summary Template called PRODSUM will be created. Other options affect which CMF Fields the Template will initially be defined with. They can be used to reduce the amount of fields contained in the Template.

The options are:

Name The name of the new Template. A 1-8 character name in ISPF member name format. The name must be unique within the HDB Register.

APPLID, MVS Image, Version (VRM)

Optionally specify the CICS System (APPLID/Image) or CICS Version (VRM). This ensures that the Template is populated only with Performance Class fields that are applicable.

- Specify CICS System (APPLID, or APPLID and MVS Image) to populate the Template with fields applicable to that CICS system. When available, CICS PA uses the CICS version and Dictionary record for that system to determine which fields to include in the Template. The CICS system must be defined in System Definitions. Press **Prompt** (F4) from APPLID to select one from a list (see "Select a system (CICS APPLID)"). To link directly to System Definitions, use **Systems** in the action bar.

- Alternatively, specify VRM to populate the Template with fields for that CICS version only. Press **Prompt** (F4) to select from a list of supported versions (see "Select a version (VRM)" on page 601).

If a CICS System is specified and its VRM or Dictionary record is available, it overrides the VRM specification.

If you do not specify either a CICS System or a VRM, then CICS PA populates the Template with fields applicable to the latest supported release of CICS.

Field Categories

Enter line action **S** or **/** to select the field categories to use to initially populate your new Template. For example, you can initialize your Template with Task and Terminal Control fields by selecting DFHTASK and DFHTERM from the list. The default is all categories, except CROSSSYS and IMS DBCTL. See Figure 353 on page 602 for an example of the Field Categories selection list.

An asterisk ***** indicates that field categories have been selected.

Within the selected categories, the fields added to your Template depend on the specified CICS APPLID or VRM. If APPLID is specified, CICS PA obtains the fields from the CMF Dictionary for that APPLID. Otherwise the VRM is used (the default is **650**).

Type of Template

The type of HDB is determined by the type of Template:

1. **List**
   A List HDB contains data records for individual transactions. Typically, List HDBs are used for the detailed analysis of recent transaction events and have a short life span (retention).

2. **Summary**
   A Summary HDB contains data records that summarize transaction activity over a specified time interval. Typically, Summary HDBs are used for long term trend analysis and capacity planning.

When specification is complete, press **Enter** to proceed with defining the Template.

Select a system (CICS APPLID)

To build an HDB Template for a particular CICS system, you can select one from a list of available CICS APPLIDs (APPLID/IMAGE) by pressing **Prompt** (F4) from the New Template APPLID field.

```
                             Systems                        Row 1 to 3 of 3
   Command ===> _____  Scroll ===> PAGE

   Select a System then press Enter.

        System    Image    Files   Description
   .    CICSP001  MVS1      Yes    CICS system CICSP001/MVS1
   .    CICSD001            Yes    CICS system CICSD001
   .    CICST001            No     CICS testing
   ******************************* End of list ****************************
```

Figure 351. Select a system (CICS APPLID)

This is a list of the CICS Systems defined in System Definitions. To select a system from the list, enter line action **S** (or point-and-shoot).

Select a version (VRM)

To display the list of supported CICS versions, press **Prompt** (F4) from the New Template Version (VRM) field.

```
   ------------- Select a Version---------------
                            Row 1 to 7 of 7
   Command ===> _____

   Select a CICS version then press Enter.

        Version
   .    530
   .    610
   .    620
   .    630
   .    640
   .    650
   **************** End of list ************
```

Figure 352. Select a version (VRM)

This is a list of CICS Version Release Modification (VRM) levels supported by CICS PA:

530 CICS Transaction Server for OS/390 Version 1 Release 3
610 CICS Transaction Server for z/OS Version 2 Release 1
620 CICS Transaction Server for z/OS Version 2 Release 2
630 CICS Transaction Server for z/OS Version 2 Release 3
640 CICS Transaction Server for z/OS Version 3 Release 1
650 CICS Transaction Server for z/OS Version 3 Release 2

To select a CICS version from the list, enter line action **S** (or point-and-shoot).

Select field categories

To display the list of available CICS field categories, enter **S** or **/** to select Field Categories from the New Template panel.

Select field categories

```
                         Select Field Categories
   Command ===> _____

   Category Selection:
   _  DFHAPPL - Application naming      _  DFHJOUR - Journal
   _  DFHBTS  - BTS                     _  DFHMAPP - BMS Maps
   _  DFHCHNL - CHANNEL option          /  DFHPROG - Program Control
   /  DFHCICS - CICS task information    _  DFHRMI  - Resource Manager (RMI)
   _  DFHDATA - Data processing          _  DFHSOCK - Secure Sockets
   _  DFHDEST - Transient Data          /  DFHSTOR - Storage Control
   _  DFHDOCH - Document Handler         _  DFHSYNC - Syncpoint processing
   _  DFHEJBS - EJB Server              /  DFHTASK - Task Control
   _  DFHFEPI - Front End (FEPI)         _  DFHTEMP - Temporary Storage
   _  DFHFILE - File Control            /  DFHTERM - Terminal Control
                                         _  DFHWEBB - Web Interface


   Region Type:                       User Fields:
   _  AOR      - Application-owning     _  DBCTL   - IMS DBCTL data-owning
   _  FOR      - File-owning           _  CROSSYS - Cross-System
   _  TOR      - Terminal-owning       _  OMCICS  - OMEGAMON
   _  DB2      - DB data-owning
```

Figure 353. Select field categories

This panel displays the field categories that you can select to populate a new
Template. The categories reflect the various ways of using and configuring your
CICS systems. You can choose just the ones that you require for your HDB. Only
categories applicable to the specified CICS version are available for selection. If not
specified, **650** is assumed.

Enter **/** to select the desired field categories, then press **Next** (F11) or **Exit** (F3).
The fields in the selected categories, and relevant to the specified CICS version,
will appear in the new Template.

Selecting no categories has the same effect as selecting all categories: all fields in
all categories (except user fields) will appear in the new Template.

To limit the Template to fields that are relevant to particular types of CICS region
(such as application-owning regions), select one or more region type. Selecting a
region type excludes from the Template any fields that are not relevant to that
region type, as defined in the sample monitoring control tables provided by CICS (in
sample library SDFHSAMP members DFHMCT*x*$).

Primary Commands: The following primary commands are valid for this panel:

SELECT   This command selects all field categories.

RESET   This command (or **RES**) resets all field categories by clearing the
                  selection line actions.

List Template

A List Template defines the fields to be included in a List HDB. A List HDB contains
data records for individual transactions. Typically, List HDBs are used for the
detailed analysis of recent transaction events and have a short life span (retention).

The Template editor is very similar to the Report Forms editor. You can manipulate
the Template to suit your needs.

```
  File  Edit  Confirm  Upgrade  Options  Help
 ------------------------------------------------------------------------------
                    EDIT List Template — CPULST          Row 1 of 18 More: >
 Command ===> _____ Scroll ===> PAGE

 Description . . Transaction CPU Analysis_____  Version (VRM): 650

 Selection Criteria:
  _   Performance *

      Field
 /    Name +    K  Description
 __   START___  A  Transaction identifier
 __   TRAN____  A  Transaction identifier
 S_   USERID__  A  User ID
 __   TASKNO__  _  Transaction identification number
 __   STOP____  A  Task stop time
 __   RESPONSE  _  Transaction response time
 M_   DISPATCH  _  Dispatch time
 A_   CPU_____  _  CPU time
 __   QRCPU___  _  CICS QR TCB CPU time
 __   MSCPU___  _  CICS TCBs CPU time
 __   ROCPU___  _  CICS RO TCB CPU time
 __   KY8CPU__  _  CICS Key 8 TCB CPU time
 __   J8CPU___  _  CICS J8 TCB CPU time
 __   L8CPU___  _  CICS L8 TCB CPU time
 __   S8CPU___  _  CICS S8 TCB CPU time
 __   EOD_____  _  --------------- End of HDB ---------------------
 __   TERM____  _  Terminal ID
  F1=Help     F3=Exit     F4=Prompt    F5=Rfind     F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 354. Edit List Template (View 1 of 2)

Scroll **Right** (F11) to see more information.

List Template

```
   File  Edit  Confirm  Upgrade  Options  Help
 ---------------------------------------------------------------------------
                     EDIT List Template — CPULST            Row 1 of 18 More: >
 Command ===> _____  Scroll ===> PAGE

 Description . . Transaction CPU Analysis_____   Version (VRM): 650

 Selection Criteria:
  _   Performance *

      Field                                        - User Field -
 /    Name +    K  Length  Dictionary Definition  Offset  Length
 __   START___  A    26    START    DFHCICS T005   ___     ___
 __   TRAN____  A     4    TRAN     DFHTASK C001   ___     ___
 __   USERID__  A     8    USERID   DFHCICS C089   ___     ___
 __   TASKNO__  _     4    TRANNUM  DFHTASK P031   ___     ___
 __   STOP____  A    26    STOP     DFHCICS T006   ___     ___
 __   RESPONSE  _     8    RESP     CICSPA  D901   ___     ___
 __   DISPATCH  _    12    USRDISPT DFHTASK S007   ___     ___
 __   CPU_____  _    12    USRCPUT  DFHTASK S008   ___     ___
 __   QRCPU___  _    12    QRCPUT   DFHTASK S256   ___     ___
 __   MSCPU___  _    12    MSCPUT   DFHTASK S258   ___     ___
 __   ROCPU___  _    12    ROCPUT   DFHTASK S270   ___     ___
 __   KY8CPU__  _    12    KY8CPUT  DFHTASK S263   ___     ___
 __   J8CPU___  _    12    J8CPUT   DFHTASK S260   ___     ___
 __   L8CPU___  _    12    L8CPUT   DFHTASK S259   ___     ___
 __   S8CPU___  _    12    S8CPUT   DFHTASK S261   ___     ___
 __   EOD_____  _                                  ___     ___
 __   TERM____  _     4    TERM     DFHTERM C002   ___     ___
  F1=Help      F3=Exit      F4=Prompt   F5=Rfind   F7=Backward  F8=Forward
 F10=Actions  F11=Right    F12=Cancel
```

Figure 355. Edit List Template (View 2 of 2)

When editing is complete, press **Exit** (F3) to save your Template.

The List Template consists of the following:

Description
> Up to 32 characters of text to describe the purpose of the Template. This description is shown on the Templates panel to help you identify the Templates in the list. It is initially set to **List HDB Template.**

Version (VRM)
> This identifies the CICS release that this Template was created for. It determines which CMF fields are available for selection in this Template.

Selection Criteria
> Optionally, you can specify Selection Criteria to filter the data on time periods and field values. Thereby you can restrict the HDB to only the data that is of interest to you.
>
> The available line actions are:
>
> **/**   Display the selection list of line actions.
>
> **S**   Select (edit) the Selection Criteria. See "Performance Selection Criteria" on page 613 for information on specifying Selection Criteria.
>
> **A**   Activate the Selection Criteria so they will be included for HDB processing. Selection Criteria can only be activated if you have

specified at least one Select Statement and it is not excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here will not be used in HDB processing.

Field rows

One row for each field. The order of the fields in the Template dictates the order of the fields in the HDB records. This order is important because it determines the default sequence of fields when reporting. **START** or **STOP** must be the first field positioned at the top of the Template. The fields have the following attributes: Field Name, Key, Description, Length, Dictionary Definition, User Field Offset and Length (character user fields only).

Field Name

The CICS PA field name. To select from a list of fields applicable to this type of HDB Template and CICS version, enter line action **S** (see "Field selection" on page 607) or from the field name, press **Prompt** (F4) (see "Select a performance field" on page 608). The names for user fields are derived from the MCT of the specified CICS system.

EOD is a special entry managed by CICS PA. It signals the end of the HDB record. The fields listed above EOD are included in the record in the same order as they appear in the list. The fields below EOD are ignored.

CICS PA automatically sets EOD when the Template is created and resets it if necessary when the Template is changed to ensure it is maintained in a valid position.

K   Key field indicator for DB2 Export (see "HDB Export to DB2 tables" on page 636). A value of **A** (ascending) identifies this as a key field if it is above EOD, or a key field candidate if it is below EOD. The allowed key fields are character or time stamp fields. Any number of key fields can be specified, but at least one must be specified. Either **START** or **STOP** must be specified as the first field at the top of the Template.

The Key field indicator is used only when exporting to DB2. CICS PA generates DDL to create an index for all key fields. Blank the K field if you do not need a DB2 index for this field.

HDB Load and Report requests treat all time stamp and character fields as key fields, regardless of their Key field indicator setting.

Description

This is a short description of the field. Enter line action **H** (Help) to see a more detailed description. See "Performance field help" on page 610 for an example of the help details displayed in a pop-up window.

Length

The length of the field in the HDB record.

Dictionary Definition

The description of the CMF data field in the format *informalname owner xnnn* where:

*   *informalname* is the CMF field name
*   *owner* is the CICS component that 'owns' the field
*   *x* indicates the data type:
    A - 32- or 64-bit count
    C - character string
    D - CICS PA derived time
    P - packed decimal number

> > **S** - clock (time-count)
> > **T** - STCK time stamp
> > **X** - CICS PA calculated count
> - *nnn* is the field identifier
>
> Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given an owner of 'CICSPA'. They are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

User Field Offset and Length
> This is used for character user fields when only part of the field is to be included in the HDB record. **Offset** is the position of the first character and **Length** is the number of characters from this position to be included. For example, if the user field contains the value ABCDEFG, then specifying offset 1 and length 4 gives the output ABCD. Both values are required for character user fields and default to the entire field (offset 1 and maximum length).
>
> CICS PA JCL generation translates these values to
> `FIELDS(CHARACTER(SUBSTR(offset,length),...`

Line Actions: The following line actions are valid on this panel:

/   Display the selection list of line actions.

S   Select a field name from a list of available CMF fields. See "Field selection" on page 607 for an example of the field selection panel.

I   Insert a blank row after this row for entry or selection of another field.

R   Repeat this row.

RR   Repeat a block of rows bounded by two RRs.

C   Copy this row.

CC   Copy a block of rows bounded by two CCs.

M   Move this row.

MM   Move a block of rows bounded by two MMs.

A   Move/Copy after this row.

B   Move/Copy before this row.

D   Delete this row.

DD   Delete a block of rows bounded by two DDs.

H   Field Help. Display a detailed explanation of the field. See "Performance field help" on page 610 for an example of the field help panel.

Notes:
1. Line operations can span the EOD row. CICS PA will reset EOD after the operation has completed to ensure it is validly positioned. Only one EOD is retained, that closest to the top of the list. EOD cannot be deleted.
2. Deleted user fields cannot be recovered.
3. In a Summary Template:
   - Key fields must be together at the top of the Template.
   - **TASKCNT** is a required field and must be after the key fields.

Primary Commands: The following primary commands are valid for this panel:

FIND string

This command (or **F**) looks for the specified character string in all columns of displayed data. The string is not case sensitive. The display scrolls to the row where the string is found and positions the cursor on the matching data.

To find more occurrences, use **F5** (RFIND) repeatedly.

If there is no match but the search did not begin at the top of the list, the screen does not change and the message `*Bottom of data reached*` is displayed. Use **F5** (RFIND) to search from the top. If there is no match in the entire list, the screen does not change and a `String not found` message is displayed.

SAVE This command is only available from Edit mode and saves any changes you have made. You cannot save changes made in View mode.

Also available from **File** in the action bar.

RESET

This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Also available from **Edit** in the action bar.

CONFIRM ON|OFF

CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Template panel when there have been updates.

With **CONFIRM OFF,** Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit session. On exit, it reverts to the value set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

UPGRADE vrm

This command is used to upgrade the Template to the specified CICS version (VRM) provided it is a later release. CMF Fields for all CICS releases after the current release and up to the specified release are added to the bottom of the Template.

Also available from **Upgrade** in the action bar.

Field selection

Field Selection allows you to view expanded field descriptions and select a field name for insertion into your Template. The panel cycles through all CMF performance fields applicable to the type of Template and CICS version. To display the Field Selection panel, enter line action **S** against a field or blank line on the Template panel where you want to insert the selected field name.

Field selection

```
   File  Help
 -------------------------------------------------------------------------
                              Field Selection            Row 1 of 7 More: >
 Command ===> _____  Scroll ===> CSR_

 Name  . . . . . START___   +
 CMF ID  . . . : START    DFHCICS T005
 Description . : Task start time


 -----------------------------------------------------------------------

 Start time of measurement interval. This is one of the following:
 1.  The time at which the user task was attached
 2.  The time at which data recording was most recently reset in
     support of the MCT user event monitoring point DELIVER option or
     the monitoring options MNCONV, MNSYNC, or FREQUENCY.

 Note:  Response Time = STOP - START.
 ****************************** End of list ****************************

  F1=Help      F3=Exit      F4=Prompt     F6=Resize     F7=Backward
  F8=Forward   F10=Prev     F11=Next      F12=Cancel
```

Figure 356. Field selection

This panel cycles through all the CMF data fields available for selection. Each field
is displayed in turn with its expanded description like that provided by Template line
action **H** (see "Performance field help" on page 610). Details are only available for
CICS-defined fields, not user fields.

To cycle through the list of fields, press **F11** and **F10** to move Forward or Backward
through the list. You can restart anywhere in the cycle by entering a valid field name
then moving Forward or Backward from that point.

You can press **Prompt** (F4) from the Name field to display a selection list of fields
(see "Select a performance field").

When the desired field is displayed in the Name field, press **Exit** (F3) to select it.

Select a performance field
Select a Performance Field allows you to select a field name from a list of available
CMF performance fields. To display the selection list, press **Prompt** (F4) from the
Field Name field on the Template panel or the Field Selection panel.

```
   File  Help
 ------------------------------------------------------------------------------
                      Select a Performance Field          Row 1 of 274 More: >
   Command ===> _____ Scroll ===> PAGE

      Field
 /  Name       Description
 _  START      Task start time
 _  MVSID      MVS SMF ID
 _  APPLID     CICS Generic APPLID
 _  TRAN       Transaction identifier
 _  USERID     User ID
 _  PROGRAM    Program name
 _  TASKNO     Transaction identification number
 _  RESPONSE   Transaction response time
 _  DISPATCH   Dispatch time
 _  CPU        CPU time
 _  SUSPEND    Suspend time
 _  DISPWAIT   Redispatch wait time
 _  FCWAIT     File I/O wait time
 F1=Help       F3=Exit       F5=Rfind      F6=Resize      F7=Backward
 F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 357. Select a field (Part 1 of 2)

```
   File  Help
 ------------------------------------------------------------------------------
                      Select a Performance Field          Row 1 of 274 More: >
   Command ===> _____ Scroll ===> PAGE

      Field
 /  Name       Dictionary Definition
 _  START      START    DFHCICS T005
 _  MVSID      MVSID    CICSPA  C904
 _  APPLID     APPLID   CICSPA  C903
 _  TRAN       TRAN     DFHTASK C001
 _  USERID     USERID   DFHCICS C089
 _  PROGRAM    PGMNAME  DFHPROG C071
 _  TASKNO     TRANNUM  DFHTASK P031
 _  RESPONSE   RESP     CICSPA  D901
 _  DISPATCH   USRDISPT DFHTASK S007
 _  CPU        USRCPUT  DFHTASK S008
 _  SUSPEND    SUSPTIME DFHTASK S014
 _  DISPWAIT   DISPWTT  DFHTASK S102
 _  FCWAIT     FCIOWTT  DFHFILE S063
 F1=Help       F3=Exit       F5=Rfind      F6=Resize      F7=Backward
 F8=Forward    F10=Actions   F11=Right     F12=Cancel
```

Figure 357. Select a field (Part 2 of 2)

This panel lists all the CMF data fields available for selection. Enter line action **S** to select a field name from the list.

To help locate a particular field, you can use the **FIND** (or **RFIND**) command which will search in all the displayed fields for a specified string. For further information on any field, use the **H** line action.

To leave without selecting, use Exit or Cancel.

Field Name
The CICS PA name for the CMF data field.

Select a performance field

> Line action **/** or **S** will insert the field name into the previous panel in the row where the cursor was positioned.

Description
> This is a short description of the field. Enter line action **H** (Help) for a more detailed description. See Figure 358 for an example of the help details displayed in a pop-up window.

Dictionary Definition
> The description of the CMF data field in terms of the CMF informal name, CICS owner, data type, and field identifier. See page 605 for further information.

Line Actions: The available line actions are:

/ Display the menu of line actions.

S Select a field name.

H Field Help. Display a detailed explanation of the field.

Primary Commands: To help locate a particular field, you can use the **FIND** (or **RFIND**) command which will search in all columns of data for a specified string.

Performance field help

On the Template panel, if you enter the line action **H** against a field, a pop-up window will display a more detailed explanation of the field.

```
   File  Help
  -------------------------------------------------------------------------------
                          TASKNO Explanation              Row 1 to 11 of 11
   Command ===> _____  Scroll ===> PAGE

   Name  . . . . : TASKNO
   CMF ID  . . . : TRANNUM  DFHTASK P031
   Description . : Transaction identification number


  -------------------------------------------------------------------------------
   Transaction identification number.

 Note:  The transaction number field is normally a 4-byte packed
 decimal number.  However, some CICS system tasks are identified
 by special character 'transaction numbers', as follows:
 ' III' for system initialization task
 ' TCP' for terminal control.

 These special identifiers are placed in bytes 2 through 4. Byte
 1 is a blank (X'40') before the terminal control TCP
 identifier, and a null value (X'00') before the others.
  ******************************** End of list ********************************
   F1=Help       F3=Exit        F6=Resize      F7=Backward    F8=Forward
   F10=Actions   F12=Cancel
```

Figure 358. Performance field help

This panel provides a more detailed description of the field. It is only available for CICS-defined fields, not user fields.

The details are:

Name The name of the field as it is known to CICS PA.

CMF ID
> The Dictionary description of the CMF data field (see page 605).

Description
A short description of the field followed by the expanded description.

Template upgrade

Templates are release-dependent. When you define a new Template you specify the CICS System or CICS Version (VRM) so that CICS PA can initialize the Template with fields appropriate to that release. However, you can later upgrade the Template to a later release by using **Upgrade** in the action bar of the Template panel. This facility is available for all Template types.
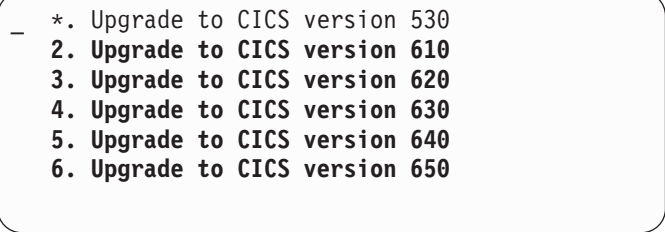
```
_   *. Upgrade to CICS version 530
    2. Upgrade to CICS version 610
    3. Upgrade to CICS version 620
    4. Upgrade to CICS version 630
    5. Upgrade to CICS version 640
    6. Upgrade to CICS version 650
```

Figure 359. Upgrading your Template

The Upgrade action bar choice (or **UPGRADE vrm** command) introduces the new CMF fields of a later release of CICS into your Template. The new fields are inserted at the bottom of the Template as candidate fields. Upgrading does not affect the fields currently in the Template, nor does it affect the format of HDB container data sets that have already been loaded based on this Template. To then incorporate a new field into your HDB from hereon, move the new field above the EOD marker.

You can upgrade your Template to a CICS Version (VRM) that is not marked by an asterisk *****. To do this, select the VRM and press **Enter.** Otherwise, press **Cancel** to retain the Template at the current level.

Summary Template

A Summary Template defines the fields to be included in one or more Summary HDBs. A Summary HDB contains data records that summarize transaction activity over a specified time interval. Typically, Summary HDBs are used for long term trend analysis and capacity planning.

Edit the Template to meet your reporting requirements. In this example, FCAMCT is deleted and TSWAIT is inserted.

Summary Template

```
   File  Edit  Confirm  Upgrade  Options  Help
 ------------------------------------------------------------------------------
                       EDIT Summary Template - PRODSUM      Row 1 of 244 More: >
 Command ===> _____ Scroll ===> CSR_

 Description  . . . Summary HDB Template_____   Version (VRM): 650

 Selection Criteria:
   _  Performance                         Time Interval  . . 00:15:00  (hh:mm:ss)

      Field
 /    Name +    K  Description
 __   START___  A  Task start time
 __   MVSID___  A  MVS SMF ID
 __   APPLID__  A  CICS Generic APPLID
 __   TRAN____  A  Transaction identifier
 __   TASKCNT_     Total Task count
 __   RESPONSE     Transaction response time
 __   DISPATCH     Dispatch time
 __   CPU_____     CPU time
 __   SUSPEND_     Suspend time
 __   DISPWAIT     Redispatch wait time
 __   FCWAIT__     File I/O wait time
 D_   FCAMCT__     File access-method requests
 __   IRWAIT__     MRO link wait time
 __   SC24UHWM     UDSA HWM below 16MB
 I_   SC31UHWM     EUDSA HWM above 16MB
 __   TSWAIT__     VSAM TS I/O wait time
 __   EOD_____     --------------- End of HDB -----------------
 __   TERM____  A  Terminal ID
 __   APPLTRAN  A  Application naming Tran ID
 __   APPLPROG  A  Application naming Program
 __   STOP____  A  Task stop time
  F1=Help     F3=Exit      F4=Prompt    F5=Rfind     F7=Backward  F8=Forward
 F10=Actions F11=Right    F12=Cancel
```

Figure 360. Edit Summary Template

A Summary Template operates in a similar manner to a List Template. Like the List
Template (see "List Template" on page 602), the following features apply to the
Summary Template:

- Scroll **Right** (F11) for more information.
- Specify the following details. Where these differ with the List Template, the
  differences are noted.
  - **Description.** The default description is **Summary HDB Template.**
  - **Version (VRM).**
  - **Selection Criteria.** For example, the HDB only includes data for transactions
    that use File Control services (FCTOTAL>0).
  - **Time Interval.** Summary Templates specify a recording time interval in the
    range 00:00:01 (1 second) to 24:00:00 (24 hours). The default is **00:01:00** (1
    minute) which indicates that summary data is accumulated and recorded in 1
    minute intervals. Select the interval carefully because it will impact on HDB
    processing as follows:
    1. **Loading**. Shorter recording intervals write more records, increasing the
       size of your HDB data sets.
    2. **Reporting**. Longer recording intervals restrict reporting. For example, if
       you specify a recording interval of 1 hour then you can only report on 1
       hour (or higher) intervals, and 15 minute interval reporting is not possible.

Therefore selecting the correct interval is a balance between not loading too much data and not restricting reporting. Specify an interval that is both small enough so that data set size is kept to a minimum yet large enough to meet your reporting requirements. In the example above, the interval has been changed to 15 minutes.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

1   becomes 00:01:00
1.1   becomes 00:01:00 (rounded down from 00:01:01)
1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

This option generates the `INTERVAL(hh:mm:ss)` operand.

– **Field rows.** A Summary Template has the following additional features:

1. Key fields must be together at the top of the Template.

2. The allowed key fields are: START, STOP, MVSID, APPLID, TRAN, TERM, APPLTRAN, APPLPROG, JOBNAME, PRCSTYPE, RPTCLASS, SRVCLASS, TCLASSNM, TCPSRVCE, USERID. Up to six key fields can be specified, but at least one must be specified. Either **START** or **STOP** must be specified as the first field at the top of the Template.

3. **TASKCNT** is a required field immediately after the key fields.

- "Field selection" on page 607
- "Select a performance field" on page 608
- "Performance field help" on page 610
- "Template upgrade" on page 611

When editing is complete, press **Exit** (F3) to save your Template.

Warning!

After a Template has been initially saved, you are permitted to edit the Template to change its field list. However if the Template is already being used to load data into a HDB, then changing the Template can potentially cause reporting problems in the future. CICS PA supports the alteration of Template fields, but a few simple rules will ensure that HDB processing is not compromized:

1. Do not change the key fields of a Summary Template.

2. Do not change the focus of a Template. For example, if the Template includes Temporary Storage fields only, do not delete those fields and insert File Control fields in their place. You should create another Template with a focus on File Control.

Performance Selection Criteria

Optionally, you can specify Selection Criteria in an HDB Template. When the associated HDB is loaded, the Selection Criteria filter the CMF performance class records based on time and field values.

Performance Selection Criteria

To specify Selection Criteria, enter line action **S** against Performance Selection Criteria on the Template panel.

The operation of Selection Criteria for HDBs is the same as that for Report Sets, only the available fields may differ. For more information, refer to:
- "Specifying Selection Criteria" on page 176
- "Specifying Select Statements" on page 177

Object Lists can be used in Performance Select Statements as a convenient way to specify a list of values. The Object List concept for HDBs and Report Sets is the same. However, the dialog differs slightly and the Object Lists for HDB and Report Sets are stored different data sets:
- Object Lists for Report Sets are strored in the Object Lists data set. For more information on defining Object Lists for use in Report Sets, see Chapter 10, "Object Lists," on page 321.
- Object Lists for HDB are stored in the HDB Register. For more information on defining Object Lists for HDB, see "HDB Object Lists."

HDB Object Lists

HDB Object Lists are stored in the HDB Register.

An HDB Object List defines a list of character field values that can be used when specifying Selection Criteria for filtering the data for your HDB Load. A typical use might be to define all the transaction IDs that belong to a particular application system. Object Lists enable you to define a group of related values once, then use it in many HDBs by simply specifying the name of the Object List in your Selection Criteria. This avoids duplicating the same list of values in different HDBs.

For example, instead of specifying Select Statements that include transactions B001,B002,B003,..., you pre-define an Object List called BTRANS that has values B001,B002,B003,... Now when you specify the Select Statement, you simply specify BTRANS to include those transactions. To select a valid name from a list of pre-defined Object Lists, press **Prompt** (F4) from the Object List field in the Select Statement.

```
   File  Edit  Object Lists  Options  Help
 ------------------------------------------------------------------------------
                  SAMPLE - Performance Select Statement     Row 1 of 3 More: >
 Command ===> _____ Scroll ===> PAGE

          Active  --------------- Report Interval ----------------
   Inc    Start  -------- From --------- ---------- To ---------
   Exc    Stop   DD/MM/YYYY  HH:MM:SS.TH  DD/MM/YYYY  HH:MM:SS.TH
   _  INC  ACTIVE 15/12/2004  _____  20/12/2004  _____


 ------------------------------------------------------------------------------

   Inc  Field                ----- Value or Range -----   Object
 / Exc  Name +      Type     Value/From      To           List +
   _  INC  RESPONSE  _____    3_____               _____   Milliseconds
   _  INC  CPU_____  TIME__   50_____  1000_____    _____   Milliseconds
   _  INC  TRAN____  _____    _____   _____     BTRAN___
 ****************************** End of list ******************************

  F1=Help      F3=Exit     F4=Prompt    F7=Backward  F8=Forward  F10=Actions
 F11=Right    F12=Cancel
```

Figure 361. Performance Select Statement

List of HDB Object Lists

Object Lists are a convenient way to specify values in Selection Criteria in your
HDB Templates. To define an HDB Object List, select **Object Lists** from the action
bar of the Performance Select Statement (see Figure 361) or enter the **OBJLISTS**
command from the command line. This will link to the list of Object Lists.

```
   File  Options  Help
 ------------------------------------------------------------------------------
                        HDB Object Lists                    Row 1 to 4 of 4
 Command ===> NEW_____ Scroll ===> ____

 Select to edit Object List. Enter NEW command to define a new Object List.

 /   Name       Description                            Changed        ID
 _   FINANCE    Finance Transactions               2005/01/03 12:27 JCH02
 _   HQTERMS    Terminals at headquarters          2005/01/02 08:57 DAM13
 _   HQUSERS    Users at headquarters              2005/01/05 10:49 SEC22
 _   STOCK      Stock Transactions                 2005/01/05 16:57 DOC17
 ****************************** End of list ******************************
```

Figure 362. HDB Object Lists

This panel lists all the Object Lists in the HDB Register and allows you to select
one at a time to view or modify.

Line Actions: The following line actions can be entered against an Object List:
/   Display the selection list of line actions.
E   Edit the Object List.
S   Select the Object List (same as Edit).
V   View the Object List. This looks like the Edit panel but has no 'hold' on the
             data and has no Save capability.
D   Delete the Object List.

Primary Commands: The following primary commands are valid for this panel:

NEW name

> This command creates a new Object List. If name and type are validly specified, the Edit panel for the new Object List is displayed. Otherwise, the New Object List window is displayed where you specify the name and type of the new Object List. See "Creating new HDB Object Lists" for information on how to proceed.
>
> Also available from **File** in the action bar.

SELECT name

> This command (or **S**) selects the specified Object List for editing. If the Object List does not exist, it is created as if the **NEW** command was used.

SORT Name|Description|Changed|Id
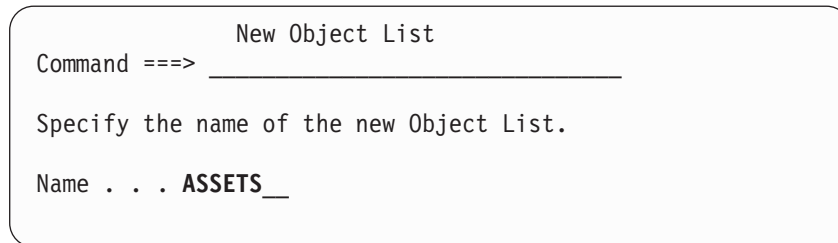
> This command sorts the list of Object Lists on the specified column. The default sort field is **Name.** The sort disregards upper and lower case, and is ascending for all but the Changed column. The sort order is retained only until Exit or another SORT command is issued.

LOCATE string

> This command (or **L** or **LOC**) is used to locate an entry in the list based on the primary sort field. By default, LOCATE operates on the **Name** field. The string should be no longer than the primary sort field and not enclosed in quotes. The display will scroll to the entry which matches the string, or the entry preceding it if an exact match is not found.

Creating new HDB Object Lists

The **NEW** command is used to define a new HDB Object List.

```
                New Object List
  Command ===> _____

  Specify the name of the new Object List.


  Name . . . ASSETS__
```

Figure 363. Specifying a new HDB Object List

Specify the name of the new Object List then press **Enter** to edit.

An Object List name is 1-8 characters in ISPF member name format. The name must be unique within the HDB Register data set.

This panel could have been bypassed by entering the command **NEW name** in full.

Specifying values in HDB Object Lists

The Object List edit panel is displayed when, from the HDB Object Lists panel, you either:

- Request a new Object List.

  Use the **NEW** command or action bar choice **File - New.**

- Select an existing Object List.

  Enter line action **E** or **S** against an Object List or use the **SELECT name** command.

Alternatively, you can enter line action **V** to display the Object List view panel. Viewing an Object List works in every way like Edit except there is no exclusive hold on the data and changes cannot be saved.

```
   File  Edit  Confirm  Options  Help
 ----------------------------------------------------------------------------
                        EDIT Object List — BILLING          Row 1 to 2 of 2
 Command ===> _____      Scroll ===> PAGE

 Description  . . . . Billing Transactions_____

 Specify the Object List values:

 /
 _   B001_____   B002_____   B003_____   _____
 _   _____   _____   _____   _____
 ******************************* End of list *******************************
```

Figure 364. Specifying HDB Object List values

Use this panel to specify values in an Object List. The Object List can then be 'reused' many times in **Selection Criteria** in HDB Templates and Definitions.

Specify a description for your Object List, up to 32 characters of text to describe its purpose. The description is initially set to **HDB Object List.**

Specify any number of values to be used in Include/Exclude statements in Selection Criteria. The values are free-format, typically names such as Transaction Codes, User IDs, and IMS Subsystem IDs. Masking characters are supported: % for one and only one character and * for many or none. The order of entries in the list is of no consequence to HDB processing.

Each input field is a separate value. Blank values are ignored.

It is usual to define Object Lists that are homogenous. That is, an Object List should specify values for testing the contents of one particular field. Define one Object List for Transaction Codes, another for User IDs, and so on.

Line Actions: The following line actions are valid on this panel:
/	Display the menu of line actions
I	Insert a new row
R	Repeat this row
C	Copy this row
M	Move this row
A	Move/Copy after this row
B	Move/Copy before this row
D	Delete this row

Primary Commands: The following primary commands are valid for this panel:

SAVE This command is only available from Edit mode and saves any changes you have made.

Also available from **File** in the action bar.

RESET
This command (or **RES**) removes all outstanding line actions and deletes any blank rows.

Edit/View HDB Object List

Also available from **Edit** in the action bar.

CONFIRM ON|OFF

CONFIRM ON (or **CONFIRM**) instructs CICS PA to prompt for confirmation when you request to Cancel from the Object List panel when there have been updates.

With **CONFIRM OFF,** Cancel requests are actioned immediately, discarding any changes.

This command changes the setting only for the current Edit/View session. On exit, it reverts to the default set by **Cancel Confirmation** in CICS PA Settings.

Also available from **Confirm** in the action bar.

Define a Performance HDB

Defining an HDB allows you to collect (load) and report historical performance data. The definition alone does not cause any action by CICS PA.

Select option 2 **Define** from the HDB menu to define a new HDB.

```
  File  Systems  Options  Help
 --------------------------------------------------------------------------
                             New HDB Definition
 Command ===> _____

 Specify new HDB definition options then press EXIT to save.

 Name . . . . . . CICSWEEK  APPLID  CICSPROD + Image _____
 Description  . . Production CICS Weekly History__

 HDB Format:                          Selection Criteria:
  Template  . . . WEEKSUM_  +              _  Performance

 Data Retention Period:
  Years . . ___   Months . . ___   Weeks . . ___   Days . . ___   Hours . . ___

 Data Set Allocation Settings:
  DSN Prefix . . . . . . CICSPA.HISTORY____
  Management class . . . _____     (Blank for default management class)
  Storage class  . . . . _____     (Blank for default storage class)
   Volume serial . . . . _____       (Blank for system default volume)
   Device type . . . . . _____       (Generic unit or device address)
  Data class . . . . . . _____     (Blank for default data class)
   Space Units . . . . . _____     (TRKS, CYLS)
   Primary quantity  . . _____     (In above units)
   Secondary quantity    _____     (In above units)

 F1=Help  F3=Exit  F4=Prompt  F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 365. New HDB Definition

Specify the details of your new HDB:

Name   The name of the HDB. A 1-8 character name in ISPF member name format. The name is unique within the HDB Register.

APPLID, Image

The optional CICS System (APPLID/Image) that owns the HDB.

HDB LOAD requests use this APPLID and associated SMF files (defined in System Definitions) to build the JCL deck. If not specified, you are prompted at submit time to specify the system.

The CICS System must be defined in System Definitions. To select one from a list, use **Prompt** (F4). See "Select a system (CICS APPLID)" on page 600 for an example of the list of systems. To link directly to System Definitions, use **Systems** in the action bar.

Description

The HDB description is free format text that you can specify to help identify the purpose of the HDB.

Template

The Template defines the type and format of the HDB. Before defining an HDB, you must first design a Template that defines the required information

to be kept in the HDB data sets. In the example above we have specified a Summary Template WEEKSUM and HDB CICSWEEK inherits its attributes.

To select a Template from a list of defined Templates, use **Prompt** (F4). See "Select a Template" on page 622 for an example of the prompt list.

Selection Criteria

HDBs have optional Selection Criteria that allows you to filter the CMF performance class records used to build the HDB. For example, the HDB only includes data for a particular application's transaction ids, such as TRAN=MY*. Select to specify Selection Criteria.

Templates can also specify Selection Criteria. If the Template and HDB both have active Selection Criteria then both are checked and *both* must match for the record to be processed.

- **Template Selection Criteria** typically focuses on the type of data being recorded. For example, if your Template is monitoring File Control activity then its Selection Criteria can specify FCTOTAL>0 to include only transactions that used File Control services.
- **HDB Selection Criteria** typically focuses on the application targeted by the HDB. For example, if the HDB is for MY application then its Selection Criteria can specify TRAN = MY* to include only transactions in MY application.

The resultant HDB will include data for transactions matching MY* that uses File Control services.

Line Actions: The available line actions are:

/   Display the selection list of line actions.

S   Select (edit) the Selection Criteria. See "Performance Selection Criteria" on page 613 for information on specifying Selection Criteria.

A   Activate the Selection Criteria so they will be included for HDB processing. Selection Criteria can only be activated if you have specified at least one Select Statement and it is not excluded. An asterisk ***** indicates they are active.

D   Deactivate the Selection Criteria. Any you may have specified here will not be used in HDB processing.

Data Retention Period

Specify the number of years, months, weeks, days or hours that you want the HDB container data sets to be kept. The retention period can be from 1 hour to 999 years (forever). Typically:

- Summary HDBs need to keep their container data sets for many years for long term trend analysis.
- List HDBs used for ad-hoc reporting may only need to keep their container data sets for a couple of hours or days.

Only one Retention Period can be specified: either years, months, weeks, days, or hours. You can leave it blank to ensure data is never expired.

Container data sets are deleted by **HDB Housekeeping** after they have passed their expiry date.

Use **HDB Maintenance** to check container data set status or to alter the retention period.

Data Set Allocation Settings

Data Set Allocation Settings specify the allocation attributes of the data sets that contain data for this HDB. CICS PA dynamically allocates container data sets at load time.

The settings are:

DSN Prefix

Specify the high level qualifier of the data sets that are dynamically allocated by the HDB LOAD process to contain the data. The format of the data set name is **DSN-prefix.HDB-name.Dyyddd.Thhmmss.HDB** where the DSN–prefix is the data set name high level qualifier. For example, **CICSPA.HISTORY.CICSWEEK.D03123.T103821.HDB**

Management class

For an SMS-managed data set, specify the name of the management class for a new data set. The storage administrator at your installation defines the names of the management classes you can specify.

If management class is not specified, but storage class is specified or defaulted, management class will be derived from automatic class selection (ACS).

If management class is specified and storage class is not specified or derived, the DEFINE will fail. Note that if SMS is inactive and management class is specified, the DEFINE will fail.

Storage class

For an SMS-managed data set, specify the name of the storage class. The storage class replaces the storage attributes that are specified on the UNIT and VOLUME operand for non-SMS-managed data set. Use the storage class to specify the storage service level to be used by SMS for storage of the data set. The storage administrator at your installation defines the names of the storage classes you can specify. A storage class is assigned when either you specify a storage class, or an ACS routine selects a storage class for the new data set. Note that if SMS is inactive and storage class is specified, the DEFINE will fail.

Volume serial

The volume serial name of the DASD volume to contain the data set.

Device type

The generic or esoteric DASD device type of the data set, such as 3390 or SYSDA. This must represent a device type that is defined in the Eligible Device Table of the current processor as DASD.

Data class

Specify the name of the data class for the data set. The data class provides the allocation attributes for the data set. The storage administrator at your installation defines the data class. However, you can override the parameters defined for a data class by explicitly specifying other attributes.

Space Units

Select one of the following:
TRKS Express data set size in tracks

CYLS Express data set size in cylinders

Space quantities

Specify the **Primary** and **Secondary** allocation quantities in tracks or cylinders as indicated in the Space Units field. Express all quantities in decimal, not hexadecimal.

Specify allocation settings that satisfy your installation requirements. The size of container data sets is not critical. Typically you would specify a size that accommodates a single load request. For example, if you load data into the HDB daily, then 10 cylinders may be sufficient. However if CICS PA encounters an out-of-space condition (ABENDx37) during load, then it simply closes the data set and recommences loading in a new data set. You can decide to specify a larger size initially and adjust it later using **HDB Maintenance.**

Select a Template

To specify the Template on which to define the HDB, press **Prompt** (F4) from the Template field to select from a list of pre-defined Templates.

```
                   HDB Templates              Row 1 to 3 of 3
  Command ===> _____  Scroll ===> PAGE

  Select a Template then press Enter.

      Name      Type           Description
  .   CPULST    LIST       Transaction CPU Analysis
  .   PRODSUM   SUMMARY    Summary HDB Template
  .   WEEKSUM   SUMMARY    Production CICS Weekly History
  *********************** End of list ***********************
```

Figure 366. Select a Template

This is a list of HDB Templates in the current HDB Register.

To select a Template, enter line action **S** (or point-and-shoot).

Load HDBs

After defining an HDB you can collect (load) the historical performance data.

Select option 3 **Load** from the HDB menu to generate JCL to load data into your HDB. The list of defined HDBs is presented.

```
   File  Options  Help
 ------------------------------------------------------------------------------
                                 Load HDBs                      Row 1 to 5 of 5
 Command ===> _____  Scroll ===> CSR_

 Select to load an HDB.

    Name      Type           Description              Changed        ID
 _  CICSDAY  LIST     Today's CICS Transactions     2004/12/11 00:00 CICSPA
 S  CICSWEEK SUMMARY  Weekly CICS Transactions      2004/12/11 00:00 CICSPA
 _  CPUTREND SUMMARY  Transaction CPU Usage Trend   2004/12/11 00:00 CICSPA
 _  PRODRESP SUMMARY  Production Transaction Response 2004/12/11 00:00 CICSPA
 _  FCHIST   SUMMARY  File Request History          2004/12/11 00:00 CICSPA
 ****************************** End of list ********************************

  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 367. Load HDBs

Enter line action **S** to select an HDB for Load processing. You will be prompted to specify run-time options, then CICS PA will build the JCL to load data into your HDB.

You can select multiple HDBs to load in succession.

SORT and **LOCATE** commands are available to help you work with the list of HDBs.

Load creates the JCL that builds the HDBs. The Load process is handled via normal CICS PA command input. This allows multiple reports, extracts and HDBs to be created via a single pass of the SMF data.

Select the required HDB from the list to display the Load panel which is the same for a Load or a Summary HDB.

Load HDBs

```
   File  Systems  Options  Help
 ------------------------------------------------------------------
                     Load SUMMARY HDB CICSWEEK
 Command ===> _____

 Specify HDB load options then press Enter to continue submit.

 System Selection:                      ———— Report Interval ————
  APPLID . . CICSPROD  +                      YYYY/MM/DD  HH:MM:SS.TH
  Image  . .  _____    +              From 0_____      09:00:00.00
  Group  . .  _____    +              To   0_____      16:30:00.00

 DB2 Export Options:                    Table Load Options
 _   Load DB2 Table                     1  1. Resume   2. Replace

 Include Clock Field Components         Summary Options
 1  1. Time and Count                   _   Include Sums of Squares
    2. Time only
    3. Count only                       Enter "/" to select option
                                        /  Edit JCL before submit


  F1=Help     F3=Exit     F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 368. Load Summary HDB

Specify the run-time options:

System Selection

System Selection specifies the CICS system(s) whose data is to be loaded into the HDB. It is initialized to the CICS system APPLID that you specified during HDB definition.

You can specify any combination of APPLID, Image, or Group, but these must be defined in your System Definitions. If you do not specify System Selection here or in the Global Options, then you will be prompted at run time to specify the System Selection. This will apply globally to all reports and extracts without their own System Selection. This is recommended as it allows you to run your Report Sets against any of your defined Systems. Press the **Prompt** key (F4) to select from a list of defined Systems, Images, or Groups. To modify your System Definitions, select **Systems** in the action bar.

Specify one of the following:

- A CICS APPLID. An APPLID that matches a defined System's name pattern is also allowed. For example, CICSP1 can be specified if CICSP* is a defined system.
- An APPLID and an MVS Image. This identifies the MVS Image where your CICS system executes.
- An MVS Image. All CICS systems executing on this MVS Image will be selected.
- An APPLID and Image combination plus a Group. This is useful for uniquely identifying a CICS system when there are multiple CICS systems with the same name defined.
- A Group alone. CICS PA will select all CICS APPLIDs defined to the Group. For example, for transaction grouping, or for systems that connect via IRC/MRO or ISC/APPC.

CICS PA uses the System Selection in JCL generation to build the `APPLID(applid1,applid2,applid3,...)` and `INput(SMFIN001,SMFIN002,SMFIN003,...)` operands, and corresponding `//SMFINnnn DD` statements.

System Selection can also be specified either:
- In Global Options. The report-level specification takes precedence over the global.
- At run time. The run-time System Selection overrides the Global Options and optionally the report-level specification.

In the example above, CICS PA generates an `APPLID(CICSPROD)` operand in the command deck and includes DD statements for the SMF Files defined in System Definitions for CICSPROD.

Report Interval
Specify the time range of data to be included in the HDB. You can specify an explicit date, such as 2004-12-05, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. In the example above we have used a relative date of zero (0) to indicate that we are processing today's SMF data, from 9:00am to 4:30pm.

It is recommended that you specify relative dates if you want to use an automated job scheduler to run the load HDB JCL regularly. The JCL can be set up once and run daily without needing to change it.

DB2 Export Options
To export the data to DB2 directly after loading it into the HDB, select the Load DB2 Table option. For details of the JCL that this option generates, see "Load JCL." (The remaining DB2 export options are only relevant if you select the Load DB2 Table option.)

The DB2 table to which you are exporting must already be defined. To define a DB2 table, see "Creating DDL to define a DB2 table" on page 637.

If you select the **Replace** Table Load option, but the HDB load fails, then the result will be an empty DB2 table.

Edit JCL before submit
Select with a **/** to edit the JCL before submit. CICS PA will generate the JCL and display it in an ISPF Edit session. You can review or modify the JCL using the usual ISPF Edit commands and actions, or you can use the CREATE command to save the JCL in an external data set.

Then to submit the job, enter **SUBmit** in the Edit command line.

If this option is not selected, the generated JCL is not displayed and the job is submitted immediately.

After you have specified your Load options, press **Enter**. You will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your load request.

Load JCL

If you selected **Edit JCL before submit** then the Load HDB JCL is displayed in an edit session. Specify this option if you want to save the JCL in an automated job scheduler JCL library.

Load HDBs

```
EDIT       JOHN.SPFTEMP1.CNTL                         Columns 00001 00072
Command ===> change '<unresolved>' 'CICSPROD.DAILY.CMF(0)' Scroll ===> CSR_
****** ************************** Top of Data *****************************
000001 //CICSPA   JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB LOAD JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
000005 //CPAHDBRG DD  DSN=CICSPROD.CICSPA.HDB.REGISTER,DISP=SHR
000006 //SYSPRINT DD  SYSOUT=*
000007 //* SMF Input Files
000008 //* SMF Files that follow have unresolved DSNs
000009 //* SMF File for System=CICSPROD
000010 //SMFIN901 DD DSN=<unresolved>,DISP=SHR
000011 //* Command Input
000012 //SYSIN DD *
000013 * HDB=CICSWEEK
000014 * Description=Weekly CICS Transactions
000015         CICSPA SMFSTART(0,09:00:00.00),
000016                SMFSTOP(0,16:30:00.00)
000017 * HDB Load for System=CICSPROD
000018         CICSPA IN(SMFIN901),
000019                APPLID(CICSPROD),
000020                LINECNT(60),
000021                FORMAT(':','/'),
000022              HDB(OUTPUT(HDBL0001),LOAD(CICSWEEK))
000023 /*
```

Figure 369. Edit JCL for Load Summary HDB

The SMF file data set name for system CICSPROD is unresolved. This indicates
that the System Definition for CICSPROD does not have SMF files specified.
Substitute the required SMF file data set name into the JCL.

The command deck specifies operands to load HDB CICSWEEK:

`HDB(OUTPUT(HDBL0001),LOAD(CICSWEEK))`

Enter **SUBmit** in the command line to submit the job to run the load.

If you selected the **Load DB2 Table** option, then the JCL contains additional
statements to export the data to DB2 after loading the HDB. If successful, the HDB
load step writes the list of created HDB containers to a PDS member. After the HDB
load step, an IEBGENER step copies the contents of the PDS member in-stream to
the DB2 load utility DSNUTILB skeleton JCL. The figure below shows an example
of this JCL.

```
//CICSPADH JOB (ACCOUNT),'CICSPA HDB LOAD'
//* Delete HDB Container Data Set
//DELETE   EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
 DELETE CICSPAD.CICSPA.HDB.CONTDSN                         1
 SET MAXCC=0
/*
//* CICSPA V1R4 Report JCL
//CICSPA   EXEC PGM=CPAMAIN
//STEPLIB  DD DISP=SHR,DSN=CPP140.PROD.SCPALINK
//CPAHDBRG DD DISP=SHR,DSN=CPA140.HDB.REGISTER
//CPAHDBCD DD DSN=CICSPAD.CICSPA.HDB.CONTDSN,              2
//            DISP=(NEW,CATLG),SPACE=(CYL,(1,1,10))
//SYSPRINT DD SYSOUT=*
//* SMF Input Files
//SMFIN001 DD DISP=SHR,DSN=PRODA.SMF.G4817V00
//* Command Input
//SYSIN DD *
* Report Set =HDBXDMO
* Description=CICS PA Report Set
        CICSPA SMFSTART(2005/11/01,00:00:00.00),
               SMFSTOP(2005/11/01,22:00:00.00)
* Reports for System=CICSPA1
*            Description=HDB Export Demo
        CICSPA IN(SMFIN001),
               APPLID(CICSPA1),
               LINECNT(60),
               FORMAT(':','/'),
               PRECISION(4),
           HDB(OUTPUT(HDBL0001),LOAD(DAILYPER)),
/*
//*
```

Figure 370. JCL for HDB load followed by export to DB2 (Part 1 of 2)

```
//CPADDCPY EXEC PGM=IEBGENER,COND=(8,LT,CICSPA)        3
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  DUMMY
//SYSUT2   DD  SYSOUT=(A,INTRDR)
//SYSUT1   DD  DATA,DLM=$$
//CICSPADH JOB (ACCOUNT),'CICSPA HDB LOAD'
//DSNUPROC EXEC PGM=DSNUTILB,REGION=0M,
//         PARM='DB2P'
//STEPLIB  DD  DISP=SHR,DSN=DB2.V810.SDSNLOAD
//         DD  DISP=SHR,DSN=DB2.V810.SDSNEXIT
//SYSPRINT DD  SYSOUT=*
//UTPRINT  DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//SYSUT1   DD  UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SORTOUT  DD  UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SYSIN    DD  *
LOAD DATA RESUME YES
   INTO TABLE CPADB.DAILYPER (
     START            POSITION(1)  TIMESTAMP EXTERNAL(26),
:
:
)
/*
$$
//        DD   DSN=CICSPAD.CICSPA.HDB.CONTDSN(DAILYPER),
//             DISP=SHR
```

Figure 370. JCL for HDB load followed by export to DB2 (Part 2 of 2)

1   To ensure integrity of the data loaded into DB2, the data set to which the HDB Load writes HDB container data set names is deleted at the start of every HDB Load job that includes the DB2 table load.

2   The HDB Load step writes the list of created HDB container data set names (formatted as DD cards) to a member in the partitioned data set '&SYSUID.CICSPA.HDB.CONTDSN', where &SYSUID is the user ID of the user generating the JCL and the member name is the name of the HDB being loaded.

   If the HDB Load fails to create containers (due to an error, or because no records were selected), then this PDS member will contain the single DD card:

   ```
   //SYSREC   DD  DUMMY
   ```

   This card will be used as input to the DB2 Load Utility. If the DB2 table load option REPLACE is selected, then the result will be an empty DB2 table. This DUMMY card is required to avoid the IEBGENER job step error failing the whole job. This is particularly important in cases where the job loads multiple DB2 tables.

3   The IEBGENER job step inserts the contents of the PDS member (generated by the earlier HDB Load step) in-stream, for use by the DB2 Load Utility (DSNUTILB).

   The IEBGENER job step will not be submitted if the HDB Load step (ddname CICSPA) terminates with a return code greater than 8. This ensures that DB2 table loads are submitted in cases where one or more HDB Loads were successful while others were not. A return code greater than 8 indicates a serious error that is likely to affect the whole job.

Load Recap report

Successful completion of the Load request will generate a Recap report.

```
V2R1M0                                    CICS Performance Analyzer
                                           HDB Load Recap Report

HDBL0001 Printed at 9:28:48 12/07/2004  Data from 09:02:00 12/07/2004 to 16:29:00 12/07/2004  Page  1

LOAD requested for HDB: CICSWEEK     Register DSN: CICSPROD.CICSPA.HDB.REGISTER

The following Container(s) were created and loaded:
  Container DSN: CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB      No of Records: 54,567
   Start Time Stamp: 2004-12-07-09.00.00          End Time Stamp: 2004-12-07-16.00.00

LOAD process complete.
```

Figure 371. HDB Load Recap report

The Recap report provides details about the HDB Load including a list of the container data sets created by the Load process. In this example, CICS PA created container data set CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB. It contains 54,567 records for the period 9:00am to 4:00pm on December 7, 2004.

HDB Reporting

After you have loaded data into an HDB it is then eligible for reporting.

Select option 4 **Report** from the HDB menu to submit a report request.

```
  File  Options  Help
 -------------------------------------------------------------------------------
                              HDB Reporting                    Row 1 to 5 of 5
 Command ===> _____ Scroll ===> CSR_

 Select to run report.

    Name     Type        Description              Changed        ID
 S  CICSDAY  LIST     Today's CICS Transactions    2004/12/11 00:00 CICSPA
 S  CICSWEEK SUMMARY  Weekly CICS Transactions     2004/12/11 00:00 CICSPA
 _  CPUTREND SUMMARY  Transaction CPU Usage Trend  2004/12/11 00:00 CICSPA
 _  PRODRESP SUMMARY  Production Transaction Response 2004/12/11 00:00 CICSPA
 _  FCHIST   SUMMARY  File Request History         2004/12/11 00:00 CICSPA
 ******************************** End of list ********************************


  F1=Help    F3=Exit    F7=Backward   F8=Forward   F10=Actions   F12=Cancel
```

Figure 372. HDB reporting

Enter line action **S** to select an HDB for reporting. You will be prompted to specify run-time options, then CICS PA will build the JCL to run the report against your HDB.

You can select multiple HDBs to report in succession.

SORT and **LOCATE** commands are available to help you work with the list of HDBs.

Run List HDB report

Select the desired HDB for reporting and the run-time prompt panel is displayed. This is an example of a request for a List HDB report.

```
  File  Options  Help
 --------------------------------------------------------------------
                    Run LIST HDB Report - CICSDAY
 Command ===> _____

 Specify Report request options then press Enter to continue submit.

 Report Format:                          ------ Report Interval ------
  Report Form  . . _____  +              YYYY/MM/DD  HH:MM:SS.TH
                                          From 2004/11/30  _____
                                          To   2004/12/01  _____
 Enter "/" to select option
 /  Edit JCL before submit

 HDB contains data from 2004/12/01 08:03 to 2004/12/13  08:13


  F1=Help     F3=Exit    F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 373. Run List HDB report

This panel is displayed before CICS PA generates the JCL to run the report and shows the time period spanned by the data in the HDB.

Optionally, specify the following run-time options:

Report Form

> The name of a Report Form to be used to tailor the format and content of the HDB report. The Report Form must be a compatible type to the HDB. For a List HDB, either a LIST or LISTX Report Form. To select the name from a list of compatible Report Forms, press **Prompt** (F4).

> CICS PA JCL generation translates the Report Form specification into the `FIELDS` operand.

> If a Report Form is not specified, a report showing all fields in the HDB is produced.

Precision

> The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is **4.**
> - 4 decimal places is 0.0001 precision
> - 5 decimal places is 0.00001 precision
> - 6 decimal places is 0.000001 microsecond precision

> This option generates the `PRECISION(n)` global operand.

Report Interval

> Specify a date/time range or a *time slot* (times only) to filter the HDB input data based on the SMF record time stamp. HDB records with a time stamp within the specified From–To interval are processed by CICS PA, otherwise they are ignored.

> **Note:** Do not confuse this with the Selection Criteria From–To report intervals which apply to transaction start and stop times.

> The From–To date and time fields are all optional. They are blank initially (for no filtering), but thereafter display the reporting period that was previously saved.

> **Date** is either a calendar date in your preferred format or a relative date. **Time** is a time-of-day. (The same edit rules apply as for the Selection Criteria Report Interval.)

> Relative dates are specified as 0, -1, -2,... to signify a date relative to the current date. 0 represents today, -1 yesterday, -2 two days ago, and so on. If both Start and Stop dates are specified, they must be in the same format.

> For a date/time range:
> - Either From or To can be omitted to indicate that the range is open-ended.
>   - If From is omitted, it defaults to the first input record
>   - If To is omitted, it defaults to the end of file.
> - If From date is specified with no time, the start of day is assumed.
>   If To date is specified with no time, the end of day is assumed.

> For a time slot, both times must be present with no dates to signify the same time slot every day. The times can span midnight.

> The specified date/time range is included in the generated JCL under the `//SYSIN DD` statement:

```
                    CICSPA SMFSTART(-nn|yyyy/mm/dd,hh:mm:ss.th),
                           SMFSTOP(-nn|yyyy/mm/dd,hh:mm:ss.th)
```

Edit JCL before submit

Select with a **/** to edit the JCL before submit. CICS PA will generate the JCL and display it in an ISPF Edit session. You can review or modify the JCL using the usual ISPF Edit commands and actions, or you can use the CREATE command to save the JCL in an external data set.

Then to submit the job, enter **SUBmit** in the Edit command line.

If this option is not selected, the generated JCL is not displayed and the job is submitted immediately.

Once you have specified your report options, press **Enter** to continue submit. You will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your report request.

Select a Report Form

To tailor the format of the HDB report, select a Report Form. Press **Prompt** (F4) from the Form field on the Run Report panel. Only Forms of compatible type are listed. The following example shows a list of available List Report Forms for a List HDB report.

```
   File  Help
  ------------------------------------------------------------
                      Report Forms          Row 1 to 3 of 3
   Command ===> _____  Scroll ===> PAGE

   Select a Report Form then press Enter.

       Name      Type             Description
   .   LISTFRM1  LIST     List Report Form
   .   RESPLIST  LIST     List Report Form
   S   TRANLIST  LIST     List Report Form
   *********************** End of list ***********************
```

Figure 374. Select a Report Form (LIST Example)

This panel displays the Report Forms defined in the current Report Forms data set. Only Report Forms of a compatible type to the type of HDB are presented:

  List HDB - LIST Form
  Summary HDB - SUMMARY Form

To select a Report Form, enter line action **S** (or point-and-shoot).

Run Summary HDB report

Select the desired HDB for reporting and the run-time prompt panel is displayed. This is an example of a request for a Summary HDB report.

```
   File  Options  Help
 -----------------------------------------------------------------------
                      Run SUMMARY HDB Report - CICSWEEK
 Command ===> _____

 Specify Report request options then press Enter to continue submit.


 Report Format:                            ----- Report Interval ------
  Report Form  . . _____    +                YYYY/MM/DD  HH:MM:SS.TH
                                           From 2004/12/07  09:00:00.00
                                           To   2004/12/07  16:00:00.00


 Processing Options:
  Time Interval . . . 00:01:00
  Totals Level  . . . 8 (blank or 0-8)
  Precision . . . . . 6

 Enter "/" to select option
 /  Edit JCL before submit

 HDB contains data from 2004/12/07 09:00 to 2004/12/07 16:00.


  F1=Help      F3=Exit     F4=Prompt    F6=Resize  F10=Actions F12=Cancel
```

Figure 375. Run Summary HDB report

This panel is displayed before CICS PA generates the JCL to run the report and shows the time period spanned by the data in the HDB.

The run-time options are the same as those that apply to the List HDB report (see "Run List HDB report" on page 630), with the following additional options:

Time Interval

Specify an optional Time Interval when reporting Summary HDBs. If you leave it blank, the default is the Time Interval used to create the data (as defined in the Template). You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In the example above, the Interval has been changed to 1 hour.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:
1 becomes 00:01:00
1.1 becomes 00:01:00 (rounded down from 00:01:01)
1.1.1 becomes 01:00:00 (rounded down from 01:01:01)

This option generates the INTERVAL(hh:mm:ss) operand.

Totals Level

The totals level applies to the Summary HDB report.

Specify TOTALS(1) to TOTALS(8) to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. Default: **TOTALS(8)**

Specify TOTALS(0) for no subtotals, but print only the grand total.

Specify NOTOTALS for neither subtotals nor grand total.

Precision

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is **4.**

- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 microsecond precision

This option generates the PRECISION(n) global operand.

Once you have specified your Report options, press **Enter** to continue submit. You will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your report request.

HDB report JCL

If you selected **Edit JCL before submit** then the Report HDB JCL is displayed in an edit session.

```
EDIT        JCH.SPFTEMP2.CNTL                        Columns 00001 00072
Command ===> SUB_____ Scroll ===> CSR_
****** *************************** Top of Data ****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB Report JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD DISP=SHR,DSN=CPA.V2R1M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REGISTER
000006 //SYSPRINT DD SYSOUT=*
000007 //* Command Input
000008 //SYSIN DD *
000009 * HDB=CICSWEEK
000010 * Description=Weekly CICS Transactions
000011         CICSPA SMFSTART(2004/12/07,09:00:00.00),
000012                 SMFSTOP(2004/12/07,16:00:00.00)
000013         CICSPA NOAPPLID,
000014               LINECNT(60),PRECISION(4),
000015               FORMAT(':','/'),
000016             HDB(OUTPUT(HDBR0001),REPORT(CICSWEEK),
000017               NOTOTALS,
000018               INTERVAL(01:00:00))
000019 /*
000020 //* HDB Container Data Sets. HDB Report processing does not require
000021 //* these data sets to be included in the JCL as they are dynamically
000022 //* allocated when required. They are included:
000023 //* 1) for your reference
000024 //* 2) to ensure that all required data sets are cataloged
000025 //* 3) to allow DFHSM to recall required data sets up front
000026 //HDB00001 DD DISP=SHR,DSN=CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB
****** *************************** Bottom of Data **************************
```

Figure 376. Edit JCL for Summary HDB report

The HDB container data sets are listed at the bottom of the JCL. They are not required here because the CICS PA batch reporting utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL

primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to report against HDB CICSWEEK:

```
HDB(OUTPUT(HDBR0001),REPORT(CICSWEEK))
```

Enter **SUBmit** in the command line to submit the job to run the report.

HDB report output

Successful completion of the Report request will generate an HDB Summary report.

```
V2R1M0                                    CICS Performance Analyzer
                                         Historical Database Summary

HDBR0001 Printed at 12:20:43  12/09/2004     Data from 09:00:00 12/07/2004 to 16:00:00 12/07/2004                          Page  1

                                          Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Start            MVS  APPLID   Tran   #Tasks Response Dispatch User CPU Suspend DispWait FC Wait  IR Wait SC24UHWM SC31UHWM
Interval                                   Time     Time     Time     Time     Time     Time     Time
2004/12/07 09:00 MVS1 CICSPROD ABRA       1   .2729    .0009    .0006    .2720    .0000    .0000    .2719        0        0
2004/12/07 09:00 MVS1 CICSPROD ASIX       2   .2184    .0009    .0006    .2175    .0000    .0000    .2175        0        0
2004/12/07 09:00 MVS1 CICSPROD ATRA       1  1.6067    .0008    .0005   1.6058    .0000    .0000   1.6057        0        0
2004/12/07 09:00 MVS1 CICSPROD BLIX       1   .0845    .0008    .0005    .0836    .0000    .0000    .0835        0        0
2004/12/07 09:00 MVS1 CICSPROD CRVI       1   .0004    .0004    .0000    .0000    .0000    .0000    .0000        0        0
2004/12/07 09:00 MVS1 CICSPROD CSMI       2   .0107    .0006    .0004    .0101    .0000    .0000    .0101        0        0
2004/12/07 09:00 MVS1 CICSPROD DEBT       1   .0038    .0006    .0004    .0032    .0000    .0000    .0031        0        0
2004/12/07 09:00 MVS1 CICSPROD OPIC       1   .0236    .0008    .0006    .0227    .0000    .0000    .0227        0        0
2004/12/07 09:00 MVS1 CICSPROD RESU       1   .0341    .0009    .0006    .0332    .0000    .0000    .0332        0        0
2004/12/07 09:00 MVS1 CICSPROD RGYM       1   .0056    .0010    .0007    .0046    .0000    .0000    .0045        0        0
2004/12/07 09:00 MVS1 CICSPROD T050       2   .0296    .0009    .0006    .0288    .0000    .0000    .0286        0        0
2004/12/07 09:00 MVS1 CICSPROD T096       1   .0398    .0012    .0005    .0386    .0001    .0000    .0385        0        0
2004/12/07 09:00 MVS1 CICSPROD XYLO       1   .0010    .0009    .0001    .0001    .0000    .0000    .0000    11600    16368
```

Figure 377. HDB Summary report (no totals)

HDB Export to DB2 tables

After you have loaded data into an HDB it is then eligible for export to DB2.

Summary HDB data is the most commonly used for performance reporting. It is already summarized by time.

List HDB data is typically used to drill down to isolate performance problems or for ad-hoc reporting. Take care when exporting List HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

Select option 5 **Export** from the HDB menu to export HDB data into a DB2 table.

```
   File  Options  Help
 -----------------------------------------------------------------------------
                              HDB Exporting                  Row 1 to 5 of 5
 Command ===> _____ Scroll ===> CSR_

 Select to export HDB to DB2.

    Name     Type           Description                Changed       ID
 _  CICSDAY  LIST     Today's CICS Transactions     2004/12/11 00:00 CICSPA
 S  CICSWEEK SUMMARY  Weekly CICS Transactions      2004/12/11 00:00 CICSPA
 _  CPUTREND SUMMARY  Transaction CPU Usage Trend   2004/12/11 00:00 CICSPA
 _  PRODRESP SUMMARY  Production Transaction Response 2004/12/11 00:00 CICSPA
 _  FCHIST   SUMMARY  File Request History          2004/12/11 00:00 CICSPA
 ******************************* End of list *******************************

  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 378. HDB exporting

Export HDB

Select the required HDB to display its list of container data sets.

```
   File  Options  Help
 -----------------------------------------------------------------------------
                               Export HDB                    Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Export HDB data set.

 Name . . : CICSP1

    Data Set Name                                      Start       Volume
 S  CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB   2004/12/07 09:00:00  USER01
 ******************************* End of list *******************************

  F1=Help     F3=Exit     F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 379. Export HDB

This is the list of container data sets in the HDB. Enter line action **S** to select one or more container data sets to export to DB2.

Export HDB Data Set

CICS PA can export several container data sets at a time. Select the data sets that contain the data in the required time range to be exported into DB2.

```
   File   Options   Help
  ---------------------------------------------------------------------
                           Export HDB Data Set
  Command ===> _____

  HDB Name  . . . : CICSWEEK
  Data Set Name . : CICSPA.HISTORY.CICSWEEK.D03219.T092846.HDB

  Select option
  1  1. Create DDL to define table        2. Load data into table

  Create Options                          Load Options
  _   Create Database                     1   1. Resume
  _   Create Storage Group                    2. Replace

  DB2 Settings:
   DB2 Subsystem ID . . .  DB2P
   DSNTIAD Plan Name  . .  DSNTIA71
   DB2 Load Library . . .  'DB2.V710.SDSNLOAD'_____
   DB2 Exit Library . . .  'DB2.V710.SDSNEXIT'_____
   DB2 RUNLIB Library . .  'DB2.V710.RUNLIB.LOAD'_____
   Database . . . . . . .  CICSPA__  Storage Group  . . SYSDEFLT
   VCAT Catalog name  . .  USER____  Volume . . . . . . DA0001
   Allocation: Primary    20_____   Secondary  . . . . 20____

  Include Clock Field Components          Summary Options
  1  1. Time and Count                    /   Include Sums of Squares
     2. Time only
     3. Count only

   F1=Help     F3=Exit      F7=Backward  F8=Forward  F10=Actions  F12=Cancel
```

Figure 380. Export HDB Data Set

Exporting HDB data into DB2 is a two step process, controlled by the **Select Option.** First step is to create the DDL to define the DB2 table. Second step is to load the data into the DB2 table. You can then use your favorite DB2 query tool to analyze the data.

Step 1.   "Creating DDL to define a DB2 table"
Step 2.   "Loading data into the DB2 table" on page 639
Step 3.   Chapter 19, "Analyzing HDB DB2 Export data," on page 659

Creating DDL to define a DB2 table

JCL is built that contains the CREATE TABLE statement required to define the DB2 table for this HDB data set. The HDB name is used as the table name, however you can change this by editing the JCL.

The options are:

Create Options

Select **Create Database** if you want the CREATE TABLE statement to be preceded by a CREATE DATABASE statement to define the DB2 database. You may need to ask your DB2 administrator to do this for you if you do not have sufficient authority.

HDB Export to DB2 tables

Select **Create Storage Group** if you want the CREATE TABLE statement to be preceded by a CREATE STOGROUP statement to define the DB2 Storage Group.

DB2 Settings

Specify the required DB2 settings for your environment. CICS PA only provides a basic facility to load data into DB2. It does not provide any management or reporting capabilities once the data is in DB2.

If you omit any DB2 settings, CICS PA will insert parameter markers such as **<setting>** in the JCL stream.

CICS PA uses DSNTIAD, the sample Dynamic SQL program to execute the DDL that defines the table.

The options are:

DB2 Subsystem ID	The DB2 Subsystem ID to be used to for the Export function.
DSNTIAD Plan Name	The Plan name for the dynamic SQL program (DSNTIAD), for example DSNTIA71.
DB2 Load Library	The DB2 SDSNLOAD Load Library data set name.
DB2 Exit Library	The DB2 SDSNEXIT Exit Library data set name.
DB2 RUNLIB Library	The DB2 RUNLIB.LOAD Application Load Library data set name.
Database	The DB2 Database name that is to contain the tables.
Storage Group	The DB2 Storage Group name for the DB2 Table Spaces.
VCAT Catalog name	Identifies the integrated catalog facility catalog for the storage group.
Volume	Defines the volume of the storage group.
Primary Allocation	Specifies the minimum primary space allocation (PRIQTY) for DB2-managed data sets.
Secondary Allocation	Specifies the minimum secondary space allocation (SECQTY) for DB2-managed data sets.

Include Clock Field Components

CMF performance class Clock fields accumulate data for both their count and time components in the HDB. You have a choice as to which components to load into DB2. For example, selecting **Time only** will load the time component but not the count component. Time only is sufficient for most analysis requirements.

Summary Options

Specify **Include Sums of Squares** to load sum-of-square values into the DB2 Table. CICS PA always loads the Total. This allows you to calculate

averages. Sums of Squares are required to calculate standard deviation and peak percentiles. Totals (and not Sums of Squares) is sufficient for most analysis requirements.

Review the JCL (like that shown in Figure 299 on page 550) then submit to create the DB2 table.

Review the job output in SDSF to verify that the table was created successfully.

Loading data into the DB2 table

JCL is built that contains the DB2 Load Utility statement required to load the HDB data set into the DB2 table that was defined in the previous step.

CICS PA uses the DB2 Load Utility to load data into the table.

The options are:

Load Options

Select **Resume** if you want the DB2 Load Utility to resume loading data into the table. Typically, this is appropriate for Summary HDBs.

Select **Replace** if you want the DB2 Load Utility to replace data already loaded in the table. Typically, this is appropriate for List HDBs.

Review the JCL (like that in Figure 300 on page 553), then submit to load the DB2 table.

Review the job output in SDSF to verify that the table was created successfully.

Analyzing the DB2 data

After HDB data has been loaded into DB2, you can use you favorite DB2 query tool to analyze the data. Refer to Chapter 19, "Analyzing HDB DB2 Export data," on page 659 for examples of how to use QMF SQL queries to analyze the data.

HDB Extract to CSV

After you have loaded data into an HDB it is then eligible for extract to CSV data sets.

Select option 6 **Extract** from the HDB menu to request an HDB extract..

```
  File  Options  Help
 ------------------------------------------------------------------------------
                              Extract HDBs                    Row 1 to 1 of 1
 Command ===> _____ Scroll ===> CSR_

 Select to run report.

    Name     Type              Description               Changed        ID
 S CICSP1H  SUMMARY  Summary HDB for CICSP1          2004/12/07 09:28 JCH
 ******************************* End of list *******************************

  F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 381. HDB Extract

Select the required HDB from the list to display the Run Extract panel.

HDB Extract to CSV

```
                    Run SUMMARY HDB Extract - CICSP1H
Command ===> _____

Specify Extract request options then press Enter to continue submit.

----- Report Interval ------   HDB contains data
     YYYY/MM/DD  HH:MM:SS.TH   in the range:
From 2004/12/15  _____    2004/11/17 05:17   Extract Recap:
To   2004/12/16  _____    2005/01/17 21:31   DDname . . . HXTS0001

Output Data Set:
 Data Set Name . . HDB.EXTRACT_____
 Disposition . . . 1  1. OLD   2. MOD   (If cataloged)

Extract Format:                        Enter "/" to select option
 Form  . . . . . . _____  +          /  Include Field Labels
 Delimiter . . . . ;                    _  Numeric Fields in Float format

Processing Options:                    Enter "/" to select option
 Time Interval . . 01:00:00 (hh:mm:ss) /  Edit JCL before submit
 Precision . . . . 4        (4-6)

 F1=Help    F3=Exit     F4=Prompt   F6=Resize  F12=Cancel
```

Figure 382. Run Summary HDB Extract

The options are:

Report Interval

Specify the reporting time range. You can specify an explicit date, such as 2004/12/15, or a relative date to indicate today (0), yesterday (-1), two days ago (-2), and so on. Adjacent is the time range of data contained in this HDB. If you specify a Report Interval, then it must be within this range otherwise the extract request will fail.

Extract Recap DDname

The DDname for the Recap report which prints at the end of extract processing to provide processing statistics. The DDname is mandatory.

CICS PA assigns a default DDname **HXTS0001.**

This option generates the OUTPUT(ddname) operand.

Output Data Set

The name of the data set where the extract records are written. When specifying the data set name, standard TSO conventions apply.

If CICS PA is to create the data set at run time, the default allocation attributes specified on the Reporting Allocation Settings panel are used in generating the JCL. If the data set is already cataloged, then CICS PA will use DISP=OLD or DISP=MOD according to your request to overwrite or append to the existing data set.

CICS PA generates the DDNAME(ddname) operand and assigns a default DDname **HDBX0001.**

Disposition

This option applies if the extract data set you specified is already cataloged.

Select option **1 - OLD** to overwrite the data set contents with the new extract data.

Select option **2 - MOD** to append the new extract data.

Report Form

Specify a Report Form to tailor the format of the extract records. If you do not specify a Form, CICS PA will write all the fields in the HDB in order.

Delimiter

Specify the field delimiter to be used to separate each data field in the extract data set. The default is a semicolon and generates the `DELIMIT(';')` operand.

Include Field Labels

Select this option to indicate that the first record to be written to the extract data set is to be a field labels record. This is the default and generates the `LABELS` operand.

Leave blank if you do not want a field labels record written to the extract data set. This generates the `NOLABELS` operand.

Numeric Fields in Float format

Select this option if you want CICS PA to write numeric fields to the extract data set in S390 FLOAT format. This generates the `FLOAT` operand. Specify FLOAT format if you plan to import the extract into a DB2 table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If you do not select this option, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool. This generates the `NOFLOAT` operand.

Time Interval

Specify an optional Time Interval when extracting Summary HDBs. The default is the Time Interval used to create the data (as defined in the Template). In our example, Template PRODSUM used to create the HDB data specified 15 minutes.

You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In the example above, the Interval has been changed to 1 hour.

Precision

The precision of numeric fields. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is **4**.
- 4 decimal places is 0.0001 precision
- 5 decimal places is 0.00001 precision
- 6 decimal places is 0.000001 microsecond precision

This option generates the `PRECISION(n)` global operand.

Once you have specified your Extract options, you will be prompted to **Press ENTER to proceed with request.** This provides a last opportunity to review and change your request details.

If you selected **Edit JCL before submit** then the Extract HDB JCL is displayed in an edit session.

HDB Extract to CSV

```
EDIT       userid.SPFTEMP2.CNTL                        Columns 00001 00072
Command ===> _____ Scroll ===> CSR_
****** ************************** Top of Data ****************************
000001 //CICSPA  JOB ,NOTIFY=&SYSUID
000002 //*  CICS PA V2R1 HDB EXTRACT JCL
000003 //CICSPA    EXEC PGM=CPAMAIN
000004 //STEPLIB  DD DISP=SHR,DSN=CPA.V2R1M0.SCPALINK
000005 //CPAHDBRG DD DISP=SHR,DSN=CICSPROD.CICSPA.HDB.REGISTER
000006 //SYSPRINT DD SYSOUT=*
000007//HDBX0001 DD  DSN=userid.HDB.EXTRACT,
000008//           DISP=(OLD)
000009 //* Command Input
000010 //SYSIN DD *
000011 * HDB=CICSP1H
000012 * Description=Summary HDB for CICSP1H
000013        CICSPA SMFSTART(2004/12/15,00:00:00.00),
000014               SMFSTOP(2004/12/16,00:00:00.00)
000015        CICSPA NOAPPLID,
000016              LINECNT(60),
000017              FORMAT(':','/'),
000018              PRECISION(4),
000019            HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),
000020              OUTPUT(HXTS0001),LABELS,DELIMIT(';'),NOFLOAT,
000021              INTERVAL(01:00:00))
000022 /*
000023 //* HDB Container Data Sets. HDB Report processing does not require
000024 //* these data sets to be included in the JCL as they are dynamically
000025 //* allocated when required. They are included:
000026 //* 1) for your reference
000027 //* 2) to ensure that all required data sets are cataloged
000028 //* 3) to allow DFHSM to recall required data sets up front
000029 //HDB00001 DD DISP=SHR,DSN=userid.CICSP1H.D03219.T092846.HDB
****** *************************** Bottom of Data ****************************
```

Figure 383. Edit JCL for Summary HDB Extract

The HDB container data sets are listed at the bottom of the JCL. They are not required here because the CICS PA batch utility will dynamically allocate the data sets when they are required. CICS PA adds the data sets into the JCL primarily for the purpose of DFHSM recall, if required. It is more efficient to recall data sets in the JCL (where job initiation can recall migrated data sets en masse) rather than one at a time when dynamically allocated.

The command deck specifies operands to extract records from HDB CICSP1H, write them to the extract data set with DDname HDBX0001, and write the Recap report output to the DDname HXTS0001:

```
HDB(DDNAME(HDBX0001),EXTRACT(CICSP1H),OUTPUT(HXTS0001),...)
```

Enter **SUBmit** in the command line to submit the job to run the report.

Successful completion of the Extract request will generate an HDB Summary Extract Recap report.

```
    V2R1M0                                       CICS Performance Analyzer
                                                Historical Database Summary
    HXTS0001 Printed at  8:29:25  3/15/2005     Data from 15:00:00 12/15/2004 to 00:00:00 12/16/2004                Page      1


    HDBX0001 Extract has completed successfully
            Data Set Name . . . . userid.HDB.EXTRACT
            Record count  . . . .       788
```

Figure 384. HDB Summary Extract Recap report

The extract data set contains records like those in the following example.

```
Start Date;Start Time;MVS;APPLID;Tran;#Tasks;Response Time Avg;Dispatch Time Avg;User CPU Time Avg;Suspend Time
2004/12/15 15:00:00;MV2C   ;IYK3ZAC1;CSHQ   ;   1;55155.62;   .2103;   .0212;55155.41;   .0331;   .0001;
2004/12/15 15:00:00;MV2C   ;IYK3ZAC1;CSNC   ;   1;55159.06;   .3379;   .0041;55158.72;   .0356;   .0001;
2004/12/15 15:00:00;MV2C   ;IYK3ZAC1;CSNE   ;   1;55153.97;   .0881;   .0060;55153.88;   .0042;   .0001;
2004/12/15 18:00:00;MV2C   ;IYK2ZFV1;CEX2   ;   1;50237.83;   .5030;   .2717;50237.33;   .1800;   .0001;
2004/12/15 18:00:00;MV2C   ;IYK2ZFV1;CSHQ   ;   1;50234.95;   .3105;   .0190;50234.64;   .5761;   .0001;
2004/12/15 18:00:00;MV2C   ;IYK2ZFV1;CSNC   ;   1;50393.54;   .4259;   .0058;50393.12;   .0026;   .0001;
2004/12/15 18:00:00;MV2C   ;IYK2ZFV1;CSNE   ;   1;50389.87;   .1321;   .0177;50389.74;   .0074;   .0001;
2004/12/15 18:00:00;MV2C   ;IYK2ZFV2;CEX2   ;   1;50241.24;   .2630;   .1828;50240.98;   .2255;   .0001;
```

Figure 385. HDB Summary Extract record format

Tailoring the HDB extract format

The format of the extract records can be changed by specifying a Report Form. The process for HDB Extract is the same as applying a Report Form to an HDB Report. For more information, see "Tailoring the HDB report format" on page 544.

Analyzing the extract data

After HDB data has been loaded into an extract data set in CSV format, you can use you favorite PC analysis tools, such as Lotus 1-2-3 or Excel, to analyze the data. Refer to Chapter 20, "Analyzing HDB CSV extract data," on page 667 for examples of how to use such tools to analyze the data.

HDB Maintenance

Select option 7 **Maintenance** from the HDB menu to maintain your HDB environment. You can delete an HDB or change its options.

```
   File  Options  Help
  -----------------------------------------------------------------------------
                              HDB Maintenance                    Row 1 to 5 of 5
  Command ===> _____ Scroll ===> CSR_

  Select to maintain HDB definition and its data sets.

  /  Name      Type         Description                 Changed          ID
  _  CICSDAY   LIST      Today's CICS Transactions     2004/12/11 00:00 CICSPA
  S  CICSWEEK  SUMMARY   Weekly CICS Transactions      2004/12/11 00:00 CICSPA
  _  CPUTREND  SUMMARY   Transaction CPU Usage Trend   2004/12/11 00:00 CICSPA
  _  PRODRESP  SUMMARY   Production Transaction Response 2004/12/11 00:00 CICSPA
  _  FCHIST    SUMMARY   File Request History          2004/12/11 00:00 CICSPA
  ****************************** End of list ********************************

   F1=Help    F3=Exit    F7=Backward    F8=Forward    F10=Actions    F12=Cancel
```

Figure 386. HDB Maintenance

This panel lists the defined HDBs.

Line Actions: The following line actions are available to maintain
/	Display the selection list of line actions
E	Edit (maintain) the HDB.
S	Select the HDB (same as Edit).
D	Delete the HDB. The HDB Definition will be deleted immediately. The HDB data sets will be deleted when Housekeeping is next run.
A	Display the audit trail of load requests for the HDB. For details, see "HDB Load Audit" on page 647.

Primary Commands: **SORT** and **LOCATE** commands are available to help you work with the list of HDBs.

Maintain HDB definitions

Select an HDB from the list to review and update the options.

```
  File  Systems  Options  Help
 ------------------------------------------------------------------------------
                              Maintain HDB                           More: >
 Command ===> _____

 Review and update HDB definition options then press EXIT to save.

 Name . . . . . : CICSP1   Type SUMMARY  APPLID  CICSP1__ +  Image  _____
 Description  . . Summary HDB for CICSP1_____

 Specify View . . 1  1. Options  2. Data Sets

 HDB Format:                            Selection Criteria:
  Template  . . . PRODSUM_  +             _  Performance

 Data Retention Period:
  Years . . 10_  Months . . ___  Weeks . . ___  Days . . ___   Hours . . ___

 Data Set Allocation Settings:
  DSN Prefix . . . . . . USER_____
  Management class . . . _____     (Blank for default management class)
  Storage class  . . . . _____     (Blank for default storage class)
   Volume serial . . . . _____        (Blank for system default volume)
   Device type . . . . . _____     (Generic unit or device address)
  Data class . . . . . . _____     (Blank for default data class)
   Space Units . . . . . CYLS____     (TRKS, CYLS)
   Primary quantity  . . 20_____      (In above units)
   Secondary quantity    20_____      (In above units)

  F1=Help    F3=Exit    F4=Prompt    F7=Backward    F8=Forward    F10=Actions
 F11=Right   F12=Cancel
```

Figure 387. Maintain HDB definition

Scroll **Right** (F11) to switch between the two views of HDB details:

1. The HDB Definition from where you can change the HDB options. The available options are the same as on the New HDB Definition panel. For more information, see "Define a Performance HDB" on page 619.

2. The list of HDB data sets that contain data for this HDB.

Press **Exit** to save your updates or **Cancel** to discard changes.

Maintain HDB data sets

Scroll **Right** (F11) to view the list of container data sets.

Maintain HDB definitions

```
   File  Systems  Options  Help
 ----------------------------------------------------------------------------
                                 Maintain HDB              Row 1 of 1 More: >
 Command ===> _____  Scroll ===> CSR_

 Maintain HDB data sets.

 Name . . . . . : CICSP1   Type SUMMARY  APPLID  CICSP1__ +  Image  _____
 Description  . . Summary HDB for CICSP1_____

 Specify View . . 2  1. Options  2. Data Sets

 /  Data Set Name                                    Start        Volume
 S  JCH.CICSP1.D03219.T092846.HDB              2004/12/07 09:00:00  USER01
 ******************************** End of list ********************************


  F1=Help    F3=Exit     F4=Prompt    F7=Backward    F8=Forward    F10=Actions
 F11=Right  F12=Cancel
```

Figure 388. Maintain HDB data sets

The HDB container data set details shown here are:
- The name of the data set.
- The time stamp of the first record in the data set.
- If Active, the VOLSER where the data set resides.
- If delete pending, it is marked ***DELETE**.
- If expired, it is marked ***EXPIRE**.

Data sets marked *DELETE or *EXPIRE will be physically deleted when
Housekeeping is next run.

Line Actions: The following line actions are available to maintain the HDB
container data sets:

/   Display the selection list of line actions
S   Select the HDB data set to view status information. See the example below
            in Figure 389 on page 647.
B   Browse the data set using ISPF Browse.
D   Delete the HDB data set. The data set will be deleted in the HDB now, and
            physically deleted when HDB Housekeeping is next run.
U   Undo. Reverse a prior Delete action and reinstate the data set as active in
            this HDB. Undo is only available on a Deleted data set until Housekeeping
            is run.

```
                          HDB Data Set
Command ===> _____


Data Set Name  . . : JCH.CICSP1.D03219.T092846.HDB
VOLSER . . . . . . : USER01

Status . . . . . . : Active
Creation Date  . . : 2004/12/07 21:28:48
Expiry Date  . . . : 2013/12/07 21:28:48

Data Start . . . . : 2004/12/07 09:00:00
Data End . . . . . : 2004/12/07 16:00:00
Record Count . . . : 54567


 F1=Help    F3=Exit    F6=Resize F12=Cancel
```

Figure 389. View HDB data set statistics

This panel displays details about the HDB container data set:

* The name of the data set and VOLSER where it resides.
* The status of the data set, either Active or Deleted.
* The date the Load HDB was run and the data set was created.
* The expiry date of the HDB data set determined by the HDB retention period. The expiry date is blank if the data set is deleted.
* The time period spanned by the records in the data set.
* The number of records in the data set.

HDB Load Audit

From the Maintain HDBs list, enter line action A to display the audit details for a particular HDB.

The Load Audit Trail lists the SMF Files used to load data into the HDB, and the status of those requests.

```
  File  Edit  Options  Help
 ------------------------------------------------------------------------------
                          HDB Load Audit Trail            Row 1 to 2 of 2
Command ===> _____    Scroll ===> PAGE

   SMF Data Set Name                          ------ Start ------  Status
S  CPPX.CICS620.PMR52938.SMFDATA              2004/11/17 09:05:27  OK
_  CPPX.V140.SMF0818                          0000/00/00 00:00:00  FAILED
***************************** Bottom of data ******************************
```

Figure 390. HDB Load Audit Trail

The Audit details include:

SMF Data Set Name
> The data set name of the SMF Input File used for the Load request.

Start The time stamp of the first record in the SMF File.

Status
> The status of the Load request, either OK (successful) or FAILED.

Reusing an SMF File that has been successfully loaded

When you load data from an SMF File into an HDB, CICS PA updates the load audit trail for that HDB, setting the status of the SMF File to OK ("data from this SMF File was successfully loaded into this HDB"). When the status is OK, CICS PA denies any subsequent requests to load data from the SMF File into the HDB. This protects you from loading duplicate data into the HDB. However, sometimes you might want to load an HDB from the same SMF File: perhaps you want to include a different time interval or additional APPLIDs.

If you want to reuse an SMF File, change its status to Failed: enter the line action **F** next to the SMF File on the HDB Load Audit Trail panel.

Attention: You cannot undo line action F. Only a successful load of the HDB will restore the status to OK.

Line action F does not affect any of the HDB container data sets created by previous load requests. If you want to delete existing HDB container data sets, use the Maintain HDB panel to delete the data sets from the HDB, and then use the HDB housekeeping utility to physically delete the data sets.

Viewing the results of an HDB load request

To view the complete results of a Load request, enter line action **S** next to an SMF File.

```
SMF Data Set . . : CPPX.CICS620.PMR52938.SMFDATA

Status . . . . . : OK

Data Start . . . : 2004/11/17 09:05:27
Data End . . . . : 2004/11/17 09:14:59
Record Count . . : 20009
Container Count  : 13

First SMF Record:
....;$..0#....E002MQE2.........*..............................@
00005703F40032CFFFDDCF000000000D020000000000000000000000000007
2000E3010A142F50024852010000001C04010000000000000000000000000C
```

Figure 391. Audit Record

Each HDB Load request generates an Audit trail record that provides the status of the load request. The Audit details include:

SMF Data Set

The data set name of the SMF Input File used for the Load request.

Status

The status of the Load request:

- For a successful Load request, the Status is **OK.** CICS PA ensures that the Load request for this SMF File is not accidentally re-run, preventing the accidental duplication of HDB data (in container data sets).

- For a failed Load request, the Status is **FAILED.** The Load request for this SMF File must be re-run after the problem that caused the error condition is corrected, to ensure that there are no gaps in the HDB data.

Data Start

The time stamp of the first record in the SMF File.

Data End

The time stamp of the last record in the SMF File.

Record Count

The total number of records written to container data sets.

Container Count

The total number of container data sets created.

First SMF Record

The first 64 bytes of the first SMF record in the file. CICS PA uses this record to ensure that only one successful load request is run for this SMF File.

HDB Housekeeping

Select option 8 **Housekeeping** from the HDB menu to perform HDB housekeeping.

```
                     HDB Housekeeping
Command ===> _____

Register . . : USER.CICSPA.HDB.REGISTER

Select one of the following options
1  1. Submit HDB Housekeeping JCL
   2. Repair HDB Register using VERIFY command

Enter "/" to select option
/  Edit JCL before submit

 F1=Help     F3=Exit     F6=Resize   F12=Cancel
```

Figure 392. HDB Housekeeping

HDB Housekeeping performs tasks to re-organize and clean up your HDB environment:

1. **Submit HDB Housekeeping JCL.**

   Run HDB Housekeeping periodically to delete expired HDB data sets and to re-organize the HDB Register. See "JCL for HDB housekeeping" on page 655 for an example of the JCL.

2. **Repair HDB Register using VERIFY command.**

   The IDCAMS VERIFY command is used to repair the end-of-data-set information in the VSAM Catalog for the HDB Register. Use repair if message IEC161I is being issued repeatedly. This condition is usually caused by a prior HDB dialog or batch request that failed.

Chapter 18. Using the HDB commands

The Historical Database (HDB) facility is driven from the CICS PA dialog, but has associated batch processes:
1. Load HDB
2. HDB reporting
3. HDB extract to CSV
4. HDB export to DB2
5. HDB housekeeping

For these batch processes, CICS PA dialog generates the JCL and commands automatically, but you are given the opportunity to edit them before job submission. The jobs can also be run at a later time independent of the dialog.

The HDB commands are specified in the **SYSIN DD** statement. The format of the commands is consistent with other CICS PA commands. For more information, see "General command format" on page 337.

JCL for HDB load, report, extract

The following JCL is an example of the job stream for requesting HDB load or report processing. This is the same as the JCL for generating reports and extracts (see Figure 166 on page 329), but has the following additional statement specific to HDB processing:

CPAHDBRG DD
> This DD statement identifies the HDB Register data set. The HDB Register is a VSAM KSDS that is the repository for all definitions associated with the HDB.

```
//CPAHDBP  JOB (Job Accounting)
//*
//CICSPA   EXEC PGM=CPAMAIN,PARM='UPPER'
//STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//CPAHDBRG DD  DSN=USER.CICSPA.HDB.REGISTER,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//* SMF Files for APPLID=CICSP
//SMFIN001 DD  DSN=CICS.APPL1.FILE1,DISP=SHR
//         DD  DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
//SYSIN    DD  *
* HDB=CICSP1H
* Description=Summary HDB for CICSP1
   CICSPA  SMFSTART(2004/12/01,),
           SMFSTOP(2004/12/02,)
* HDB Load for APPLID=CICSP1
   CICSPA  IN(SMFIN001),
           APPLID(CICSP1),
      HDB(OUTPUT(HDBL0001),LOAD(CICSP1H)),
      HDB(OUTPUT(HDBR0001),REPORT(CICSP1H))
/*
//* Dictionary records
//CPADICTR DD DISP=SHR,DSN=CICSPA.CICSP1.DICT
```

Figure 393. JCL for HDB load and report processing

HDB Loading

The **HDB(LOAD...)** operand requests CICS PA to load CMF performance data from SMF data sets into an HDB.

The command format is:

```
CICSPA HDB(LOAD(hdbname),
        [OUTPUT(ddname)])
```

The options are:

LOAD Specifies the name of the HDB to be loaded. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
Recap report output file name. CICS PA records the results of the Load operation in this File. If not specified, CICS PA assigns a DDname of **HDBLnnnn** where nnnn is the numerical sequence number **0001-9999.**

Note: LOAD ignores any additional HDB request operands, including FIELDS and SELECT. Load processing uses:

1. The Template to determine which fields are contained in the HDB. It does not use the FIELDS operand.
2. Selection Criteria specified in the HDB definition and its Template. It does not use the SELECT operand.

HDB Reporting

The **HDB(REPORT)** operand requests CICS PA to generate reports from HDB data.

The command format is:

```
CICSPA HDB(REPORT(hdbname),
        [OUTPUT(ddname),]
        [NOTOTALS|TOTALS(n),
        [INTERVAL(hh:mm:ss),]
        [FIELDS(field1[(options)],...),]
        [LINECount(nnn),]
        [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
        [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

REPORT
Specifies the name of the HDB to report against. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
Report output file name. See "OUTPUT" on page 344 for further information. If not specified, CICS PA assigns a DDname in the format **HDBRnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output.

NOTOTALS|TOTALS(n)
The totals level applies to the Summary HDB report.

Specify TOTALS(1) to TOTALS(8) to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. Default: **TOTALS(8)**

Specify TOTALS(0) for no subtotals, but print only the grand total.

Specify NOTOTALS for neither subtotals nor grand total.

INTERVAL

This operand applies to Summary HDBs. It specifies a time interval when the report summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds. The HDB Summary data is already summarized by time. You can omit the INTERVAL operand to use the data's interval, or specify an interval that is longer than the data interval. For example, specify 00:15:00 if you want to summarize transaction activity over 15 minute intervals.

A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.

A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.

Minutes take precedence for an abbreviated entry. For example:

1   becomes 00:01:00
1.1   becomes 00:01:00 (rounded down from 00:01:01)
1.1.1   becomes 01:00:00 (rounded down from 01:01:01)

FIELDS

Specifies which fields are reported, the order in which they appear in the report, and their summarization presentation. Only fields that are specified in the HDB Template can be specified. Fields not contained in the HDB are reported as **Missing**.

When reporting from a Summary HDB, the options for specifying fields are similar to the options for a Performance Summary report. For details, see"SUMMARY(FIELDS" on page 379.

When reporting from a List HDB, the options for specifying fields are similar to the options for a Performance List report. For details, see"LIST(FIELDS" on page 358.

LINECount

Controls the number of lines per page in the HDB report. See "LINECount" on page 345 for further information.

SELECT, SELECT2

Specifies what data to include or exclude from the report based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

Only fields that are specified in the HDB Template can be specified. Select Fields not contained in the HDB will cause selection to fail and reporting will skip the record. SELECT and SELECT2 can both be specified to perform record filtering. The CICS PA dialog generates SELECT2 statements in the command deck when you use a Report Form that has active Selection Criteria. If both SELECT and SELECT2 are specified, then the record must pass selection by both specifications for it to be included in the report.

HDB Extract to CSV

The **HDB(EXTRACT)** operand requests CICS PA to generate CSV extracts from HDB data.

The command format is:

```
CICSPA HDB(EXTRACT(hdbname),
           [OUTPUT(ddname),]
           [DDNAME(ddname),]
           [INTERVAL(hh:mm:ss),]
           [FIELDS(field1[(options)],...),]
           [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
           [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))]])
```

The options are:

EXTRACT
> Specifies the name of the HDB from which to extract data. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
> Specifies the DDname for the Recap report output. If not specified, the CICS PA dialog assigns a DDname in the format **HXTS0001** to uniquely identify the output.

DDNAME
> Specifies the DDname for the extract data set. Dialog default: **HDBX0001**

INTERVAL
> This operand applies to Summary HDBs. It specifies a time interval when the extract summarizes transaction activity over time. The interval is in the range 1 second to 24 hours in the format *hh:mm:ss* for hours, minutes, and seconds. The HDB Summary data is already summarized by time. You can omit the INTERVAL operand to use the data's interval, or specify an interval that is longer than the data interval. For example, specify 00:15:00 if you want to summarize transaction activity over 15 minute intervals.
>
> A time interval of less than one hour must fit evenly into the hour. CICS PA will round it down to the nearest interval that aligns to the hour. For example, 1.35 is reduced to 00:01:30 minutes which will produce 40 interval report lines for each hour of data.
>
> A time interval of more than one hour must fit evenly into the day. CICS PA will round it down to the nearest interval that aligns to the day. For example, 10.30.23 is reduced to 08:00:00 hours which will produce 3 interval report lines for each day of data.
>
> Minutes take precedence for an abbreviated entry. For example:
> **1**   becomes 00:01:00
> **1.1**   becomes 00:01:00 (rounded down from 00:01:01)
> **1.1.1**   becomes 01:00:00 (rounded down from 01:01:01)

FIELDS
> Specifies which fields are extracted, the order in which they appear in the extract, and their summarization presentation. Only fields that are specified in the HDB Template can be specified. Fields not contained in the HDB are written as **Missing**.

SELECT, SELECT2

Specifies what data to include or exclude from the extract based on data field values. See "Using SELECT statements" on page 452 for an explanation and examples.

Only fields that are specified in the HDB Template can be specified. Select Fields not contained in the HDB will cause selection to fail and extract will skip the record. SELECT and SELECT2 can both be specified to perform record filtering. The CICS PA dialog generates SELECT2 statements in the command deck when you use a Report Form that has active Selection Criteria. If both SELECT and SELECT2 are specified, then the record must pass selection by both specifications for it to be included in the extract.

HDB Export to DB2

The CICS PA dialog can generate JCL to define DB2 tables and then export HDBs to those tables. This JCL uses utilities supplied with DB2: DSNTIAD to define tables, and DSNUTILB to load tables.

For examples of this JCL, see Figure 299 on page 550 and Figure 300 on page 553.

You can export an HDB to DB2 either:
- In the same job in which you load the HDB with SMF data

  or
- In an export-only job, some time after loading the HDB

For an example of JCL that loads an HDB and exports to DB2 in the same job, see Figure 370 on page 627.

HDB Housekeeping

The **HDB(HKEEP)** operand requests CICS PA to perform housekeeping on the HDB Register (DDname **CPAHDBRG**). Housekeeping deletes expired HDB container data sets and removes definitions from the HDB Register that are no longer required.

The command format is:

```
CICSPA HDB(HKEEP)
```

Note: There is a second function available in HDB housekeeping, **Repair HDB Register using VERIFY command**. This is available only from the CICS PA dialog.

JCL for HDB housekeeping

The following JCL is an example of the job stream for requesting HDB housekeeping.

Using the HDB commands

```
                //CPAHDBK  JOB (Job Accounting)
                //*
                //CICSPA   EXEC PGM=CPAMAIN,PARM='UPPER'
                //STEPLIB  DD  DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
                //CPAHDBRG DD  DSN=USER.CICSPA.HDB.REGISTER,DISP=SHR
                //SYSPRINT DD  SYSOUT=*
                //SYSIN    DD  *
                   CICSPA HDB(HKEEP)
                /*
                //CPAHKDEL DD  DSN=&CPAHKDEL,DISP=(NEW,PASS),
                //         UNIT=DASD,
                //         SPACE=(CYL,(1,1))
                //*
                //DELETE EXEC PGM=IDCAMS,COND=(0,NE,HKEEP)
                //SYSPRINT DD  SYSOUT=*
                //SYSIN    DD  DSN=&CPAHKDEL,DISP=(OLD,DELETE)
```

Figure 394. JCL for HDB housekeeping

Note that the data sets are deleted by a second job step.

The IDCAMS utility is used to delete the data sets.

HDB examples

This example shows you how to use one command to request a List HDB load and report, and a Summary HDB load and report. Sample output is also shown.

```
CICSPA IN(SMFIN001),
   HDB(OUTPUT(HDBL0001),LOAD(LIST01)),
   HDB(OUTPUT(HDBR0001),REPORT(LIST01)),
   HDB(OUTPUT(HDBL0002),LOAD(SUMMARY2)),
   HDB(OUTPUT(HDBR0002),REPORT(SUMMARY2))
```

```
V2R1M0                                      CICS Performance Analyzer
                                              HDB LOAD Recap Report
HDBL0001 Printed at 14:26:48  12/14/2004     Data from 15:41:19 12/13/2004 to 16:19:11 12/13/2004                   Page      1

LOAD requested for HDB: LIST01     Register DSN: CPPX.CICSPA.HDB.REGISTER

The following Container(s) were created and loaded:
  Container DSN: SKU.LIST01.D03223.T142645.HDB                 No of Records: 119
    Start Time Stamp: 2004-12-13-15.41.19.025360  End Time Stamp: 2004-12-13-16.19.11.850894

LOAD process complete.
```

Figure 395. List HDB Load Recap report

```
V2R1M0                                  CICS Performance Analyzer
                                        Historical Database List
HDBR0001 Printed at 14:26:50  12/14/2004    Data from 15:41:28 12/13/2004                        Page       1

Start        MVS APPLID  Tran Userid   Program  TaskNo Response Dispatch User CPU Suspend DispWait FC Wait  FCAMRq IR Wait
Time                                                    Time     Time     Time     Time    Time    Time            Time
15:41:28.649 P390 CICS53A1 CPLT CICSUSER DFHSIPLT    6   .5196    .1771    .0316    .3425    .3422    .0000      0  .0000
15:41:29.598 P390 CICS53A1 CSSY CICSUSER DFHAPATT   15   .4595    .0036    .0033    .4558    .0000    .0000      0  .0000
15:41:29.604 P390 CICS53A1 CSSY CICSUSER DFHAPATT   16   .9663    .0069    .0088    .9594    .0795    .0000      0  .0000
15:41:29.610 P390 CICS53A1 CSSY CICSUSER DFHAPATT   17  4.0131    .1379    .0311   3.8752   1.7449    .0000      0  .0000
15:41:29.570 P390 CICS53A1 CSSY CICSUSER DFHAPATT   12  4.2133    .1621    .0494   4.0511   2.5906    .0000      0  .0000
15:41:29.191 P390 CICS53A1 CGRP CICSUSER DFHZCGRP   11  5.1156    .1956    .0603   4.9199   1.9401    .0000      0  .0000
15:41:29.591 P390 CICS53A1 CSSY CICSUSER DFHAPATT   14  4.7978    .1880    .0652   4.6098   2.3487    .0000      0  .0000
15:41:29.178 P390 CICS53A1 CSSY CICSUSER DFHAPATT   10  5.2738   1.4746    .2259   3.7992    .6720    .0000      0  .0000
15:41:29.177 P390 CICS53A1 CSSY CICSUSER DFHAPATT    9  5.3366    .7647    .1494   4.5719   1.6657    .0000      0  .0000
15:41:29.590 P390 CICS53A1 CSSY CICSUSER DFHAPATT   13  5.2787    .7009    .1740   4.5778   2.0694    .0000      0  .0000
15:42:24.011 P390 CICS53A1 CLQ2 CICSUSER DFHLUP     19  7.2473    .2907    .0416   6.9566   1.9555    .0000      0 3.7840
15:41:29.172 P390 CICS53A1 CSSY CICSUSER DFHAPATT  III 74.6388  48.6230  18.0249  26.0158   7.7521    .6756   1506  .0000
15:42:43.395 P390 CICS53A1 CLR2 CICSUSER DFHLUP     20   .4513    .0130    .0128    .4383    .0215    .0000      0  .4363
```

Figure 396. List HDB report

```
V2R1M0                                  CICS Performance Analyzer
                                         HDB LOAD Recap Report
HDBL0002 Printed at 14:26:49  12/14/2004    Data from 15:41:00 12/13/2004 to 16:19:00 12/13/2004    Page       1


LOAD requested for HDB: SUMMARY2   Register DSN: CPPX.CICSPA.HDB.REGISTER

The following Container(s) were created and loaded:
  Container DSN: SKU.SUMMARY2.D03323.T142648.HDB            No of Records: 70
     Start Time Stamp: 2004-12-13-15.41.00      End Time Stamp: 2004-12-13-16.19.00

LOAD process complete.
```

Figure 397. Summary HDB Load Recap report

```
V2R1M0                                  CICS Performance Analyzer
                                       Historical Database Summary
HDBR0002 Printed at 14:26:51  12/14/2004    Data from 15:41:00 12/13/2004 to 16:19:00 12/13/2004    Page       1

                                        Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Start        MVS APPLID  Tran  #Tasks Response Dispatch User CPU Suspend DispWait FC Wait  FCAMRq IR Wait SC24UHWM
Interval                              Time     Time     Time     Time    Time     Time             Time
2004/12/13 15:41 P390 CICS53A1 CGRP     1   5.1156    .1956    .0603   4.9199   1.9401    .0000      0  .0000       0
2004/12/13 15:41 P390 CICS53A1 CPLT     1    .5196    .1771    .0316    .3425    .3422    .0000      0  .0000       0
2004/12/13 15:41 P390 CICS53A1 CSSY     9  11.6642   5.7846   2.0813   5.8796   2.1025    .0751    167  .0000       0
2004/12/13 15:41 P390 CICS53A1         11  10.0557   4.7668   1.7113   5.2890   1.9277    .0614    137  .0000       0
2004/12/13 15:41 P390 CICS53T1 CGRP     1   5.4980    .7931    .0613   4.7049   3.7141    .0000      0  .0000       0
2004/12/13 15:41 P390 CICS53T1 CPLT     1    .3939    .0782    .0325    .3158    .3149    .0000      0  .0000       0
2004/12/13 15:41 P390 CICS53T1 CSSY     9  11.1753   5.7900   2.0359   5.3853   2.5363    .2112    167  .0000       0
2004/12/13 15:41 P390 CICS53T1         11   9.6790   4.8164   1.6743   4.8626   2.4415    .1728    137  .0000       0
2004/12/13 15:41 P390                  22   9.8674   4.7916   1.6928   5.0758   2.1846    .1171    137  .0000       0
2004/12/13 15:41                       22   9.8674   4.7916   1.6928   5.0758   2.1846    .1171    137  .0000       0

2004/12/13 15:42 P390 CICS53A1 CLQ2     1   7.2473    .2907    .0416   6.9566   1.9555    .0000      0 3.7840       0
2004/12/13 15:42 P390 CICS53A1 CLR2     1    .4513    .0130    .0128    .4383    .0215    .0000      0  .4363       0
2004/12/13 15:42 P390 CICS53A1 CRSQ     1    .7659    .0740    .0247    .6919    .6893    .0000      0  .0000       0
2004/12/13 15:42 P390 CICS53A1 CSFU     1    .3998    .3770    .0234    .0228    .0184    .0000      0  .0000       0
2004/12/13 15:42 P390 CICS53A1 CSHQ     1 2188.102   2.5956    .2007 2185.506    .4205    .0000      0  .0000       0
```

Figure 398. Summary HDB report

Chapter 19. Analyzing HDB DB2 Export data

After HDB data has been loaded into DB2, you can use you favorite DB2 query tool to analyze the data.

This chapter describes the format of the HDB data fields and gives examples that show you how to use QMF SQL queries to analyze the data.

For more information on working with DB2, refer to the *DB2 UDB for z/OS Administration Guide*.

Field formats

CICS PA saves data in its container data sets in a format suitable for loading directly into DB2 tables. Field data saved in the container data set depends on its CMF data type and the HDB type.

The following tables outline the various data types and how data is saved for each type of HDB.

List HDB fields

List HDB fields have the following format:

Table 14. Format of List HDB fields

CMF Data Type	DB2 Data Type	Field Length
T – Time stamp (see note 1)	TIMESTAMP - 'YYYY-MM-DD-HH.MM.SS.THMIJU'	26
C – Character	CHAR(n)	Same as CMF field length. For example, TRAN has length 4.
A – Counter	INT	4
P – Packed	INT	4
S – Clock	TIME component is FLOAT COUNT component is INT	8 4
Other Clocks (see note 2)	FLOAT	8

Summary HDB fields

Summary HDB fields have the following format:

Table 15. Format of Summary HDB fields

CMF Data Type	DB2 Data Type	Field Length
T – Time stamp (see note 1)	Date component is DATE - 'YYYY-MM-DD' One byte separator is '-' Time component is TIME - 'HH.MM.SS'	10 1 8
C – Character	CHAR(n)	Same as CMF field length. For example, TRAN has length 4.
A – Counter (see note 3)	Two FLOAT numbers: – Total – Sum of Squares	 8 8
P – Packed (see note 3)	Two FLOAT numbers: – Total – Sum of Squares	 8 8
S – Clock	TIME is two FLOAT numbers: – Total – Sum of Squares COUNT is two FLOAT numbers: – Total – Sum of Squares	 8 8 8 8
Other Clocks (see note 2)	Two FLOAT numbers: – Total – Sum of Squares	 8 8
TASKCNT TASKTCNT (see note 4)	FLOAT	8

Notes:

1. Time stamp fields are loaded differently for List and Summary HDBs. List HDB time stamps are loaded as a full TIMESTAMP. Summary HDB time stamps are broken down into their DATE and TIME components. This provides more flexibility to summarize data over time.

2. "Other Clocks" include special fields like RESPONSE (response time) which are derived from other fields (RESPONSE = STOP minus START).

3. For summary HDBs, CICS PA keeps 2 accumulators for count and clock fields; Total and Sum of Squares. Total is used to calculate average. Sum of Squares is used to calculate standard deviation and peak percentiles.

4. TASKCNT and TASKTCNT are special counters in the Summary HDB. TASKCNT is the number of transactions (tasks) that were accumulated to build this summary record. TASKTCNT is the number of Task Termination records. Either TASKCNT or TASKTCNT is used to calculate the average of count and clock fields.

Time precision

CICS PA stores time fields in FLOAT format in units of seconds and a precision of micro-seconds. For example, if the accumulated response time total in a Summary HDB is 10.202122 and the task count (TASKCNT field) for this interval is 20, then the average response time is 10.202122/20=0.510106 seconds.

SQL queries for Summary HDB

Summary tables contain data exported from a Summary HDB. Summary tables are the most commonly used for performance reporting.

Simple query

Summary tables are already summarized (by time), so a basic query does not require any scalar functions. The following query lists selected fields in the summary table:

```
SELECT TRAN,
       INT(TASKCNT)              AS TASKCNT,
       DEC(RESPONSE_TIME,8,2)    AS RESPONSE_TIME,
       DEC(CPU_TIME,8,2)         AS CPU_TIME,
       DEC(SUSPEND_TIME,8,2)     AS SUSPEND_TIME,
       DEC(DISPATCH_TIME,8,2)    AS DISPATCH_TIME
FROM CICSPA.CICSP1H
```

This query produces output like the following:

TRAN	TASKCNT	RESPONSE TIME	CPU TIME	SUSPEND TIME	DISPATCH TIME
CSOL	1	1887.43	16.00	9.00	16.00
CSMT	1	1887.22	16.00	9.00	16.00
FICX	1	0.00	1.00	1.00	1.00
SU4B	1	0.07	625.00	625.00	625.00
CWBG	1	0.00	1.00	1.00	1.00
BIC2	1	0.00	1.00	1.00	1.00
BIC2	1	0.00	1.00	1.00	1.00
AP77	1	1.17	3969.00	3969.00	3969.00
CAMA	1	0.01	25.00	25.00	25.00
CKPT	4	0.56	2313.00	2313.00	2313.00
CM99	1	0.01	1.00	1.00	1.00
CNA7	9	0.47	180.00	180.00	180.00
CNB0	3	0.17	891.00	891.00	891.00

Figure 399. Simple SQL query against Summary DB2 table

Grouping by APPLID

The following query summarizes all transactions that ran yesterday, grouping by APPLID.

```
SELECT APPLID,
       INT(SUM(TASKCNT))                        AS TASK_COUNT,
       DEC(SUM(CPU_TIME),16,4)                  AS TOTAL_CPU,
       DEC(SUM(CPU_TIME)/SUM(TASKCNT),5,4)      AS AVE_CPU,
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),5,4) AS AVE_RESPONSE
FROM CICSPA.CICSPX
WHERE START_DATE = CURRENT_DATE - 1 DAY
GROUP BY APPLID
ORDER BY APPLID
```

This query produces output like the following:

Analyzing HDB DB2 Export data

```
                 TASK              TOTAL     AVE      AVE
APPLID           COUNT               CPU     CPU RESPONSE
--------    -----------    ---------------  --------  --------
CICSP1            900          10.1467    0.0112    0.1520
CICSP2            520           1.0163    0.0019    0.1647
CICSP3            972           6.4394    0.0066    0.0882
CICSP4             36           0.6607    0.0183    0.2049
CICSP5            504           5.7875    0.0114    0.1400
CICSP6            504           5.6444    0.0111    0.1202
CICSP7            504           5.7117    0.0113    0.1021
CICSP8            540           6.1050    0.0113    0.1508
CICSP9            540           5.9684    0.0110    0.1515
CICSP10           180           1.6885    0.0093    0.1451
```

Figure 400. SQL query grouping yesterday's transactions by APPLID

Calculating averages

Averages are calculated by dividing the field value by the task count (TASKCNT).

The following query calculates the average response time.

```
SELECT TRAN,
       INT(SUM(TASKCNT))                         AS "Task Cnt",
       DEC(SUM(RESPONSE_TIME),8,4)               AS "Response Time Tot",
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),8,4) AS "Response Time Ave"
FROM CICSPA.CICSP1H
GROUP BY TRAN
ORDER BY TRAN
```

This query produces output like the following:

```
TRAN     Task Cnt  Response Time Tot  Response Time Ave
----    -----------  -----------------  -----------------
APN8          3             2.1231             0.7077
AP01         27             0.9987             0.0369
AP02         42            10.3802             0.2471
AP04          4             1.2992             0.3248
CATA         19             0.5517             0.0290
CATD         19             0.4133             0.0217
CKBP       1297           148.2471             0.1143
CMNE          2             1.3765             0.6882
CMNK          2             0.5178             0.2589
CMN1          2             0.4091             0.2045
CMOB          8             2.7378             0.3422
```

Figure 401. SQL query calculating average response time

Calculating standard deviation

Standard Deviation is a statistical estimate of the amount of variation in numerical values. The higher the standard deviation the more variation in the values. CICS PA requires the Sum of Squares to be loaded into the DB2 table in order to calculate standard deviation.

The following example calculates the standard deviation of response time. The CASE statement shows the function required to calculate standard deviation.

```
SELECT TRAN,
       INT(SUM(TASKCNT))                         AS TASKCNT,
       DEC(SUM(RESPONSE_TIME),8,6)               AS RESPONSE_TIME_TOT,
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),8,6) AS RESPONSE_TIME_AVG,
       CASE WHEN (SUM(TASKCNT) > 1) THEN
         DEC(SQRT(((SUM(TASKCNT)*SUM(RESPONSE_TIME_SSQ))
```

```
                    -POWER(SUM(RESPONSE_TIME),2))
                    /(SUM(TASKCNT)*(SUM(TASKCNT)-1))),10,4)
        ELSE 0
        END                                     AS RESPONSE_TIME_DEV
FROM CICSPA.CICSP1H
GROUP BY TRAN
```

This query produces output like that shown in Figure 402

		RESPONSE TIME TOT	RESPONSE TIME AVG	RESPONSE TIME DEV
TRAN	TASKCNT			
----	-----------	-----------	-----------	------------------
$SGM	1	0.418736	0.418736	0.0000
ABAL	3	0.002592	0.000864	0.0000
ATRN	7	0.007104	0.001014	0.0001
AUTS	1	0.000752	0.000752	0.0000
BALA	4	0.004016	0.001004	0.0004
CATA	2	0.006336	0.003168	0.0000
CRSR	5	0.001696	0.000339	0.0000
CSGM	1	0.000528	0.000528	0.0000
CSMI	11	0.009120	0.000829	0.0004
CSSN	2	0.001232	0.000616	0.0000
DESC	2	0.001280	0.000640	0.0000

Figure 402. SQL query calculating standard deviation of response time

Calculating peak percentile

Peak Percentile is a statistical estimate (based on the Normal Distribution) that provides an upper limit value of when nn% of tasks completed processing. For example 90% of transactions had a response time of 1 second or less. Peak Percentile allows you to measure whether workload targets are being met.

The following query calculates the 90% peak percentile of response time. The CASE statement shows the function required to calculate peak percentile.

```
SELECT TRAN,
       INT(SUM(TASKCNT))                        AS TASK_COUNT,
       DEC(SUM(RESPONSE_TIME),8,6)              AS RESPONSE_TIME_TOT,
       DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),8,6) AS RESPONSE_TIME_AVE,
       CASE WHEN (SUM(TASKCNT) > 1) THEN
         DEC((1.282*SQRT(((SUM(TASKCNT)*SUM(RESPONSE_TIME_SSQ))
                     -POWER(SUM(RESPONSE_TIME),2))
                     /(SUM(TASKCNT)*(SUM(TASKCNT)-1))))
                     +SUM(RESPONSE_TIME)/SUM(TASKCNT),10,8)
       ELSE DEC(SUM(RESPONSE_TIME)/SUM(TASKCNT),10,8)
       END                             AS "RESPONSE_PEAK_90%"
FROM CICSPA.CICSP1H
GROUP BY TRAN
ORDER BY TRAN
```

This query produces output like the following:

Analyzing HDB DB2 Export data

```
                       RESPONSE      RESPONSE      RESPONSE
             TASK        TIME          TIME          PEAK
TRAN        COUNT        TOT           AVE           90%
----     -----------  -----------   -----------   -------------
ABAL           3       0.002592      0.000864      0.00095340
APOS           4       0.003392      0.000848      0.00094987
ASUM           4       0.003488      0.000872      0.00092082
AUTS           1       0.000752      0.000752      0.00075200
BALA           4       0.004016      0.001004      0.00163763
BDEP           1       0.000704      0.000704      0.00070400
CATA           2       0.006336      0.003168      0.00316800
CSMI          11       0.009120      0.000829      0.00138661
EORE           3       0.004272      0.001424      0.00215297
ERLE           2       0.002336      0.001168      0.00148709
MBOX           1       0.000816      0.000816      0.00081600
NEWS           2       0.001952      0.000976      0.00138211
```

Figure 403. SQL query calculating 90% peak percentile of response time

Peak Percentiles are calculated using the formula:

```
Factor*Standard Deviation+Average
```

In the example, the Factor for 90% is 1.282. The following table shows the Factors for each 5 percentile above 50% (the average):

```
0.126          55%
0.253          60%
0.385          65%
0.524          70%
0.674          75%
0.842          80%
1.036          85%
1.282          90%
1.645          95%
```

SQL queries for List HDB

List HDB data is typically used to drill down to isolate performance problems or for ad-hoc reporting.

Take care when exporting List HDBs into DB2. The volume of data can be high, resulting in a table that is too large to manage.

Top ten worst transaction times

The following query reports the top 10 worst response times:

```
SELECT TRAN,
       TIME(START)             AS "Start Time",
       DEC(RESPONSE_TIME,10,4) AS "Response Time",
       DEC(CPU_TIME,10,4)      AS "CPU Time",
       DEC(SUSPEND_TIME,10,4)  AS "Suspend Time",
       DEC(DISPATCH_TIME,10,4) AS "Dispatch Time"
FROM CPADB.AORLIST
ORDER BY RESPONSE_TIME DESC
FETCH FIRST 10 ROWS ONLY
OPTIMIZE FOR 10 ROWS
```

This query produces output like the following:

```
TRAN  Start Time  Response Time   CPU Time  Suspend Time  Dispatch Time
----  ----------  -------------  ----------  ------------  -------------
CSOL  13.14.34       1887.6433      0.0004     1887.6428         0.0005
CQRY  14.26.57         11.1696      0.0008       11.1636         0.0060
MV02  14.09.45         10.8949      0.0176       10.8724         0.0225
TANS  13.47.03          9.1463      0.3634        8.6515         0.4948
TANS  14.16.50          7.6264      0.3534        7.1469         0.4795
MV14  14.25.33          6.0772      0.0216        6.0395         0.0377
ADBQ  12.00:40          4.0492      0.0023        0.0011         0.0012
CDAA  14.25.33          3.0232      0.0153        0.0120         0.0129
BINS  11.12.54          2.0112      0.0022        0.0221         0.0177
CFIM  12.11.31          1.0938      0.0153        0.0122         0.0032
```

Figure 404. SQL query listing top 10 worst response times

Chapter 20. Analyzing HDB CSV extract data

This HDB extract data file is a delimited text file that can be imported into PC spreadsheet or database tools such as Lotus 1-2-3 or Lotus Approach® for further reporting and analysis.

Importing into Lotus 1-2-3

To import the extract data into Lotus 1-2-3, follow these steps:

1. In 1-2-3, click the **Import** SmartIcon or choose **File - New.** 1-2-3 opens the File dialog box.
2. Select a text type of **Text - Delimited (*.TXT).**
3. Select the file to be opened. You may have to go to another folder or drive to find it.
4. Click **Open.** 1-2-3 displays the Text File Options dialog box.
5. Either click the option button **start a new column at each Semicolon** to indicate the character that separates the data fields, or type the separator character in the **Other characters** text box.
6. Click **OK.** After a few seconds of processing, 1-2-3 imports the data into records in the worksheet.

Importing into Lotus Approach

To import the exported text file performance data set into Lotus Approach, switch to the Approach Browse environment, and follow these steps:

1. In Approach, click the **Import** SmartIcon or choose **File - Import Data.** Approach opens the Import Data dialog box.
2. Select a text type of **Text - Delimited (*.TXT).**
3. Select the file to be imported. You may have to go to another folder or drive to find it.
4. Click **Import.** Approach displays the Text File Options dialog box.
5. Either click the option button to indicate the character that separates the data fields or type the separator character in the **Other** text box.
6. Place a checkmark in the **First Row Contains Field Names** checkbox. A checked checkbox is the default.
7. Click **OK.** Approach opens the Import Setup dialog box.
8. Drag the fields on the right side of the dialog box to match the related fields on the left side.
9. Click **OK.** After a few seconds of processing, Approach imports the data into records at the end of the file.
10. Edit the new records as needed.

Analyzing HDB CSV extract data

Part 7. Reference

The chapters in this part provide reference information about CICS PA:

- Chapter 21, "Messages" lists the error messages and descriptions.
- Chapter 22, "Problem determination" provides advice to avoid user errors and help diagnose problems.
- There are three cross-reference charts to help you more easily use CICS PA and understand the data it is reporting. They apply to CMF performance class and transaction resource class data:
  - Chapter 23, "CMF Field ID × CICS version" contains a cross-reference table relating the CICS monitoring facility (CMF) fields with the corresponding CICS PA field names and CICS version.
  - Chapter 24, "CICS PA field name × CICS version" contains a cross-reference table relating the CICS PA field names with the corresponding CICS CMF fields and CICS version.
  - Chapter 25, "Fields × forms, HDB templates" contains a cross-reference table relating the CICS PA field names with the Report Forms and HDB Templates where they can be specified.

Chapter 21. Messages

This section lists all the messages issued by CICS PA, a brief description of each, the action the system takes when the message is issued, and the action you should take when you get the message. The return codes set at the completion of batch processing are also listed.

The types of messages and their format are described, followed by the messages in numerical order.

The types of CICS PA messages are:

Message No. Range	Message Type
0001–0999	**Batch processing.** These messages are issued during CICS PA report processing due to command errors, I/O and file errors, to give the status of job execution, and so on.
1000–1099	**CICS PA dialog.** These messages are issued by the CICS PA dialog during JCL generation, or when creating Report Sets, Report Forms, Object Lists, and so on. For other CICS PA dialog messages, refer to the Online Help.
2000–2099	**Data take-up.** These messages are issued during take-up processing. See "Personal Take-Up from SMF File" on page 95.
3000–3099	**HDB.** These messages are issued during HDB processing. See Part 6, "Using the Historical Database (HDB)," on page 525.
4000–4099	**HDB SMF Statistics.** These messages are issued during HDB Statistics report processing. See Part 5, "Statistics reporting using the dialog," on page 501.

Return codes

The following return codes are set by CICS PA at the completion of batch processing:

RC	Meaning
0	Batch processing completed successfully.
4	Batch processing completed successfully, but a warning message was issued.
8	Batch processing completed, but an error message was issued. Some reports may not have completed.
16	Batch processing failed because of a command error.

Message format

The CICS PA messages begin with a unique message identifier, followed by message text which may contain variable information to identify the particular circumstance which caused the message.

The message identifier has the format **CPAnnnnx** where:

CPA The **program identifier** identifies the message as a CICS PA message. All CICS PA messages begin with CPA.

nnnn The **message identification number** is a four-digit number that uniquely identifies each message.

x The **severity level** is a letter that indicates the return code (see "Return codes" on page 671), the purpose of the message, and the type of response required.

The severity levels, from least to most severe, are:

I Information. No action is required.

W Warning. CICS PA has detected a possible error condition that the user should evaluate.

E Error. User action is required before CICS PA can continue processing.

S Severe. CICS PA processing is suspended until action has been taken.

All batch command processing error messages have the same general format for the **Message Text** as follows:

Severity Prefix	Operand Data	General Error Text	Specific Error Text	Source Text
Warning or Severe	Operand in error	General error description	Specific error description	User input in error

The parts of the message are printed in the order shown in the diagram. Not all parts are present in every message. At least the general or specific text is present to describe the error.

Severity Prefix

The first part of the message indicates whether the message is a warning message or a message which denotes a severe error. A warning is indicated by:

```
** Possible Error **
```

A warning is issued for conditions that do not prevent report program execution. However, you should analyze all warning messages to determine if the conditions cited affect the expected results. Warning messages are not printed if PARM NOINFOMSGS has been specified.

A severe command error is indicated by one of two prefixes:

```
** Command Error ***
```

```
** Error During Scan ***
```

These messages are printed even if PARM NOINFOMSGS was specified. Most severe command errors cause a severe error flag to be set. At the

end of command input processing, this flag is tested. If the flag tests true, no record processors are executed. CICS PA terminates at this point with a condition code of 16. To continue processing, you must correct the commands in error and resubmit the job.

Operand Data

If the error is associated with a recognizable operand, the operand is printed after the prefix. This part of the message is usually present. It is omitted when a recognizable operand cannot be associated with the error.

General Error Text

This describes the general nature of the error. It includes descriptive text appropriate for errors that can occur on any command; for example, a missing operand or label. This part of the message is usually present. It is omitted when the error is unique to the command being processed.

Specific Error Text

This is inserted by the individual command processor. It describes a condition unique to the command in error. Specific text may be provided in addition to the general text described previously to further clarify the error description. It can also be provided without general text, when the error condition is unique and the general text is inappropriate.

Source Text

This identifies the portion of the command input found to be in error during analysis. This part of the message is usually present.

Example:

If **CICSPA LIST(PUTPUT(LIST0001)** was coded when
CICSPA LIST(OUTPUT(LIST0001) was intended, CICS PA provides the following message:

```
CPA0015E ** Command Error *** LIST Operand not recognized -
valid values are: listed in the User's Guide.
The suboperand is: PUTPUT(
```

This message indicates a severe error that must be corrected to continue report processing. The command contains a suboperand (`PUTPUT`) that is not recognized by the CICS PA command processor as a valid LIST operand. Correct the command by supplying valid values as defined by the specific error text. In this case, the specific error text directs you to this book. See Chapter 12, "Using the CICS PA commands," on page 337 which describes all the commands and operands.

The message above contains all five message parts:

Message Part	Text
Severity prefix	`** Command Error ***`
Operand data	`LIST`
General error text	`Operand not recognized - valid values are:`
Specific error text	`listed in the User's Guide. The suboperand is:`
Source text	`PUTPUT(`

0000–0999 Batch processing messages

These messages are issued during CICS PA report processing due to command errors, I/O and file errors, to give the status of job execution, and so on.

CPA0000E   Invalid Error Code – *CPAxxxx*

Explanation: A CICS PA module attempted to issue an error message using a message ID that is not defined. This is an internal logic error.

System action: Processing continues.

User response: Determine the issuing module and contact your IBM representative for help.

CPA0001E   NAME operand invalid – exceeds max allowable length

Explanation: A character string representing a name was flagged by CICS PA as being too long. Any name field associated with a DDNAME has a maximum length of 8.

System action: Processing is terminated.

User response: See "Operand value formats" on page 339 for syntax rules and restrictions on operands for the command in error. Correct the command input and resubmit the job.

CPA0002E   Operand has been previously used – this use overrides prior use

Explanation: The specified operand has been used previously in a command.

System action: This operand value overrides the previous specification. Processing is terminated after all commands are validated.

User response: Either be sure this override is intended or correct the command input to use the operand only once, and resubmit the job.

CPA0003E   DDname is missing or is DD DUMMY – use is ignored

Explanation: A command was entered using a DDNAME operand. However, the DD statement definition was not in the JCL stream. Execution proceeds, but could terminate at a later point if the DDNAME is for an input file or a required output file.

System action: Processing continues, but the report requiring this DDname may fail.

User response: Check for a spelling error on the DDNAME or OUTPUT operand, or supply the missing JCL statements, then resubmit the job.

CPA0004E   Operand is not recognized – skipping to next operand

Explanation: During command analysis, an operand was expected but unrecognizable input was encountered.

System action: Processing is terminated after all commands are validated.

User response: Correct the command input and resubmit the job.

CPA0005E   * Processing stopped on this command due to errors listed above**

Explanation: One or more severe errors were encountered while processing the command input. No record processors will be executed. This message is preceded by additional command error messages describing the specific command input errors.

System action: Processing is terminated.

User response: Correct the command input and resubmit the job.

CPA0006E   Operand requires a value – none found

Explanation: The specified operand requires a value specified in parentheses. For example, the DDNAME operand was specified without a DDname value.

System action: The operand is skipped and command processing continues at the next operand. Processing is terminated after all commands are validated.

User response: Correct the command input by specifying the operand value and resubmit the job.

CPA0007E   Operand syntax invalid – skipping to next operand

Explanation: The specified operand has invalid syntax and is ignored by CICS PA.

System action: The operand is ignored and command processing continues at the next operand. Processing is terminated after all commands are validated.

User response: Correct the operand syntax and resubmit the job.

CPA0009E   Syntax invalid or not recognized

Explanation: The command or operand syntax is not supported by CICS PA.

System action: The command or operand is skipped and command processing continues. Processing is terminated after all commands are validated.

User response: Correct the command or operand

syntax and resubmit the job.

CPA0010E **Range specification invalid – first value exceeds second**

Explanation: A range was specified with a lower range value greater than the upper range value.

System action: The range specification is skipped and command processing continues. Processing is terminated after all commands are validated.

User response: Correct the range specification and resubmit the job.

CPA0011E **Maximum specification exceeded**

Explanation: The maximum allowed value for an operand has been exceeded.

System action: The maximum accepted value is printed and is substituted for the specified input value. Processing continues.

User response: If the maximum value produces unsatisfactory results, correct the command input and resubmit the job.

CPA0012E **Command requires a Label**

Explanation: The specified command requires an identifying label starting in column 1. The label can be 1 to 8 characters long.

System action: The command is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Specify a label and resubmit the job.

CPA0013E **Processing continues for diagnostics**

Explanation: CICS PA has previously encountered an unrecoverable error and diagnostic processing is activated.

System action: Diagnostic messages are issued and processing terminates.

User response: Look for previous error messages to determine the reason for the problem. If unresolved, contact your IBM representative for help.

CPA0014E **Operand required but not found**

Explanation: CICS PA determined that a required operand was not specified in the command input.

System action: The command is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Specify the required operand and resubmit the job.

CPA0015E **Operand not recognized – valid values are:**

Explanation: An invalid operand was specified. A list of allowed operand values accompanies this message.

System action: The operand is ignored and command processing continues.

User response: Remove or correct the operand and resubmit the job.

CPA0100S **STAE Exit invoked**

Explanation: An abend occurred when PARM STAE was specified or accepted as a default. This message may occur with another message for the error condition that triggered the abend. See "Batch Abends U1000, U1001, U1002" on page 714 for more information on STAE exits.

System action: Processing is terminated.

User response: Look for previous error messages to determine the reason for the problem. If unresolved, contact your IBM representative for help.

CPA0114E **Attempting to free MQ entry not on queue**

Explanation: This is an internal logic error.

System action: The operation is ignored.

User response: Contact your IBM representative for help.

CPA0115E **Invalid use of program – Dup use or no Prescan. Program deleted**

Explanation: This is an internal logic error.

System action: The record processor is deleted and execution continues.

User response: Contact your IBM representative for help.

CPA0116E *xxxxxxxx* **Report Processor deleted – Requires Control Table**

Explanation: The report processor initialization could not find the control table for the indicated report processor. This is an internal logic error.

System action: The report processor is deleted, the request skipped, and execution continues.

User response: Contact your IBM representative for help.

Messages

CPA0117E   Invalid use of CAIDCOMD

Explanation: Used for IBM debugging purposes.

System action: The execute command is ignored and processing continues.

User response: Contact your IBM representative for help.

CPA0118E   Invalid Operand Sublist Structure

Explanation: The operand sublists are specified incorrectly. This is an internal logic error.

System action: The operand is skipped.

User response: Contact your IBM representative for help.

CPA0119W   Three fields max under SUMMARY(BY(*,***,***). Extras ignored.**

Explanation: More than three fields were specified for summarizing the data on the Performance Summary Report.

System action: Extra fields are ignored.

User response: The command stream must contain three or fewer SUMMARY(BY fields. Make corrections by eliminating the extra fields and resubmit the job.

CPA0120S   Error on some queue – Internal Logic Error

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0121S   Error in Prescan – Reprocess buffer full

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0122E   Length is a valid Suboperand only for CHARACTER

Explanation: The LENGTH suboperand specified with the CROSSsystem report operand can be used with the character user field only. It is not valid with COUNT, CLOCKTIME, or CLOCKCOUNT user fields.

System action: The suboperand is ignored and processing continues.

User response: Examine the command stream, make

the necessary corrections, and resubmit the job.

CPA0123E   Number not a valid suboperand for CHARACTER

Explanation: The NUMBER suboperand specified with the CROSSsystem report operand is not valid for character user fields. It is used with COUNT, CLOCKTIME, or CLOCKCOUNT user fields.

System action: The suboperand is ignored and processing continues.

User response: Examine the command stream, make the necessary corrections, and resubmit the job.

CPA0124E   Invalid length specified for CHARACTER (LENGTH(

Explanation: The length of the character user fields on the Cross-System Work report must be between 1 and 256.

System action: The suboperand is ignored and processing continues.

User response: Examine the command stream, make the necessary corrections, and resubmit the job.

CPA0125E   More than 50 user fields requested

Explanation: A maximum of 50 user fields may be requested for generating a Cross-System Work Extract.

System action: The extra user fields are ignored and processing continues.

User response: Examine the command stream and make the necessary changes to reduce the number of user fields.

CPA0126E   Only one type of data record allowed under a SELECT operand

Explanation: When using the SELECT operand, only one type of data record may be selected, such as PERFORMANCE or EXCEPTION. A separate SELECT operand must be used for each type of data record chosen.

System action: Only the first data record type is used for selection.

User response: Examine the command stream, make the necessary corrections, and resubmit the job.

CPA0127E   Must have a VALUE operand for Selection

Explanation: The VALUE suboperand, and its necessary operands, must be specified with the SELECT operand to determine selection criteria.

System action: Processing continues, but the results from selection are unpredictable.

User response: Examine the command stream, make the necessary corrections, and resubmit the job.

CPA0129W   Three fields max under LISTX(BY(***,***,***). Extras ignored.

Explanation: More than three fields were specified for sorting the data on the Performance List Extended Report.

System action: The extra fields are ignored.

User response: The command stream must contain three or fewer LISTX(BY fields. Make corrections by eliminating the extra fields and resubmit the job.

CPA0202E   Data set open failed – Report Processors skipped, DDname=*xxxxxxxx*

Explanation: The indicated input data set could not be opened.

System action: All commands specifying reports using that input data set are skipped, and processing continues.

User response: Correct the JCL for the data set and resubmit the job.

CPA0204E   No DD card supplied; Routine deleted

Explanation: The record processor indicated in the associated dump list has one specific input data set that must be included.

System action: The record processor is skipped and processing continues.

User response: Include a JCL statement for the data set to be used by the indicated record processor and resubmit the job.

CPA0205E   SORT Error – Permanent I/O Error, DDname=*xxxxxxxx*

Explanation: The sort module encountered a SYNAD error while attempting to perform an I/O operation on the data set referenced by data set *xxxxxxxx.*

System action: Control returns to the module that issued the sort request.

User response: Look for any system message that may be related to this error. Check the JCL and data set space allocation. The space requirements vary by application and by volume of input. The data set should be a temporary sequential data set. Do not specify the record format, logical record length, or block size in the JCL. Refer to the sample JCL specification in Figure 166 on page 329 for the correct JCL specification of the sort work data sets.

CPA0206E   SORT Error – INIT requested for open DCB, DDname=*xxxxxxxx*

Explanation: The CICS PA sort module has received a request from a record processor to reinitialize a data set, referenced by *xxxxxxxx,* that is already in use. This may be an internal logic error.

System action: Control returns to the module that issued the INIT request.

User response: Check the JCL and command input stream. A sort work data set cannot be used by more than one application. If the data set appears to be defined correctly, contact your IBM representative for help.

CPA0207E   SORT Error – Key length exceeds 255, DDname=*xxxxxxxx*

Explanation: The combined length of all Key fields exceeds the maximum SORT key limit of 255 characters.

System action: Report processing stops.

User response: Remove Key fields to reduce the combined key length to no more than 255 characters.

CPA0208E   SORT Error – Data length exceeds 4095, DDname=*xxxxxxxx*

Explanation: This is an internal logic error. *xxxxxxxx* is the name of the work data set associated with the sort error.

System action: Control returns to the module that issued the sort request.

User response: Contact your IBM representative for help.

CPA0209E   SORT Error – Key+Data length less than 1, DDname=*xxxxxxxx*

Explanation: This is an internal logic error. *xxxxxxxx* is the name of the work data set associated with the sort error.

System action: Control returns to the module that issued the sort request.

User response: Contact your IBM representative for help.

CPA0210E   SORT Error – Data Set open failed, DDname=*xxxxxxxx*

Explanation: The CICS PA sort module was unable to open the data set referenced by *xxxxxxxx.*

System action: Control returns to the module that issued the sort request.

User response: Look for any system message that

may be related to this error. Check the JCL and data set space allocation. The space requirements varies by application and by volume of input. The data set should be a temporary sequential data set. Do not specify the record format, logical record length, or block size in the JCL. Refer to the sample JCL specification in Figure 166 on page 329 for the correct JCL specification of the sort work data sets.

CPA0211E   SORT Error – ADD attempted before INIT, DDname=*xxxxxxxx*

Explanation: The application is trying to add records to the data set before it has been initialized by the CICS PA sort module. This is an internal logic error.

System action: Control returns to the module that issued the sort request.

User response: Contact your IBM representative for help.

CPA0212E   SORT Error – bad Return Code from SORT, DDname=*xxxxxxxx*

Explanation: The CICS PA sort module received a nonzero return code from the system sort routine attempting to sort the file *xxxxxxxx*.

System action: Control returns to the module that issued the sort request.

User response: Look for any system message that may be related to this error. Ensure that the SYSOUT DD statement was specified. If so, look for SORT error messages in SYSOUT. Check the JCL and data set space allocation. The space requirements vary by application and by volume of input. The data set should be a temporary sequential data set. Do not specify the record format, logical record length, or block size in the JCL. Refer to the sample JCL specification in Figure 166 on page 329 for the correct JCL specification of the sort work data sets.

CPA0213E   SORT Error – no records in file to read or sort, DDname=*xxxxxxxx*

Explanation: No input data was received. The probable cause is an empty data set or an input data set that does not contain the record IDs being selected.

System action: Control returns to the module that issued the sort request.

User response: Check the input data set for the record types required on the requested report. If the data set appears to be in order, contact your IBM representative for help.

CPA0214E   SORT Error – SORT/Read running, 2nd request ignored, DDname=*xxxxxxxx*

Explanation: The CICS PA sort module received a request for a SORT or READ on a data set that has already processed a SORT or READ request. This may be an internal logic error.

System action: Control returns to the module that issued the sort request.

User response: A unique SORT work data set must be specified for each unique report using the sort facility. The names must match the PARMNAME of the reports. If the sort work data sets appear to be defined correctly, contact your IBM representative for help.

CPA0215E   SORT Error – File failed to close, DDname=*xxxxxxxx*

Explanation: The CICS PA sort module received a nonzero return code after issuing a close macro on the data set *xxxxxxxx*.

System action: Control returns to the module that issued the sort request.

User response: Contact your IBM representative for help.

CPA0216E   Times out of sequence in Graph queue

Explanation: The graph queue entries are not ordered by time. This problem may result from bad input data from the CICS Monitoring Facility (CMF) or from an internal logic error.

System action: The job abends with a user abend code.

User response: Review the input; if it appears to be correct, contact your IBM representative for help.

CPA0217E   OFFSET value too large – exceeds queue size

Explanation: This is an internal logic error.

System action: The job abends with a user abend code.

User response: Contact your IBM representative for help.

CPA0218I   Record processing for SMF File *xxxxxxxx* has started

Explanation: CICS PA has commenced reading SMF records from the specified SMF File. SMF records are passed to the Report Processors to build the reports and extracts.

System action: Processing continues.

User response: None required.

CPA0219I   End of File processing for SMF File
xxxxxxxx+ **has started**

Explanation: CICS PA has commenced End of File processing for the specified SMF File(s). A *+* (plus sign) after the DDname indicates that more than one SMF File was specified in the INPUT operand. The Report Processors are called to create the final reports or extracts.

System action: Processing continues.

User response: None required.

CPA0220I   SMF records for System *xxxx* **start at** *mm/dd/yyyy hh.mm.ss.th*

Explanation: CICS PA has detected the first SMF record to process in the current SMF File. The specified system identifies the System ID of the SMF records.

System action: Processing continues.

User response: None required.

CPA0221I   Dictionary Record read from SMF File, APPLID=*xxxxxxxx,* **SID=***xxxx* **Record Date=***mm/dd/yyyy,* **Time=***hh:mm:dd,* **Release=***v.r.m*

Explanation: CICS PA has detected a Dictionary record in the current SMF File for the specified CICS APPLID and MVS system ID. CICS PA cannot start processing CMF performance records for an APPLID until the Dictionary record is read. The second line of this message details the date and time of the record, along with the CICS version.

System action: Performance reporting can commence for the specified APPLID.

User response: None required.

CPA0222I   SMF records for System *xxxx* **end at** *mm/dd/yyyy hh.mm.ss.th*

Explanation: CICS PA has processed the last SMF record in the current SMF File. This message signifies that End of File for the current SMF File has been reached.

System action: Processing continues.

User response: None required.

CPA0223W   SMF File *xxxxxxxx* **has no records to process**

Explanation: CICS PA has detected that there were no SMF records to process in the current SMF File. The reports and extracts will contain no data.

System action: Processing continues.

User response: Ensure that the CICS monitor is

active during the time period that reporting is required.

CPA0225E   *xxxxxxxx* DCB failed to open

Explanation: The data control block (DCB) for the indicated data set could not be opened.

System action: The function which uses that data set is not performed.

User response: Ensure that the data set was included in the JCL. If it was, correct the necessary parameters and resubmit the job.

CPA0226I   Reporting started at *mm/dd/yyyy hh.mm.ss.th*

Explanation: CICS PA has detected the first CMF record within the specified SMFSTART/SMFSTOP time range.

System action: Reporting starts for the current SMF File.

User response: None required.

CPA0227I   Reporting stopped at *mm/dd/yyyy hh.mm.ss.th*

Explanation: CICS PA has detected the first CMF record outside the specified SMFSTART/SMFSTOP time range.

System action: Reporting stops for the current SMF File.

User response: None required.

CPA0228I   Dictionary Record from Dialog is being used, APPLID=*xxxxxxxx,* **SID=***xxxx*

Explanation: CICS PA has read a Dictionary record from the CPADICTR File for the specified CICS APPLID. CICS PA needs to use it because a Performance record was encountered in the SMF File without a preceding Dictionary record.

System action: Performance reporting commences for the specified APPLID.

User response: None required.

CPA0229I   CICS PA has completed processing, RC=*nn*

Explanation: CICS PA has completed reporting with the specified return code. If the return code is not zero, then CICS PA encountered a problem while producing the reports.

System action: CICS PA terminates.

User response: None required.

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CPA0230I Dictionary Record default is being used, APPLID=_xxxxxxxx_**, Release=**_v.r.m_

Explanation: CICS PA is using the CICS default Dictionary record. CICS PA needs to use it because a Performance record was encountered in the SMF File without a preceding Dictionary record, and the Dictionary record for this APPLID could not be located in the CPADICTR File.

System action: Performance reporting commences for the specified APPLID.

User response: None required.

CPA0231W Dictionary Record default cannot be used, APPLID=_xxxxxxxx_**, Release=**_v.r.m_

Explanation: CICS PA has tried to use the CICS default Dictionary record for the specified APPLID, but was unable to do so. The field connectors in the Performance records do not match the Dictionary record. CICS PA needs to use it because a Performance record was encountered in the SMF File without a preceding Dictionary record, and the Dictionary record could not be located in the CPADICTR File. The most likely cause of this problem is your MCT definition which may have removed some CMF fields.

System action: Performance records are ignored until a Dictionary record is encountered in the SMF file.

User response: Use the CICS PA dialog to create a Dictionary record for the offending APPLID. Then re-generate the report JCL, which will now include a CPADICTR DD statement containing the APPLID's Dictionary record. Refer to "CICS System (APPLID) definition" on page 67 to see how to create a Dictionary DSN.

CPA232W Dictionary Record from Dialog cannot be used, APPLID=_xxxxxxxx_**, Release=**_v.r.m_

Explanation: CICS PA has read a Dictionary record from the CPADICTR File for the specified CICS APPLID, but was unable to use it. The field connectors in the Performance records do not match the Dictionary record.

System action: Performance records are ignored until a Dictionary record is encountered in the SMF file.

User response: Ensure that the Dictionary record you created in the CICS PA dialog for the offending APPLID is correct. The most probable cause of this problem is your MCT definition. Ensure that when you build the Dictionary record in the CICS PA dialog that you specify the same MCT that your CICS system uses. Refer to "CICS System (APPLID) definition" on page 67 to see how to create a Dictionary DSN.

CPA233E Dynamic Allocation failed. RC=_xx_ **Error=**_xxxx_ **Info=**_xxxx_

Explanation: CICS PA attempted to allocate an Object dynamically and was unsuccessful. The Return Code (RC) from the attempt as well as the Error and Information codes are provided to aid diagnosis.

System action: Further messages from the Dynamic Allocation request may be printed following this message. Processing of the CICS PA command will be halted.

User response: Analyze the error, rectify the problem(s) causing the Request to fail and retry the CICS PA command.

CPA0301E ID Selection checked was invalid – record ignored

Explanation: This error message is issued from the selection module when the dictionary processor was unable to find the field being used in selection.

System action: The record is ignored and control returns for further record processing.

User response: Selection may have been specified using a field that was not collected in the CICS Monitoring Facility (CMF) record. Check the field selections in the command input stream against the fields collected in the CMF record. If the selected fields are being collected, contact your IBM representative for help.

CPA0302E Missing _xxxxx_ **time in** _xxxxxxxxxx_ **record – record ignored**

Explanation: The start or stop time was missing in the indicated record class.

System action: The record is ignored and control returns for further record processing.

User response: This may be a problem with the CICS Monitoring Facility (CMF) data. Analyze the data by using the CICS sample program DFH$MOLS. Incorrect data in the CMF records is normally caused by not selecting a field for inclusion in the data.

If the data appears to be correct, this may be a problem with CICS PA. Contact your IBM representative for help.

CPA0303E Number of Key fields exceed maximum of 8

Explanation: CICS PA supports up to 8 Key fields.

System action: Report processing stops.

User response: Reduce the number of Key fields to 8 or less.

CPA0310E   Summary Key error - Key sequence error detected at field *xxxxxxxx*

Explanation: The field named in *xxxxxxxx* was included in the Key fields sequence but is not a valid Key field. Key fields must be specified contiguously.

System action: Report processing stops.

User response: Delete the named field from the Key sequence or move it after the Key fields.

CPA0311E   Field ID *xxxxxxxxxxxx* **is not defined to Dictionary – field ignored**

Explanation: The dictionary processor was unable to locate a CMF field required for the requested report. For CICS defined fields this may be due to the required field having been excluded from the performance class record by a user defined Monitoring Control Table (MCT). For user-defined fields this may be due to CICS PA not having processed the required dictionary before encountering the first data record.

System action: The requested field and all subsequent fields on the report are ignored.

User response: Analyze the CMF data using DFH$MOLS for assistance in checking that the field id required for the report is actually collected in the CMF record. If a user-defined Monitoring Control Table (MCT) is being used, then check that the requested field id has not been excluded from the performance record. The CICS journal utility program DFHJUP can be also used to further analyze the content of the CMF record the structure and format of which can be found in the *CICS Customization Guide.* If the necessary field ids are present in both the dictionary record and the performance class records, contact your IBM representative for help.

CPA0312E   Unknown type of field – all further fields ignored

Explanation: An invalid type of field (the CICS 12-byte ID) was set up by the command processor. This is an internal logic error.

System action: The Performance List, Performance List Extended and Performance Summary reports are printed with the data to the left of the field in question on the print line. The field in question and all the fields to the right of it are ignored.

User response: Contact your IBM representative for help.

CPA0313W   EOF reached before STOP record encountered

Explanation: During the processing of history or alert monitor summary collections, end-of-file was reached on the input data set without encountering a stop record. The missing stop record may imply that part of the

summary collection was lost or that the file is continued on another data set.

System action: A stop record is assumed. The data is summarized and the report printed.

User response: None required.

CPA0314W   START record encountered after DETAIL record with no STOP record

Explanation: A start record was encountered when a stop record was expected. A stop record, indicating the end of summary collection, was not written to the journal data set.

System action: When a start record follows a detail record, a stop record is implied. At that point, the summary portion of the report is printed. A new report is started for the start record and the following detail records.

User response: None required.

CPA0316E   Report in *xxxxxxxx* **has too many fields to print – extra fields ignored**

Explanation: CICS PA found that the number of fields requested for either the Performance List, Performance List Extended, or Performance Summary Reports could not fit on the print line. *xxxxxxxx* is the DDname of the report output for the particular report in error. The fields for these reports are requested using the FIELDS operand.

System action: The fields are truncated to show as much data as fits on the print line.

User response: Recode the FIELDS operand to request fewer fields. You may also consider running multiple reports if more data is needed than can fit on one line.

CPA0317W   Truncated Monitor record encountered

Explanation: CICS PA found that the record length was less than the record length that CICS wrote at the front of the record.

System action: CICS PA runs with the shorter record length. This may allow the program to complete normally. A fetch protection or other abends may occur due to the invalid data. All data on the report is in doubt.

User response: You should be sure that you have not copied the CICS CMF data with a utility that truncates without warning. These records can easily be truncated since they are in undefined record format and do not give length errors. You should consider increasing the block size of the output data set. Care must also be taken when concatenating the input data sets. The first data set must not have a smaller block size than the succeeding data sets. The data set with the largest

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block size must be at the beginning of the concatenation.

CPA0318W   Padded Monitor record encountered

Explanation: CICS PA found that the record length was longer than the record length that CICS wrote at the front of the record.

System action: CICS PA executes normally. You should be aware of this problem since it may be due to invalid data. You may also have caused this problem by copying the data from one unit to another with a utility that padded the record. If the record was padded, it will not use space efficiently and may affect the processing time of CICS PA.

User response: Determine why the record was padded and correct the problem.

CPA0319E   Error in number of or offset to data fields

CPA0320E   Processing beyond end of SMF record attempted

CPA0321E   Data section length error

CPA0322E   Error in number of or offset to Field Identifiers

Explanation: One or more of the above messages is issued when an incorrect record length, section length, or data field pointer is encountered during processing of the CICS Data Section in the SMF record. The error is in one of the following fields:
- Data Section Length
- Offset to field connectors (SMFMNDCA)
- Number of field connectors (SMFMNDCN)
- Offset to data records (SMFMNDRA)
- Number of data records (SMFMNDRN)

The above fields are contained in the SMF Product Section, which precedes the CMF data records.

The format and description of the SMF Header, SMF Product Section, and CMF data records can be found in the *CICS Customization Guide*.

System action: CICS PA skips the record in error and continues processing the remaining records. The error record is printed along with a 4-byte field containing the displacement of the error record in the physical record. Only the first 256 bytes of the record are printed. If more than 256 bytes is required, you may specify the amount of data printed by using the command PARM MAXDUMP(*nnnn*).

User response: Determine the fields in error and contact your IBM representative for help.

CPA0323E   Invalid SMF record type encountered

Explanation: An invalid SMF record type was encountered by CICS PA.

System action: CICS PA skips the record in error and continues processing the remaining records. The error record is printed along with a 4-byte field containing the displacement of the error record in the physical record. Only the first 256 bytes of the record are printed. If more than 256 bytes is required, you may specify the amount of data printed by using the command PARM MAXDUMP(*nnnn*).

User response: Determine the fields in error and contact your IBM representative for help.

CPA0324S   Error threshold count reached...Job terminated

Explanation: CICS PA has reached the maximum number of errors allowed. When ten errors (described in messages CPA0319E through CPA0322E) occur, CICS PA ends the job.

System action: CICS PA terminates the job.

User response: Determine the fields in error and contact your IBM representative for help.

CPA0325I   Prescan Reprocessing Table filled – TABLE*nnnn* allocated

Explanation: This is an informational message only. CICS PA uses an internal table to deblock the data from the monitor data record. The table was not large enough to contain all the data that had to be deblocked so space for an additional table was acquired. The additional table is concatenated to the original. The value *nnnn* in the message tells how many tables have been acquired at the time of the message.

System action: CICS PA continues to run normally but the processing time is increased by the need to obtain additional storage requests.

User response: Verify that there is no bad data causing CICS PA to incorrectly deblock the monitor data. If the blocksize of the monitor data set is large, this message can be ignored.

CPA0327W   SUMMARY field not specified in BY operand – field ignored

Explanation: A character field requested in the SUMMARY(FIELDS operand is not in the SUMMARY(BY operand list. If eligible BY fields are specified in the FIELDS list, they must also be specified in the BY list in the same order.

System action: The field is not processed.

User response: Review the allowed combinations of SUMMARY(BY and SUMMARY(FIELDS operands.

CPA0329E   **Dictionary returned error on Field ID** *xxxxxxxxxxxx*

Explanation: The dictionary processor was unable to find the data associated with the 12-byte FIELD ID.

System action: The data fields on the report are printed as `Missing`.

User response: Verify that the CMF data required for the requested report was collected in the CMF records. The DFH$MOLS sample program can be used to analyze the contents of the dictionary records.

CPA0330W   **Dictionary called by Prescan with unknown record type**

Explanation: The record encountered was not a performance, exception, or dictionary record. This is an internal logic error.

System action: The data record is ignored and processing continues.

User response: Obtain a dump of the records and contact your IBM representative for help.

CPA0331E   **Performance data encountered before Dictionary, APPLID=***xxxxxxxx*. **Data lost!**

Explanation: A performance record was read for the specified APPLID, but a dictionary record for that APPLID has not been read yet. CICS PA cannot process the CMF performance data records without first processing the dictionary record for the same APPLID. CICS PA only issues one CPA0331E message per APPLID. More data records may have been ignored.

The cause of a missing dictionary record may include:

1. The switch of an SMF MANx data set while the monitor is running. CICS only writes a dictionary record when the monitor commences.
2. Multi-volume input files are not specified in time sequence.
3. Merged SMF files have records in incorrect sequence.

System action: The data record is ignored and processing continues.

User response: If the SMF input file specification is correct, and the missing dictionary record is unavoidable, then use the dictionary record creation facility in the dialog. A dictionary record can be created from the CICS system definition for the offending APPLID. Refer to "CICS System (APPLID) definition" on page 67. When CICS PA generates report JCL, the CPADICTR DD statement will include the required dictionary records. You can also use the Monitoring Dictionary Utility Program DFHMNDUP to create the dictionary records required.

Data sets containing required dictionary records can be specified in the JCL:

1. At the top of the SMF input file concatenation. CICS PA will read and use the dictionary record until another is read in the SMF File.
2. In the CPADICTR DD statement. CICS PA will only read and use the dictionary record if one is not found in the SMF File.

If you are unsure about the SMF data validity, analyze the CMF data using DFH$MOLS.

CPA0332W   *xxxxxxxxxx* **Data length may be incorrect**

Explanation: CICS PA does an internal calculation of the length of the CMF record. The calculated length does not match the record length field in the record itself.

System action: Processing continues, however data from that record may be invalid.

User response: None required.

CPA0333E   **Connector ID X'***xxxx***' not mapped by** *xxxxxxxxxxxx* **Dictionary for APPLID** *xxxxxxxx*

Explanation: A field in the data record is not mapped by the performance record dictionary data. There is either an error in the CICS Monitoring Facility (CMF) data, or the dictionary record that you created in the CICS PA dialog or via DFHMNDUP is not compatible with the data records.

System action: The remainder of the data record is ignored and processing continues.

User response: If CICS PA read and used a dictionary record that you created, then ensure that the CICS SDFHLOAD library and MCT specification were valid. If CICS PA read and used a dictionary record from the SMF File, then analyze the CMF data using DFH$MOLS for assistance in determining the source of the error. Contact your IBM representative for help.

CPA0334E   **A type "A" field (Counter) requested but length not 4 or 8**

Explanation: The CMF record indicated an incorrect length for a counter field. Length must be 4 or 8

System action: The return code is set and control is returned to the module that requested the data. A nonzero return code tells the requesting module the data is either invalid or can't be found.

User response: There is an error in the CICS Monitoring Facility (CMF) data. Analyze the CMF data using DFH$MOLS for assistance in analyzing the source of error. Contact your IBM representative for help.

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CPA0335E   An unknown type of field was requested: "*xxxxxxxxxxxx*"

Explanation: The CICS 12-byte ID requested by a report processor and found by the dictionary processor is invalid. The field type (for example, A=COUNTER, S=CLOCK/COUNT) is unrecognizable and can't be processed by the dictionary processor.

System action: The return code is set and control is returned to the module that requested the data. A nonzero return code tells the requesting module the data is either invalid or can't be found.

User response: This was most likely a user error caused by incorrect definition of user fields. The data type (ninth character position in the CICS 12-byte ID) must be a valid CICS data type. Review the *CICS Customization Guide* for the valid data types in the CICS Monitoring Facility. Verify that all user fields are defined correctly before contacting your IBM representative for help.

CPA0336W   Dictionary called by Report Processor with unknown record type

Explanation: The record encountered was not a performance class record.

System action: The record is ignored and processing continues.

User response: This is a CMF data error. Obtain a dump of the records and contact your IBM representative for help.

CPA0338E   STOP time earlier than START time

Explanation: The transaction stop appeared to happen before the transaction start.

System action: The record is ignored and processing continues.

User response: This is probably due to merging data improperly or to multi-volume data sets processed in the wrong order. Analyze the CMF data using DFH$MOLS for assistance in correcting the error.

CPA0340E   Dictionary unable to find required CMF data for *xxxxxxxxxxxx* Graph

Explanation: While processing the indicated graph, the Dictionary Processor was unable to find any of the required fields in the CMF data.

System action: The graph requested is ignored and processing continues normally.

User response: Verify that the necessary CMF data is being collected in the records before requesting the graph. Also, verify that there are records being processed. If no records are selected or the input file

does not contain performance class records, the graph cannot be processed.

CPA0341E   Dictionary flagged required Graph data missing on *nnnnnnnn* accesses

Explanation: While processing the graph preceding this message, the dictionary processor was unable to find the required CMF data the number of times indicated.

System action: Zeros are used where actual data cannot be found. The graph is printed but it is inaccurate due to the zeroed data.

User response: Analyze the CMF records using DFH$MOLS and verify that the required data is collected on all records. If it appears that the data is all there, there is an internal logic error. Contact your IBM representative for help.

CPA0342W   No Performance records found. Number of tasks set to 1.

Explanation: If no performance records were found by the Performance Totals report processor, the number of tasks is set to 1.

System action: Processing continues normally.

User response: None required.

CPA0346E   No records were selected from input for processing

Explanation: The issuing report processor had no input records to process. Either the input data set did not contain any of the necessary type of records or the user's SELECT specification caused no records to be included.

System action: The report header is printed along with the error message. Processing continues.

User response: Determine that the necessary record types are present on the input data set. If using the SELECT operand, correct the operands to eliminate the exclusion of all records.

CPA0347I   Cross-System Data Set successfully generated, record count=*nnnnnnnn*

Explanation: The Cross-System Work Extract data set was successfully generated. The record count shows how many records were written to the data set.

System action: Processing continues normally.

User response: None required.

CPA0348W **Unsupported CMF records encountered – records ignored**

Explanation: CICS SMF 110 records were encountered in the input data set, but they were from a version not supported by this release of CICS PA.

System action: The record is ignored and processing continues.

User response: None, or remove the input data set containing unsupported CMF records.

CPA0351E **GETMAIN failed – Report terminated**

Explanation: A GETMAIN request for storage failed.

System action: The report processor terminates.

User response: Specify a larger REGION parameter in the JCL.

CPA0352I **Cross-System Data Set was not generated**

Explanation: The Cross-System Work Extract failed to generate the extract data set. A preceding error message details the reason why the extract has failed.

System action: Processing continues normally.

User response: Refer to the preceding error message to determine the cause of the problem.

CPA0355I **Exported Data Set successfully generated**

Explanation: The Export Extract successfully generated the extract data set.

System action: Processing continues normally.

User response: None required.

CPA0356W **Export record is missing data – missing fields contain blanks**

Explanation: The Export Extract records contain fields that were not available in the performance data records. The missing fields contain blank values. The Export Extract record contains all CICS Transaction Server Version 1.3 performance clock fields, but you may be running a prior release of CICS or excluded some fields in the MCT.

System action: Processing continues normally.

User response: Verify that the missing (blank) field values are not being collected in the CMF Performance records. Otherwise, contact your IBM representative.

CPA0357I **LIST reports share output file** *xxxxxxxx,* **report lines may be interleaved**

Explanation: Multiple Performance List Reports were requested with the same OUTPUT file name. This can cause the report lines to be interleaved if the reports process the same APPLIDs or the CMF data is not sorted by APPLID.

System action: Processing continues normally.

User response: It is recommended that:

1. Each Performance List report specify a unique OUTPUT DDname. This will ensure that each LIST report has contiguous output, and not interleaved with other LIST reports.

2. Each Performance List report specify a single APPLID in the APPLID operand, or specify APPLID in the FIELDS list, or the CMF data is sorted by APPLID. This will ensure that the report does not page break too often. The LIST report performs a page break each time the APPLID changes in the data, except when APPLID is specified in the FIELDS list.

CPA0359W **Connector ID X'***xxxx***' not mapped by Performance Dictionary record**

Explanation: There is an incompatibility between the CMF Performance records and their associated Dictionary record for the specified CICS APPLID. The CMF Performance records contain data for the specified Connector ID, however their Dictionary record did not include a CMF field definition for this Connector ID. When the Field ID in error is a "CMF field", then this may be a serious problem. It may be caused by the Dictionary and Performance records being generated by different versions of CICS. When the Field ID in error is a "User Field", then this may indicate that the Dictionary record does not contain the User Fields defined in the MCT for this CICS APPLID.

System action: Processing continues for this CICS APPLID, however only CMF fields with Connector IDs resolved before the problem occurred are available for reporting.

User response: If the Field ID in error is a "user field", then all CMF fields are available for reporting. User fields should not be requested for reporting in this case. If the Field ID in error is a "CMF field", then a more serious problem may exist. You should resolve this problem before resuming reporting for this APPLID.

Your response will depend on the source of the Dictionary record. There are three possible sources from where CICS PA can obtain the Dictionary record:

1. CICS PA found the Dictionary record in the SMF File. Message CPA0221I was issued previously to indicate this. If the Dictionary record was written by CICS when the Monitor started, then a serious problem has occurred. Use the CICS DFH$MOLS

utility to analyze your CMF data. This will help you determine the source of the error. In this case, you may need to contact your IBM representative for help.

If you created the Dictionary record (using the CICS DFHMNDUP utility) and concatenated it ahead of your SMF File DD specification, then verify that the Dictionary record is for the correct version of CICS, or that your MCT specification matches the one used by CICS.

2. The Dictionary record was created from the CICS PA dialog and CICS PA read it from the CPADICTR File. Message CPA0228I was issued previously to indicate this. If the Field ID in error is a "user field", then you probably created your Dictionary record with an incorrect MCT specification. Return to the dialog and ensure that your MCT specification matches the one used by CICS.

3. CICS PA used the default Dictionary record for your version of CICS. Message CPA0230I was issued previously to indicate this. If the Field ID in error is a "user field", then your CICS APPLID probably uses an MCT with user fields defined. If you wish to report against the user fields, then create a Dictionary record using the CICS PA dialog.

CPA0360E   System Logger report initialization failed

Explanation: This is an internal system error.

System action: System Logger report processing is terminated.

User response: Contact your IBM representative for help.

CPA0361I   Logger reports share output file *xxxxxxxx,* **reports may be interleaved**

Explanation: Multiple System Logger reports were requested with the same OUTPUT file name. This can cause the reports to be interleaved.

System action: Processing continues normally.

User response: It is recommended that every CICS PA report specifies a unique OUTPUT DDname. This will ensure that reports are not interleaved with other reports.

CPA0362I   Invalid data in Type 88 SMF record, reason code=x

Explanation: The SMF Type 88 record was bypassed because it had missing or incomplete data.

System action: Processing continues, but this record is bypassed. The record is dumped for analysis.

User response: Determine the cause of the invalid record(s).

CPA0363I   Additional sections in Type 88 SMF record, reason code=xx

Explanation: CICS PA SMF Type 88 record processing assumes that only one section of each type is present.

System action: Processing continues, but this record is bypassed. The record is dumped for analysis.

User response: Contact your IBM representative for help.

CPA0364I   Non-CICS logstream *logstreamname* **bypassed**

Explanation: CICS PA processes only CICS-related System Logger records.

System action: Processing continues.

User response: None required.

CPA0365W   Logger SMF recording interval specification may be invalid

Explanation: Message CPA0366W is a continuation of this message.

The specified interval, or system interval if one is not specified, is compared with the calculated interval, based on the SMF records, and was found to be different. This may result in invalid data in the System Logger Summary report.

System action: Processing continues.

User response: Verify that the specified interval, or system interval, is correct for the SMF records being processed.

CPA0366W   INTERVAL Calculated=xx**mins, Specified=**xx**mins, Output=**$xxxxxxxx$

Explanation: This message is a continuation of message CPA0365W.

CPA0370E   Logic Error - DB2 Report Processor routine *xxxxxxxx,* **Reason=**xxx

Explanation: This is an internal system error.

System action: DB2 report processing is terminated.

User response: Contact your IBM representative for help.

CPA0371W   DB2 Version x **Release** x **record encountered - records ignored**

Explanation: A DB2 Accounting record for a DB2 release that is not supported by CICS PA has been encountered. All records for this DB2 release are ignored.

System action: Processing continues.

User response: None required.

CPA0372W   Invalid DB2 record encountered - records ignored

Explanation: Message CPA0373I is a continuation of this message.

At least one DB2 Accounting record with an invalid format has been encountered. All DB2 Accounting records with invalid format are ignored.

System action: Processing continues.

User response: Check that the input SMF file contains valid SMF Type 101 (X'65') records.

CPA0373I   DB2 release *v.r* Reason=*xxx* Info=*xxxxxxxx*

Explanation: This message is a continuation of message CPA0372W.

CPA0374W   DB2 Report Processor missing required field - records ignored

Explanation: At least one CMF Performance record selected by the DB2 Report Processor was found to be missing a required field.

System action: The record is ignored and processing continues.

User response: Verify that the specified Field ID is in the CMF record. You may have excluded this field in your MCT. If the necessary Field IDs are present in the records, contact your IBM representative for help.

CPA0375W   Transaction *xxxx* has used additional *object* and exceeded the *object* Limit of *nn*

Explanation: A resource limit has been exceeded for one of two object types: Files or TSQueues.

System action: Processing continues.

User response: For Files:

Ensure that the File Resource Limit specified in the DFHMCT TYPE=INITIAL macro via the FILE= keyword is high enough to support your transactions' File Usage.

For TSQueues:

Ensure that the TSQueue Resource Limit specified in the DFHMCT TYPE=INITIAL macro via the TSQUEUE= keyword is high enough to support your transactions' Temporary Storage Usage.

For more information, see "Transaction Resource Class data" on page 39.

CPA0380E   Logic Error - MQ Report Processor routine *xxxxxxxx*, Reason=*xxx*

Explanation: This is an internal system error.

System action: WebSphere MQ Reporting processing is terminated.

User response: Contact your IBM support representative for assistance.

CPA0381W   MQ Version *v* Release *r* record encountered - records ignored

Explanation: A WebSphere MQ Accounting record for a WebSphere MQ release that is not supported by CICS PA has been encountered. All records for this WebSphere MQ release are ignored.

System action: The record is ignored and processing continues.

User response: None required.

CPA0382W   Invalid MQ record encountered - records ignored

Explanation: Message CPA0383I is a continuation of this message.

At least one WebSphere MQ Accounting record with an invalid format has been encountered. All WebSphere MQ Accounting records with an invalid format are ignored.

System action: The record is ignored and processing continues.

User response: Check that the input SMF file contains valid SMF Type 116 (X'74') records.

CPA0383I   MQ release *v.r* Reason=*xxx* Info=*xxxxxxxx*

Explanation: This message is a continuation of message CPA0382W.

CPA0400E   Field ID *xxxxxxxx xxxxxxxxxxxx* not defined in HDB, field ignored

Explanation: The specified field was requested for reporting but is not a defined field for this HDB. The Template whose name is specified in the HDB Definition defines fields in an HDB.

System action: The field is not reported. Character fields are printed as blank whilst numeric fields are printed as **missing**.

User response: Ensure that your Report Form only requests fields that are defined to the HDB Template.

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CPA0401E   Field name *xxxxxxxx* **is not supported, reporting is stopped**

Explanation: The specified field was requested for reporting but is not a field that is known to CICS PA.

System action: HDB report processing is terminated.

User response: Ensure that your FIELDS operand only specifies fields that are supported by CICS PA.

CPA0402E   Key field *xxxxxxxx* **is not supported, HDB load processing is stopped**

Explanation: The specified field was requested for load processing but is not a field that is known to CICS PA.

System action: HDB load processing is terminated.

User response: Ensure that your FIELDS operand only specifies fields that are supported by CICS PA.

CPA0403W   Template Field *xxxxxxxx (xxxxxxxxxxxx)* **is not defined to Dictionary – ignored**

Explanation: The named field was specified in the Template associated with the container data set being LOADed, but the field is not defined to the Dictionary.

System action: The field is not loaded into the container data set.

User response: None required.

CPA0404E   Internal Processing Error. RC=*xx* **INFO=***xxxxxx* **ID=***xxxxxxxx*

Explanation: Whilst LOADing an HDB, an internal processing request returned an unacceptable return code.

System action: The LOAD request is terminated.

User response: Contact your IBM representative for help.

CPA0405E   Duplicate HDB LOAD request aborted. HDB=*xxxxxxxx*

Explanation: LOAD requests are serialized to ensure the integrity of the HDB Register. That request failed.

System action: The LOAD request is terminated.

User response: Ensure that no more than one LOAD is concurrently active for a specific HDB Register.

CPA0406E   No Containers in HDB *xxxxxxxx* **eligible for processing**

Explanation: An HDB REPORT request was issued against the specified HDB. However, no Containers were available for processing. Either no Containers have been created for the HDB, or the time stamp criteria specified via the SMFSTART/SMFSTOP keyword(s) exclude all available Containers.

System action: The REPORT request is terminated.

User response: Either create Containers for the HDB or specify a time span that matches those of the Containers in the HDB.

CPA0407W   Field *xxxxxxxx (xxxxxxxxxxxx)* **not present in HDB Container Data Set – ignored**

Explanation: The specified field was specified in a FORMDEF (or a FIELDS statement) but the field was not present in the HDB Container data set.

System action: The field is not included in the Report.

User response: None required.

CPA0408E   Unable to serialize HDB Housekeeping

Explanation: HDB Housekeeping can make large changes to the HDB Register and therefore only one Housekeeping job may be active against an HDB Register dataset at any one time. In this case, another Housekeeping job was already active against the HDB Register.

System action: The Housekeeping job is terminated.

User response: Ensure that no more than one Housekeeping job is concurrently active for a specific HDB Register.

CPA0409E   HDB is unusable - Control Record Missing

Explanation: During the running of HDB Housekeeping, it was determined that a mandatory Control Record was missing from the HDB Register data set.

System action: The Housekeeping job is terminated.

User response: Recreate the HDB Register or recover it from a Backup. If the problem reoccurs, contact your IBM representative for help.

CPA0410W   User-specified Selection Criteria ignored

Explanation: The User has specified Selection Criteria when LOADing an HDB. HDB Selection Criteria are specified when defining an HDB or defining the associated Template and only those Selection Criteria are honored during the LOAD (all Selection Criteria specified by the user via JCL are ignored).

System action: The user-specified Selection Criteria are ignored.

User response: None required.

CPA0411W   Statistics HDB Load request issued warning/error messages; Recap=*xxxxxxxx*

Explanation: CICS PA statistics processing has issued warning or error messages. DDname *xxxxxxxx* contains the messages.

System action: Processing continues.

User response: Review the CICS PA statistics messages in DDname *xxxxxxxx* and take action as advised.

CPA0412E   FILEIMAGE and FILESYSTEM have both been specified, only one can be specified

Explanation: The FILEIMAGE and FILESYSTEM parameters are mutually exclusive, only one of them can be specified.

System action: The report is ignored and command processing continues.

User response: Specify one parameter, either FILEIMAGE or FILESYSTEM, but not both.

CPA0501E   Invalid Command Error Code

Explanation: A CICS PA module attempted to issue an error message using a message ID that is not defined. This is an internal logic error.

System action: Command processing continues. Processing is terminated after all commands are validated.

User response: Contact your IBM representative for help.

CPA0502E   No delimiters in date – Julian format assumed *(YYDDD)*

Explanation: A date specified in the command input had no delimiters and CICS PA could not determine the format.

System action: Julian format is assumed and processing continues.

User response: If the Julian format produces unsatisfactory results, correct the command input and resubmit the job.

CPA0503E   Time field has invalid format, digit, or value

Explanation: A time field specified in the command input cannot be processed by CICS PA.

System action: The time field is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Correct the command input and resubmit the job.

CPA0504E   Number invalid – too many digits or contains non-numeric value

Explanation: A number specified in the command input cannot be processed by CICS PA.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Correct the command input and resubmit the job.

CPA0505E   FROM-TO range is invalid – TO not later than FROM

Explanation: A FROM-TO range was specified such that the FROM value was greater than the TO value.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Correct the range specification and resubmit the job.

CPA0506E   FORMAT operand requires a single character per value

Explanation: The FORMAT operand specifies the characters to be used for delimiters when formatting date and time fields. Each delimiter must be a single character.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "FORMAT" on page 351 for the correct usage of the FORMAT operand. Correct the command input using a single character for each delimiter, and resubmit the job.

CPA0507E   INPUT operand requires a 1-8 character name

Explanation: A valid DDname was not specified with the INPUT operand.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "INput" on page 353 for the correct usage of the INPUT operand. Correct the command input and resubmit the job.

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CPA0508E   APPLID operand requires an 8 character name

Explanation: A valid CICS generic APPLID was not specified with the APPLID operand.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "APPLID" on page 351 for the correct usage of the APPLID operand. Correct the command input and resubmit the job.

CPA0509E   SUMMARY(BY fields not specified in FIELDS suboperand or out of sequence

Explanation: The field names specified in the BY operand were not properly specified in the FIELDS operand. Whenever the BY operand is specified, the FIELDS operand must be specified and it must contain the field names, in the same sequence as specified on the BY operand.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Ensure that the FIELDS operand is specified and that it contains the field names specified on the BY operand. See "SUMMARY - Performance Summary report" on page 377 for the correct usage of the SUMMARY operands. Correct the command input and resubmit the job.

CPA0511E   DELIMIT operand requires a single character value

Explanation: The DELIMIT operand did not specify a single character value. The field delimiter for the EXPORT file must be a single character.

System action: The operand is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "EXPORT - Exported performance data extract" on page 445 for the correct usage of the DELIMIT operand. Correct the command input using a single character for the delimiter, and resubmit the job.

CPA0513E   Only one Graph can be requested per GRAPH operand

Explanation: Only one graph (RESPONSE or TRANRATE) may be requested for each GRAPH report request. If you wish to produce two graphs, specify the GRAPH operand twice with the required graph type (for example, GRAPH(RESPONSE),GRAPH(TRANRATE)).

System action: The operand is ignored and command

processing continues. Processing is terminated after all commands are validated.

User response: Correct the command input and resubmit job.

CPA0518E   UOWID Select Field must specify 12 hexadecimal digits

Explanation: The UOWID Field in the Selection Criteria did not specify 12 hexadecimal digits. CICS PA checks this specification against the first 6 bytes of the NETUOWSX CMF field, as this is the Netuork UOW ID. The last 2 bytes are not checked, as they are the period or syncpoint count within a Network UOW.

System action: The field value is ignored and command processing continues.

User response: Correct the command input and resubmit the job.

CPA0521E   START/STOP field format is not TIMET, TIMES, TIMEM, DATE, DATEISO, DATEM or DATEYR

Explanation: The START/STOP field format in the FIELDS operand is invalid. Allowed values are TIMET, TIMES, TIMEM, DATE, DATEISO, DATEM and DATEYR.

System action: The field is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "Suboperands for Time Stamp fields" on page 347. Correct the command input and resubmit the job.

CPA0522E   User field specification is invalid. Field is ignored

Explanation: The user field was incorrectly specified.

System action: The user field is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "Suboperands for User fields" on page 347 for operand format and usage when specifying user fields. Correct the command input and resubmit the job.

CPA0523E   Clock field format is not TIME or COUNT. Field is ignored

Explanation: The Clock field format in the FIELDS operand is invalid. Allowed values are TIME and COUNT.

System action: The field is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "Suboperands for Clock type

fields" on page 346. Correct the command input and resubmit the job.

CPA0524E   ***** Run terminated by errors listed above *****

Explanation: The job was terminated due to severe command error conditions.

System action: Processing is terminated.

User response: Correct the command input errors, which are indicated by command error messages that precede this message, and resubmit the job.

CPA0525E   LISTX(BY field UOWID must be specified on its own

Explanation: The LISTX report BY operand can only specify field UOWID on its own. For example, **LISTX(BY(UOWID),FIELDS(...)).**

System action: The field is ignored and command processing continues.

User response: Correct the command input and resubmit the job.

CPA0526E   LISTX(BY fields not specified in FIELDS operand or out of sequence

Explanation: The field names specified in the BY operand were not properly specified in the FIELDS operand. Whenever the BY operand is specified, the FIELDS operand must be specified and it must contain the field names, in the same sequence as specified on the BY operand.

System action: The LISTX report is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Ensure that the FIELDS operand is specified and that it contains the field names specified on the BY operand. See "LISTX - Performance List Extended report" on page 366 for the correct usage of the LISTX operands. Correct the command input and resubmit the job.

CPA0527E   LIMIT field not specified in LISTX(BY fields

Explanation: The field name specified in the LIMIT operand was not properly specified in LISTX(BY. Whenever LIMIT is specified, the field must be the same as one of the field names specified in the LISTX(BY operand.

System action: The LISTX report is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Ensure that the LIMIT operand contains the same field name as one of the field names

specified in the LISTX(BY operand. See "LISTX(BY(field1,field2,field3)" on page 367 for the list of fields.

CPA0528E   Only one field can be requested per LIMIT operand

Explanation: Only one LIMIT operand (for example, RESPONSE or FCAMCT) may be specified with the LISTX operand. If you wish two reports, specify the LIMIT operand separately with each LISTX operand.

System action: The LISTX report is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "LISTX(LIMIT" on page 368 for the LIMIT operand and its usage. Correct the command input and resubmit the job.

CPA0529E   LISTX(BY sort sequence is not ASCEND or DESCEND

Explanation: The sorting sequence specified in the BY operand is invalid. If specified, it must be ASCEND or DESCEND. If not specified, the default is ASCEND.

System action: The field is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: See "LISTX - Performance List Extended report" on page 366 for the format of the LISTX operand. Correct the command input and resubmit the job.

CPA0530E   SELECT operand has too many field values specified

Explanation: The SELECT operand specified too many field values. The restrictions are:
1. Maximum of 14 START/STOP/ACTIVE time ranges.
2. Maximum of 28 time/count values or ranges.
3. Maximum of 56 four (4) character values. For example, Transaction IDs.
4. Maximum of 28 eight (8) character values. For example, User IDs.

System action: Field values specified after the maximum number is reached are ignored and not used in selection processing.

User response: See "Using SELECT statements" on page 452. Correct the command input and resubmit the job.

CPA0531E   SELECT given without correct Selection Criteria

Explanation: Selection criteria were not specified, or were incorrectly specified for the selected field name.

System action: The SELECT statement is ignored and command processing continues. Processing is

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terminated after all commands are validated.

User response: See "Using SELECT statements" on page 452 for the SELECT operand and its usage. Correct the command input and resubmit the job.

CPA0537E   **Date field has invalid format, digit, or value**

Explanation: CICS PA was unable to recognize a date field because of an invalid format, digit, or value.

System action: Processing is terminated.

User response: See "Suboperands for Time Stamp fields" on page 347 for the correct date formats. Correct the command input and resubmit the job.

CPA0539E   **A maximum of two chain names are allowed, this one ignored**

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0540E   **Value previously used in another sublist**

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0542E   ***** Routines specified exceed maximum of 511**

Explanation: Internal capacity exceeded. The cumulative number of routines specified for execution exceeds capacity. This may occur if an unusually large amount of command input is specified in one CICS PA batch job.

System action: Processing is terminated.

User response: Split the command input into two or more batch jobs.

CPA0543E   **cannot be found as chained DISPLIST**

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0544E   **No input DDnames found from names on EXECUTE commands**

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0545E   **Error on BLDL**

Explanation: A BLDL SVC completed unsuccessfully. This can be caused by a load module that is in error, or not enough virtual storage was available to complete the request.

System action: Processing is terminated.

User response: Ensure that the load module library does not have a problem. If necessary, contact your IBM representative for help.

CPA0546E   **BLDL failed for Exit Routine module**

Explanation: A BLDL SVC completed unsuccessfully for an Exit Routine module. This can be caused by a load module that is in error, or not enough virtual storage was available to complete the request.

System action: Processing is terminated.

User response: Ensure that the load module library does not have a problem. If necessary, contact your IBM representative for help.

CPA0547E   **Header name invalid or not specified**

Explanation: This is an internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0548E   **TO-time prior to FROM-time**

Explanation: The TO date/time specification is prior to the FROM date/time specification.

System action: No records will be selected for processing.

User response: Correct the command input and resubmit the job.

CPA0549E   **Parms should not be enclosed in parentheses**

Explanation: Parameters specified under the PARM command should not be enclosed in parentheses.

System action: Processing is terminated.

User response: Remove the parentheses from the PARM command input and resubmit the job.

CPA0553E   STAE request ignored. Once STAE is turned off, it will not be reinstated

Explanation: PARM NOSTAE was specified in the command input cancelling the effective environment. After NOSTAE is specified, the affected environment cannot be restored. The subsequent PARM command specifying STAE is ignored, and processing continues.

System action: Processing continues without a STAE environment.

User response: Delete the PARM NOSTAE command from the command input and resubmit the job.

CPA0554E   End of command stream encountered when not expected

Explanation: The CICS PA scan routine reached the end of the command stream in the middle of processing a command.

System action: Processing is terminated.

User response: Verify that all necessary parts of the last command (for example, closing parentheses and commas) are present and that the format is correct. Correct the command input and resubmit the job.

CPA0555E   DCB has already been processed – will ABEND to prevent loop

Explanation: Internal logic error.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0556E   Invalid syntax – cannot find command

Explanation: The CICS PA scan routine was unable to process the command input.

System action: Processing is terminated.

User response: Correct the command input and resubmit the job.

CPA0557E   Unmatched quotes detected in data string

Explanation: The CICS PA scan routine found that a quotation mark was missing in a data string.

System action: The string is ignored and command processing continues. Processing is terminated after all commands are validated.

User response: Check the command input to ensure that all quotation marks are matched. Correct the command input and resubmit the job.

CPA0558E   Too much data to process – Work Buffer full

Explanation: CICS PA had too much command input data to process. The CICS PA scan routine can handle only 8192 bytes of input per command.

System action: Processing is terminated.

User response: Reduce the command input size. You may have to break the command stream into two separate commands.

CPA0559E   Input ends in a range indicator – dummy field generated

Explanation: The CICS PA scan routine found that the command input ended in the middle of a range indicator. For example, in ID(90-.., the upper range value and closing parenthesis are missing.

System action: The range is treated as a single value and command processing continues.

User response: Correct the command input and resubmit the job.

CPA0560E   Invalid character after quote string – not "," or "(" or ")"

Explanation: The three listed characters are the only allowable characters that can follow a data string in quotes.

System action: Command processing continues at the next operand. Processing is terminated after all commands are validated.

User response: Correct the command input and resubmit the job.

CPA0561E   Syntax error or unrecognizable format in field

Explanation: CICS PA was unable to recognize the input indicated in the error message.

System action: Processing is terminated.

User response: See "General command format" on page 337 for the command formats and check the syntax rules. Correct the command input and resubmit the job.

CPA0562E   Unpaired parentheses detected

Explanation: CICS PA found an unpaired parenthesis. Either one parenthesis is missing or there is an extra parenthesis.

System action: CICS PA ignores the unpaired parenthesis and command processing continues. Processing is terminated after all commands are validated.

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User response: Check the command input for unmatched parentheses. Correct the command input and resubmit the job.

CPA0563E   Exceeded maximum depth of parentheses nesting – 254

Explanation: When specifying operands and suboperands, the maximum number of parenthesis nesting levels is 254.

System action: Command processing continues at the next operand. Processing is terminated after all commands are validated.

User response: Correct the command input to eliminate extra parenthesis nesting and resubmit the job.

CPA0564E   Data string processed – unpaired quote detected

Explanation: CICS PA found a data string with unpaired quotation marks.

System action: Command processing continues at the next operand. Processing is terminated after all commands are validated.

User response: Check the command input for unmatched quotation marks. Insert the missing quotation mark or remove the extra one, and resubmit the job.

CPA0566E   Right parenthesis inserted at end of string

Explanation: An ending right parenthesis is missing in the command input.

System action: CICS PA inserts the missing parenthesis and command processing continues.

User response: Correct the command input to avoid getting this message, then resubmit the job.

CPA0567E   Exceeded maximum number of fields – 1022

Explanation: Only 1022 fields and operands are allowed in the command input.

System action: Extra fields are ignored and command processing continues.

User response: Correct the command input to eliminate the extra fields and resubmit the job.

CPA0568E   Command not found in command list – ignored

Explanation: CICS PA did not recognize the command indicated in the error message.

System action: The command is ignored and

command processing continues. Processing is terminated after all commands are validated.

User response: Correct the command input and resubmit the job.

CPA0580E   CMDLIB DD card is missing or DD DUMMY – unable to process command

Explanation: A COPY or INCLUDE instruction is specified with one or more member names to be copied in the command input. These members must reside on a PDS defined by the CMDLIB DD statement.

System action: Processing is terminated.

User response: Check the JCL for proper specification of the CMDLIB DD statement and resubmit the job.

CPA0581E   No member name specified – command ignored

Explanation: A COPY or INCLUDE instruction was encountered with no operands specifying member names to be copied.

System action: Processing is terminated.

User response: Add the desired PDS or library member name(s), or delete the COPY/INCLUDE instruction from the command input and resubmit the job.

CPA0582E   Operand must be a single list of names

Explanation: The COPY or INCLUDE instruction did not specify a list of valid member names.

System action: Processing is terminated.

User response: Correct the COPY or INCLUDE instruction to make the operand a member name or a list of member names and resubmit the job.

CPA0583E   is a member already copied – this entry skipped

Explanation: A second copy request for the member named in this error message has been encountered. It was copied from a previous member or specified twice under the COPY or INCLUDE instruction. To prevent any possible loops, the second copy is ignored.

System action: Processing is terminated.

User response: Correct the command input and resubmit the job.

CPA0584E   not found in Command Library

Explanation: A member name specified on the COPY or INCLUDE instruction does not reside in the library defined by the CMDLIB DD statement.

System action: Processing is terminated.

User response: Correct the command input and resubmit the job.

CPA0587E **PEAK percentile must be in the range 50% to 100%**

Explanation: The PEAK operand was outside the range of 50 to 100 percent.

System action: The operand is ignored and command processing continues.

User response: Correct the PEAK specification and resubmit the job.

CPA0593E **EXTERNAL operand is missing and External Work File not specified in JCL**

Explanation: The specified report did not specify an EXTERNAL operand and no External Work File is available in the JCL to satisfy the request. This report requires an External Work File to sort its records.

System action: The report is ignored and command processing continues.

User response: Specify an External Work File in the JCL with a DDname prefixed by CPAXW. Optionally specify this DDname in the EXTERNAL operand to associate the report with this file. If the EXTERNAL operand is not specified, CICS PA will assign the next available External Work File in the pool until they are exhausted. Refer to page 334 for information on the DD statements for External Work Files.

CPA0594E **GRAPH type not specified – default RESPONSE used**

Explanation: The GRAPH report did not specify a type. Valid GRAPH types are RESPONSE and TRANRATE.

System action: The default RESPONSE is used and processing continues.

User response: See "GRAPH - Graph reports" on page 442 for information on the command format. Correct the GRAPH operand and resubmit the job.

CPA0595E **SUBSTR specification invalid – must be SUBSTR(Start,Length)**

Explanation: Character User Field SUBSTR operand is not specified correctly.

• The first suboperand is the starting position and must have a value in the range 1 to 256.

• The second suboperand is the length.

• The length must be in the range 1 to 256 for the LIST report, or in the range 1 to 8 for the SUMMARY report.

• The length when added to the starting position should not exceed the length of the Character User Field.

System action: SUBSTR is ignored and command processing continues.

User response: Correct the SUBSTR specification and resubmit the job.

CPA0596E **INTERVAL specification invalid – must be HH:MM:SS (00:00:01 to 24:00:00)**

Explanation: The Performance Summary report time interval is not specified correctly. INTERVAL must specify a time interval between 1 second and 24 hours in the format *hh:mm:ss* where hh is the number of hours, mm is the number of minutes and ss is the number of seconds.

INTERVAL represents the time interval when the Summary report or extract is sorted by transaction Start or Stop time.

System action: INTERVAL is ignored and command processing continues.

User response: Correct the INTERVAL specification and resubmit the job.

CPA0597E **SYSID specification invalid – must be SYSID(applid,mvsid)**

Explanation: The Cross-System Extract SYSID operand is not specified correctly. The first suboperand is the APPLID that is set in the SMFMNPRN, SMFMNSPN and SMFMNJBN fields of the CMF records written to the Extract data set. The second suboperand is the MVS ID that is set in the SMFSID field of the CMF records written to the Extract data set.

System action: SYSID is ignored and command processing continues.

User response: Correct the SYSID specification and resubmit the job.

CPA0598E **SSID operand requires a 4 character name**

Explanation: A valid DB2 Subsystem ID was not specified with the SSID operand.

System action: The operand is ignored and command processing continues.

User response: Correct the SSID specification and resubmit the job.

CPA0599E **LOGGER INTERVAL must be in the range 1 to 60 minutes**

Explanation: The System Logger report INTERVAL operand was not in the range 1 to 60 minutes. The INTERVAL operand specifies the SMF Global Reporting

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Messages

Interval as defined in the SMFPRMnn PARMLIB member.

System action: The operand is ignored and command processing continues.

User response: Correct the INTERVAL specification and resubmit the job.

CPA0601E **Field exceeds maximum, value set to** *nnnnnnnn*

Explanation: A value was specified in the command input that exceeded the allowable maximum.

System action: Processing is terminated.

User response: The value is set as indicated in the error message. If this default value produces unsatisfactory results, correct the command and resubmit the job.

CPA0604E **BLDL failed for Prescan module** *xxxxxxxx* **in Dispatch Set** *xxxxxxxx*

Explanation: The CICS PA Prescan module cannot be found in the load library. This message should not occur and indicates a problem with the CICS PA load library.

System action: Processing is terminated.

User response: Ensure that the CICS PA Prescan module name is CPAPRSMF and that it resides in the CICS PA load library. Otherwise, contact your IBM representative for help.

CPA0605E **BLDL failed for program module** *xxxxxxxx*

Explanation: The specified CICS PA module cannot be found in the load library. This message should not occur and indicates a problem with the CICS PA load library.

System action: Processing is terminated.

User response: Ensure that the CICS PA module resides in the CICS PA load library. Otherwise, contact your IBM representative for help.

CPA0606E *xxxxxxxx* **program in Dispatch Set** *xxxxxxxx* **has no record codes to process**

Explanation: The specified CICS PA record processing module does not have a list of record codes to process. This message should not occur and indicates a problem with CICS PA.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0607E **Dispatch Set** *xxxxxxxx* **has no routines to execute**

Explanation: The command input for the specified Dispatch Set (INPUT DDname) does not have any reports to process. This message should not occur and indicates a problem with CICS PA.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA0608E **First command module to signal an error was** *xxxxxxxx*

Explanation: This error message is issued at the completion of command processing when errors have been encountered. It identifies the CICS PA module that issued the first error message.

System action: Processing is terminated.

User response: Look for error messages prior to this message that may indicate a command error. Correct the command input and resubmit the job.

CPA0609E **Field is longer than maximum (***nnnn* **chars) – possibly misplaced quote**

Explanation: A field in the command input, indicated in the error message, is longer than the maximum *nnnn* characters.

System action: Processing is terminated.

User response: Correct the command input so that the field is within the maximum, and resubmit the job.

CPA0611E **INPUT DDname** *xxxxxxxx* **is missing from JCL**

Explanation: The INPUT operand specified a DDname that is not defined in the JCL.

System action: The reports that use this input file cannot execute. Command processing continues.

User response: See "INput" on page 353 for more information on this operand. Specify the Input File in the JCL and resubmit the job.

CPA0612E **EXTERNAL DDname xxxxxxxx can only be used by a single report**

Explanation: The EXTERNAL operand specified a DDname that is used by a previously requested report. An External Work File can only be used by a single report.

System action: The report is ignored and command processing continues.

User response: Ensure that each report requiring an External Work File has either a unique EXTERNAL

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specification, or enough External Work Files files are defined in the pool. The External Work File pool consists of all DD statements in the JCL prefixed by CPAXW. Refer to page 334 for information on the DD statements for External Work Files.

CPA0613E   EXTERNAL DDname xxxxxxxx is missing from JCL

Explanation: The EXTERNAL operand specified a DDname that is not defined in the JCL.

System action: The report is ignored and command processing continues.

User response: Specify the missing External Work File in the JCL. Refer to page 334 for information on the DD statements for External Work Files.

CPA0614E   EXTERNAL DDname xxxxxxxx is not a DASD or Tape file

Explanation: The EXTERNAL operand specified a DDname that does not have a device type of DASD or Tape.

System action: The report is ignored and command processing continues.

User response: Correct the External Work File DD statement to specify a DASD or Tape data set. Refer to page 334 for information on the DD statements for External Work Files.

CPA0615E   Extract DDname xxxxxxxx is missing from JCL

Explanation: The DDNAME operand specified a DDname that is not defined in the JCL.

System action: The extract is ignored and command processing continues.

User response: Specify the missing Extract data set in the JCL. For more information on the command format and JCL for CICS PA extracts, refer to:
• "CROSSsystem - Cross-System Work report and extract" on page 402
• "EXPORT - Exported performance data extract" on page 445

CPA0620E   HDB name is missing or invalid

Explanation: The REPORT or LOAD operand does not specify a valid HDB name sub-operand.

System action: The report is request is ignored and command processing continues.

User response: Specify a valid HDB name with the REPORT or LOAD operand. For example:
`REPORT(MYHDB)` or `LOAD(MYHDB)`

CPA0621E   BY Field name xxxxxxxx is invalid

Explanation: The WAITANALYSIS BY operand specified an invalid CMF Field name. Only character and time stamp fields can be specified.

System action: The report request is ignored and command processing continues.

User response: Specify correct field name(s) in the BY operand.

CPA0622E   Field name xxxxxxxx is invalid

Explanation: The FIELDS operand for an HDB REPORT request specified an invalid field name.

System action: The REPORT request is terminated and command processing continues.

User response: Correct the FIELD names specification.

CPA0623E   First Field name xxxxxxxx is not a valid Sort Field

Explanation: The FIELDS operand for an HDB REPORT request did not specify a valid Sort field as the first field. Only Character (for example, TRAN) and Time Stamp (for example, START) fields can be Sort fields.

System action: The report request is ignored and command processing continues.

User response: Specify a valid Sort Field as the first field in the FIELDS operand.

CPA0624E   Field xxxxxxxx specified an invalid Type or Function xxxxxxxx

Explanation: The specified Field requested an invalid Field Type or Function. Allowed Field Types are: TIME, COUNT, TIMET, TIMEM, TIMES, DATE, DATEISO, DATEM, DATEYR. Allowed Field Functions are: AVE, TOTAL, DEV.

System action: The report request is ignored and command processing continues.

User response: Correct the FIELD Type or Function.

CPA0625E   Field xxxxxxxx is not a valid CMF Field name

Explanation: The specified Field is not a known CMF Performance Class Field name.

System action: The report request is ignored and command processing continues.

User response: Correct or remove the Field name.

Messages

CPA0626E   **Field ignored due to invalid Format.**
                     Valid Formats are K, KB, M, and MB

Explanation: The specified COUNT field format is
invalid.

System action: The field is ignored and command
processing continues.

User response: Specify a valid COUNT field format.

1000–1099 Dialog messages

These messages are issued by the CICS PA dialog during JCL generation, or when creating Report Sets, Report Forms, Object Lists, and so on. For other CICS PA dialog messages, refer to the Online Help.

CPA1001E   Parameter list error; Module=*xxxxxxxx*

Explanation: A CICS PA dialog module was passed an invalid parameter.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1002E   File not allocated; DDname=*xxxxxxxx*

Explanation: A CICS PA dialog module has detected that the specified DDname was not allocated.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1003E   DFHMNDUP has abended; Abend Code=*xxxxxxxx*, **Reason Code=***xxxxxxxx*, **APPLID=***xxxxxxxx*

Explanation: CICS PA could not create a new Report Form because the CICS Monitoring utility DFHMNDUP has abended.

System action: Processing is terminated.

User response: If the abend code is S806-04, then verify that either the SDFHAUTH and SDFHLINK data sets contain the DFHMNDUP module and the Monitoring Control Table (MCT) module, if the MCT suffix was specified. The SDFHAUTH and SDFHLINK data sets and the MCT suffix are specified in the CICS system definition. Otherwise, contact your IBM representative for help.

CPA1004E   DFHMNDUP failed to generate CMF Performance Dictionary record; Reason=EOD

Explanation: CICS PA could not create a new Report Form because the CICS Monitoring utility DFHMNDUP failed to created a CMF Dictionary record.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1005E   ATTACH macro error; Ret=*xx*

Explanation: CICS PA could not create a new Report Form because the ATTACH macro failed.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1006E   DFHMNDUP has failed; RC=*xx*

Explanation: CICS PA could not create a new Report Form because the CICS Monitoring utility DFHMNDUP completed with a non-zero return code.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1020E   Table Library not available; DDname=*xxxxxxxx*

Explanation: A CICS PA dialog module has detected that the specified DDname for the Table library was not allocated.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1021E   System Definition Table for CICS PA *xxxx* **has a format error**

Explanation: CICS PA determined that the Table containing your CICS System and SMF File definitions is not in the correct format.
- If the CICS PA version is V1R1, then CICS PA was attempting to upgrade your CICS PA V1R1 definitions to V1R2 or later, but failed to do so.
- If the CICS PA version is V1R2 or later, then CICS PA failed to read your saved System Definitions.

The System Definitions Table is a member in your Permanent ISPF Table Library, which is specified in your CICS PA Settings.
- For CICS PA V1R1, the member name is CPASMFIN.
- For CICS PA V1R2 or later, the member name is CPASMFI2.

System action: Processing is terminated.

User response: Try one of the following:
- If the problem occurred during an upgrade from CICS PA V1R1 to V1R2 or later, then you can retry you request. When prompted to upgrade your CICS PA V1R1 System Definitions, reply Exit or Cancel.
- For CICS PA V1R2 or later, delete member CPASMFI2 from your Permanent ISPF Table Library, then retry your request.

Messages

Note: In both cases, you will lose your saved System Definitions and you will not be able to recover them. If this problem is occurring regularly, or you do not want to delete your saved System Definitions, then contact your IBM representative for help.

CPA1022E   Member *xxxxxxxx* **is not a Report Form**

Explanation: CICS PA determined that the specified member is not in the correct format for a Report Form.

System action: Processing is terminated.

User response: Verify that the specified member in the Report Form library is a Report Form. Otherwise, contact your IBM representative for help.

CPA1023E   Report Form data set not available; DDname=*xxxxxxxx*

Explanation: A CICS PA dialog module has detected that the specified DDname for the Report Form library was not allocated.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1024E   Member *xxxxxxxx* **is not a Report Set**

Explanation: CICS PA determined that the specified member is not in the correct format for a Report Set.

System action: Processing is terminated.

User response: Verify that the specified member in the Report Set library is a Report Set. Otherwise, contact your IBM representative for help.

CPA1025E   Report Set data set not available; DDname=*xxxxxxxx*

Explanation: A CICS PA dialog module has detected that the specified DDname for the Report Set library was not allocated.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1026E   No systems are defined

Explanation: No systems have been defined in System Definitions.

System action: Processing is terminated.

User response: From **System Definitions,**define the CICS systems, DB2 subsystems and System Loggers that you wish to report against.

CPA1027E   Report Set JCL generation failed. System or Group is not defined

Explanation: CICS PA has detected that your System Definitions do not contain the System or Group of systems that were requested for report processing. Message CPA1030E is issued in conjunction with this message to identify the offending System or Group, as well as the report that is causing the failure.

System action: Processing is terminated.

User response: Either from **System Definitions,** define the System or Group that you wish to report against, or alter the report to specify a System or Group that is eligible for report processing.

CPA1028E   Report Set JCL generation failed. System or Group not specified

Explanation: You have not specified the System or Group of systems to be reported. System or Group can be specified at the following System Definition points:
1. In the individual reports or extracts of the Report Set
2. At submission time in the Run Report Set panel
3. In the Global Options of the Report Set

The above list also reflects the precedence of selecting systems for reporting.

System action: Processing is terminated.

User response: Specify the System or Group that you wish to report against.

CPA1029E   Report Set JCL generation failed. System or Group has no SMF files

Explanation: CICS PA has detected that the System or Group requested for report processing has no SMF Files specified. Message CPA1030E is issued in conjunction with this message to identify the offending System or Group, as well as the report that is causing the failure.

System action: Processing is terminated.

User response: From **System Definitions,** define SMF Files for the offending System or Group.

CPA1030E   *aaaaaa=system,* Report=*report,* **Output=***output*

Explanation: This message details failure information and is issued in conjunction with a previous error message (1027-1029).
*   *aaaaaa=system* is the offending System or Group name.
*   *report* is the Report that specified the offending System or Group name.
*   *output* is the Report Output DDname or Extract Data Set name that further identifies the report or extract.

System action: Action is determined by the previously issued error message.

User response: Response is determined from the previously issued error message. Use this message to determine which report or extract is causing the failure.

CPA1031E **Report Set JCL generation failed. No reports are active**

Explanation: CICS PA has detected that no reports are active in the Report Set.

System action: Processing is terminated.

User response: Activate the required reports in the Report Set.

CPA1032E **Report Set JCL generation failed. Report Form is not defined**

Explanation: CICS PA has detected that a Report Form specified in a report is not in the Report Form library. Message CPA1034E is issued in conjunction with this message to identify the offending Report Form, as well as the report that is causing the failure.

System action: Processing is terminated.

User response: From **Report Forms,** define the required Report Form, or alter the report to specify a Report Form that is defined.

CPA1033E **Report Set JCL generation failed. Report Form not in correct format**

Explanation: CICS PA determined that the specified member is not in the correct format for a Report Form. Message CPA1034E is issued in conjunction with this message to identify the offending Report Form, as well as the report that is causing the failure.

System action: Processing is terminated.

User response: Verify that the specified member in the Report Form library is a Report Form. Otherwise, contact your IBM representative for help.

CPA1034E **Form=**formname **Report=**report, **Output=**output

Explanation: This message details failure information, and is issued in conjunction with a previous error message.
* formname is the offending Report Form.
* report is the Report that specified the offending Report Form.
* output is the Report Output DDname that further identifies the report.

System action: Action is determined by the previously issued error message.

User response: Response is determined from the previously issued error message. Use this message to

determine which report is causing the failure.

CPA1035E **Object List data set not available; DDname=**xxxxxxxx

Explanation: A CICS PA dialog module has detected that the specified DDname for the Object List library was not allocated.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA1036E **Report Set JCL generation failed. Object List is not defined**

Explanation: CICS PA has detected that an Object List specified in a report is not in the Object List library. Message CPA1038E is issued in conjunction with this message to identify the offending Object List, as well as the report that is causing the failure.

System action: Processing is terminated.

User response: From **Object Lists,** define the required Object List, or alter the report to specify an Object List that is defined.

CPA1037E **Report Set JCL generation failed. Object List not in correct format**

Explanation: CICS PA determined that the specified member is not in the correct format for an Object List. Message CPA1038E is issued in conjunction with this message to identify the offending Object List, as well as the report that is causing the failure.

System action: Processing is terminated.

User response: Verify that the specified member in the Object List library is an Object List. Otherwise, contact your IBM representative for help.

CPA1038E **Object List=**objlist, **Report=**report, **Output=**output

Explanation: This message details failure information, and is issued in conjunction with a previous error message.
* objlist is the offending Object List.
* report is the report or extract that specified the offending Object List.
* output is the Report Output DDname or Extract Data Set name that further identifies the report or extract.

System action: Action is determined for the previously issued error message.

User response: Response is determined from the previously issued error message. Use this message to determine which report or extract is causing the failure.

Messages

CPA1039E   System Definitions are corrupted

Explanation: CICS PA has detected that your System Definitions are corrupted. The System Definitions are stored in your CICS PA Table Library, member CPASMFIN for V1R1 and CPASMFI2 for V1R2 or later.

System action: System validation processing is terminated.

User response: Contact your IBM representative for help.

CPA1040E   Report Set JCL generation failed. Systems to be reported have no SMF Files specified

Explanation: CICS PA has detected that all Systems and Groups to be reported do not have any SMF Files specified.

System action: Processing is terminated.

User response: From **System Definitions,** define SMF Files for the Systems or Groups that you wish to report against. Alternatively, change the Missing SMF File option on the Run Report Set panel from 3 (Disregard offending reports) to either:

1. Issue error message. CICS PA will inform you which System or Group does not have SMF Files specified, or

2. Leave DSN unresolved in JCL. CICS PA will generate the report JCL, but leave the SMF File data set name(s) unresolved in the JCL.

CPA1041E   Reason=*reason* Member=*membername* DSN=*datasetname*

Explanation: CICS PA could not SAVE your currently active EDIT session. The reasons why your SAVE request may have failed are:
*   **ABEND** - Save request has abended
*   **PDS Directory Full** - The PDS directory is full
*   **BLDL or STOW error** - Unsupported return code from BLDL/STOW SVC

System action: The SAVE request is aborted.

User response: For ABENDSx37 conditions, compress the data set or re-allocate the data set with a larger primary/secondary space allocation.

For Directory Full or ABENDSB14-0000000C conditions, re-allocate the data set with a larger directory block allocation.

For all other conditions, contact your IBM representative for help.

CPA1042E   Dictionary data set is not RECFM=V

Explanation: The specified data set cannot be used as a Dictionary data set because the record format is not Variable (RECFM=V).

System action: Processing is terminated.

User response: Ensure that the Dictionary data set is allocated with a variable record format. Alternatively, specify a new Dictionary data set name. CICS PA will allocate it with the correct attributes.

CPA1043E   Dictionary data set is a PDS but member name is not specified

Explanation: The specified Dictionary data set is Partitioned (PDS) but a member name is not specified.

System action: Processing is terminated.

User response: Specify a member name and retry your request.

2000–2099 Data Take-up messages

These messages are issued during take-up processing. See "Personal Take-Up from SMF File" on page 95.

CPA2000I   Take-up processing has completed, RC=*nn*

Explanation: Take-up processing completed with the specified return code. If the return code is not zero, then Take-up processing encountered a problem.

System action: Take-up terminates.

User response: None required.

CPA2001E   SYSPRINT IS MISSING FROM THE JCL - RUN ABORTED

Explanation: The required SYSPRINT DD card is missing from the JCL.

System action: Processing is terminated, RC=16.

User response: Correct the JCL and resubmit.

CPA2002E   Take-up aborted due to an unrecoverable error - RSN=*nnn* **INFO=***xxxxxxxx*

Explanation: CICS PA could not complete take-up due to an unrecoverable error. RSN is the reason code. For some reason codes, INFO provides additional information.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA2003E   Dialog table DD CPATABL is missing from the JCL

Explanation: No CPATABL DD card is present in the JCL but it is required.

System action: Processing is terminated.

User response: Correct the JCL and resubmit.

CPA2004E   Dialog table data set (CPATABL) is unavailable

Explanation: The data set associated with the CPATABL DD was unavailable when Take-up attempted to save. This is likely to be due to a conflict with a CICS PA Dialog user, or another Take-up job running concurrently.

System action: Processing is terminated.

User response: Resubmit the job.

CPA2005W   Dialog Take-up member is invalid and will be replaced

Explanation: The existing dialog Take-up member (CPASMFTU) was found to be in error and will be replaced, correcting the member.

System action: Processing continues.

User response: None required.

CPA2006E   Concatenated data sets are not supported, ignored DD SMFIN*xxx*

Explanation: An SMFIN DD was found to contain concatenated data sets, which are not supported by Take-up. The Dialog associates Systems with SMF Files. Take-up must be able to identify the Systems present within each SMF data set.

System action: Processing continues, however the SMFIN DD(s) with concatenated data sets will be ignored.

User response: If the ignored SMFIN DD's data sets are required, then modify the JCL for the given SMF files so that each of the concatenated data sets is assigned a unique SMF file name (SMFIN) and resubmit.

CPA2007E   SMF input files (SMFIN) missing from the JCL

Explanation: No SMF input files were found in the JCL. SMF input files have a DDname prefix of SMFIN.

System action: Processing is terminated.

User response: Correct the JCL and resubmit.

CPA2008W   Unable to determine Unit Name for SMF file *SMFINxxx*

Explanation: Take-up processing is unable to determine the Unit Name associated with the given SMF file's data set.

System action: Processing continues but the SMF file will not be assigned a Unit Name.

User response: After Take-up has been applied, manually specify the Unit Name for this SMF file in **System Definitions.**

CPA2009E   Unsupported device type for SMF file *SMFINxxx*

Explanation: The given SMF file's data set has a device type that is not supported. Only DASD or Tape devices are supported by CICS PA.

System action: Processing is terminated.

Messages

User response: Ensure that the SMF file resides on a DASD or Tape volume then resubmit the job.

CPA2010E   **Unable to obtain information for SMF file** *SMFINxxx* **- RC=***nn* **RSN=***nnn* **INFO=***xxxxxxxx*

Explanation: Take-up processing is unable to obtain some required information for the given SMF file. RC is the return code, RSN is the reason code, and INFO is either UNIT or DSN indicating the type of information that could not be obtained.

System action: Processing is terminated.

User response: Contact your IBM representative for help.

CPA2011E   **Dialog limit of 16 VOLSERs exceeded for SMF file** *SMFINxxx*

Explanation: The given SMF file has specified an uncataloged data set of more than 16 volumes, which is the Dialog limit. The CICS PA Dialog only supports data sets with more than 16 volumes if they are cataloged.

System action: Processing is terminated.

User response: Specify cataloged data sets, or uncataloged data sets with no more than 16 volumes.

CPA2012I   **Processing started for SMF file** *SMFINxxx*

Explanation: Take-up processing has begun for the specified SMF file.

System action: Processing continues.

User response: None required.

CPA2013I   **Processing ended for SMF file** *SMFINxxx* **-** *nnn* **system(s) found**

Explanation: Take-up processing has ended for the specified SMF file, and the number of systems identified by Take-up is given.

System action: Processing continues.

User response: None required.

CPA2014I   **CMF record for CICS system found, APPLID=***xxxxxxxx* **Release=***v.r.m*

Explanation: Take-up processing has encountered a new CICS system, or a higher release level for a CICS system already listed.

System action: Processing continues.

User response: None required.

CPA2015I   **DB2 Accounting record found, DB2 SSID=***xxxx* **Release=***v.r*

Explanation: Take-up processing has encountered a new DB2 subsystem or a higher release level for a DB2 subsystem already listed.

System action: Processing continues.

User response: None required.

CPA2016I   **MVS System Logger record found, System=***xxxxLOGR*

Explanation: Take-up processing has encountered a new MVS System Logger system.

System action: Processing continues.

User response: None required.

CPA2017I   **SMF records for System** *xxxx* **start at** *mm/dd/yyyy hh:mm:ss.th*

Explanation: Take-up processing found SMF records for the given system, starting at the nominated date-time.

System action: Processing continues.

User response: None required.

CPA2018I   **DB2 subsystem ignored as Accounting Tokens not set, SSID=***xxxx*

Explanation: Take-up processing has encountered records for a DB2 subsystem with CICS Attach activity, however the Accounting Token field is not set in any of these records, that is, ACCOUNTREC(TASK) or ACCOUNTREC(UOW) was not in use. As such the records are not suitable for CICS PA reporting and the DB2 subsystem name will not be included in Take-up.

System action: Processing continues.

User response: None required.

CPA2019W   **CMF record with unsupported release encountered - records ignored APPLID=***xxxxxxxx* **Release=***v.r.m*

Explanation: A CMF record for a CICS release that is not supported by CICS PA has been encountered. All records for this CICS release are ignored.

System action: Processing continues.

User response: None required.

CPA2020W   **DB2 accounting record with unsupported release encountered - records ignored SSID=***xxxx* **Release=***v.r*

Explanation: A DB2 accounting record for a DB2 release that is not supported by CICS PA has been

---

encountered. All records for this DB2 release are ignored.

System action: Processing continues.

User response: None required.

CPA2022I   OMEGAMON record for CICS system found, APPLID=*xxxxxxxx*

Explanation: Take-up processing has encountered a new CICS system in the OMEGAMON for CICS (SMF 112) record.

OMEGAMON records do not specify the release level of the CICS system. If take-up processing does not find this CICS system in other types of record, then the CICS system defined in CICS PA will not specify a release level (VRM).

System action: Processing continues.

User response: None required.

3000–3099 HDB messages

These messages are issued during HDB processing. See Part 6, "Using the Historical Database (HDB)," on page 525.

CPA3001E   HDB Register is corrupted, Reason=xx. Run Housekeeping to diagnose and repair

Explanation: Your HDB Register is corrupted, or an update action cannot be performed against it. The reason codes are:

01   HDB Register is empty on a non-Initialization call.CICS PA automatically initializes the HDB Register when you first use it.

02   HDB Register does not contain a Control record.

11   Selection Criteria record missing.

21   PC Segment Code not set.

22   PS/PI Segment Code not set.

23   PI Segment Code has invalid Date/Time.

24   PS Object List is missing.

25   Unsupported PS Field Type.

31   Template contains too many fields.

System action: CICS PA immediately stops processing.

User response: Contact your IBM representative for help.

CPA3002W   HDB Object in use, try later, Name=xxxxxxxx

Explanation: Your request to edit an HDB Register object cannot be honored because another user is already editing it. The object can be an HDB Definition, a Template or an Object List.

System action: CICS PA immediately stops processing.

User response: Retry your request when the object becomes available.

CPA3003W   object not found, Name=name

Explanation: The specified object could not be found in the HDB Register. The object can be an HDB definition, a Template, a Data Set Container or an Object list.

System action: CICS PA immediately stops processing.

User response: Refresh the list of objects by exiting the current panel, and then retry your request. If the object still appears in the list but cannot be selected, then contact IBM.

CPA3004W   HDB Register not available, try later

Explanation: Your request to update the HDB Register could not be honored because another user is already updating it.

System action: CICS PA immediately stops processing.

User response: Updates should complete very quickly, so retry your save request.

CPA3005E   ENQ macro failed, RC=xx

Explanation: The ENQ macro has failed with an unsupported Return Code.

System action: CICS PA immediately stops processing.

User response: Exit ISPF to free the ENQ and then retry your request. If the problem reoccurs, contact IBM.

CPA3007W   object already exists, Name=name

Explanation: The specified object already exists in the HDB Register. You cannot create a new object with the same name. The object can be an HDB Definition, a Template or an Object List.

System action: CICS PA immediately stops processing.

User response: Select another name for the object and retry your request.

CPA3008W   object is required, Name=name

Explanation: The specified object cannot be deleted from the HDB Register because another object references it. The object can be an HDB Definition, a Template or an Object List.

System action: CICS PA immediately stops processing.

User response: None required. The object cannot be deleted at present. In some cases, running a Housekeeping job will resolve this issue because Housekeeping deletes objects from the HDB Register that are no longer needed.

CPA3009C   HDB - failing component and action

Explanation: CICS PA has suffered a catastrophic failure in the specified component.

System action: CICS PA immediately stops processing.

User response: If the problem reoccurs, contact your IBM representative.

CPA3010W   HDB Definition is using an undefined Template, HDB=_xxxxxxxx,_ **Template=**_xxxxxxxx_

Explanation: There was an attempt to save an HDB definition that references an undefined Template Name

System action: The request is rejected

User response: Create the Template and retry the request, or change the name of the Template to one that exists in the HDB Register and retry the request.

CPA3011E   HDB Template not found, Name=_xxxxxxxx_

Explanation: An integrity problem exists in the HDB Register. A Data Set Container references a non-existent Template.

System action: CICS PA immediately stops processing.

User response: Contact your IBM representative for help.

CPA3012E   _object_ **not defined, Name=**_name_

Explanation: The specified object could not be found in the HDB Register, but is required to complete the current request. The object can only be an HDB definition, a Template, a Data Set Container or an Object list.

System action: CICS PA immediately stops processing.

User response: Specify an object that is defined in the HDB. If available, use **Prompt** (F4) to select from a list of defined objects.

4000–4099 HDB SMF Statistics messages

These messages are issued during HDB SMF Statistics processing. See Part 5, "Statistics reporting using the dialog," on page 501.

CPA4001E   PDS Member does not exist; Name=*xxxxxxxx*, BLDL RC=*xxxx-xxxx*

Explanation: The SMF input file is a PDS but the specified member name does not exist. The BLDL return and reason codes indicate the failure reason.

System action: SMF file processing stops.

User response: Verify that the member exists in the SMF file PDS:

- If it does not exist, then specify a member name that exists and retry your request.
- If it does exist, then check the BLDL return and reason codes to determine the failure reason.

CPA4002E   CICS Statistics not found in SMF File *filename*

Explanation: CICS PA did not find any CICS Statistics records in the SMF File.

System action: CICS PA stops processing the specified SMF File.

User response: If CICS Statistics records were expected for this file, review your CICS Statistics settings and SMF Dump options.

CPA4003E   CICS Version *xxx* is not supported

Explanation: CICS PA cannot process the CICS statistics because they were generated by an unsupported version of CICS Transaction Server. CICS PA only supports CICS TS V2R2 (620) and higher.

System action: CICS PA stops processing the specified SMF File.

User response: You cannot use CICS PA to report Statistics for this version of CICS Transaction Server.

CPA4004W   Attention Interrupt has stopped SMF File processing

Explanation: CICS PA has stopped reading the SMF Input file because an Attention Interrupt was received.

System action: CICS PA stops reading the SMF file and displays only data read to this point.

User response: Press Enter to resume SMF Input file processing.

CPA4005E   SMF input file is not available. DDname *ddname* allocation error; RDJFCB RC=*rc*

Explanation: The RDJFCB system service determined

that the SMF input file is not allocated to the specified DDname.

System action: SMF file processing stops.

User response: Verify that the SMF file data set name is specified correctly. The data set must reside on an online DASD volume. If the data set is cataloged, it must reside on the cataloged VOLSER. If the data set is not cataloged, it must reside on the specified VOLSER.

CPA4006E   SMF input file does not reside on the specified volume; VOLSER=*volser*, OBTAIN RC=*rc*

Explanation: The DADSM OBTAIN system service determined that the SMF input file does not reside on the required volume, as indicated in the Catalog or the specified VOLSER.

System action: SMF file processing stops.

User response: Verify that the SMF file data set name is specified correctly. The data set must reside on an online DASD volume. If the data set is cataloged, it must reside on the cataloged VOLSER. If the data set is not cataloged, it must reside on the specified VOLSER.

CPA4007E   CICS Statistics ID is not supported; STID=*stid*, Domain=*xx*, VRM=*yyy*, BlkID=*zz*

Explanation: The specified CICS Statistics ID (STID as defined in macro DFHSTIDS) is not supported by CICS PA. CICS PA supports all types of CICS statistics records and this error should not occur.

System action: The CICS Statistics record is ignored by CICS PA and SMF file processing continues.

User response: If the specified Stats ID is a valid ID defined in DFHSTIDS, then contact IBM. Support for this ID may need to be added via the service process.

If the specified ID is not a valid Stats ID, then contact IBM. CICS PA may have incorrectly interpreted the statistics record.

CPA4008E   SMF File Open request failed; ABEND=*xxxxxxxx-yyyyyyyy*

Explanation: The requested SMF File could not be opened. The OPEN request failed with the specified ABEND Code. The most common reason is ABENDS913 because access was denied due to an authorization failure.

System action: CICS PA processing stops.

User response: Check the OPEN SVC messages for

the failure reason. Correct the problem and retry your request.

CPA4009E **SMF input file is not DSORG=PS;**
DS1DSORG=*xxxx*

Explanation: The SMF input file does not have a Data Set Organization (DSORG) of PS. CICS PA only supports SMF files with DSORG=PS. DS1DSORG is the unsupported DSORG from the DSCB.

System action: SMF file processing stops.

User response: Ensure that the specified SMF input file is a valid SMF data set with DSORG=PS.

CPA4010E **CICS Statistics for the selected interval**
are no longer available

Explanation: The CICS statistics interval that you selected is no longer available in the SMF File. The SMF File must have been updated after CICS PA first identified all the statistics intervals.

System action: SMF file processing stops.

User response: Refresh the statistics intervals. Exit from processing this data set then reprocess it to rebuild the statistics intervals.

CPA4011E **CICS Domain is not supported;**
Domain=*xx,* **VRM=***yyy*

Explanation: The specified Statistics Domain ID (SMFSTDID in macro DFHSMFDS) is not supported by CICS PA. CICS PA supports all types of CICS statistics records and this error should not occur.

System action: The CICS Statistics record is ignored by CICS PA. SMF file processing continues.

User response: If the Domain ID is a valid Domain for the specified release of CICS Transaction Server, then contact IBM. Support for this Domain ID may need to be added via the service process.

If the specified Domain ID is not a valid Domain, then contact IBM. CICS PA may have incorrectly interpreted the statistics record.

CPA4012E **CICS Statistics record processing**
failed; Domain=*xx,* **VRM=***yyy*

Explanation: CICS PA could not interpret a Statistics record because its format is not supported.

System action: The CICS Statistics record is ignored by CICS PA. SMF file processing continues.

User response: Verify that the record can be reported by the CICS Statistics utility program (DFHSTUP). If DFHSTUP processes the record successfully, then contact IBM. CICS PA may have incorrectly interpreted the statistics record.

Messages

Chapter 22. Problem determination

This chapter contains information about CICS PA problem determination.

- Eliminating user errors

  This section gives you a general idea of how to do CICS PA problem determination. It describes the preliminary steps you can take to be sure that the problem you are experiencing is a CICS PA problem and discusses some common user errors that you may be able to resolve without IBM assistance.

- Diagnosis

  This section describes the steps you need to follow to gather the information needed to work with IBM support.

For the list and explanation of CICS PA messages, see Chapter 21, "Messages."

Eliminating user errors

This section explains how to diagnose problems or failures quickly by identifying the failing program component – a CICS PA error, an error in other components of the system on which CICS PA is running, or a user error. The following information is discussed:
- How to collect diagnostic information
- How to identify types of CICS PA problems
- Common causes of CICS PA problems.

Collecting helpful diagnostic information

Perform the following steps to determine the source of a problem:

1. Describe the symptoms.
2. List the following items:
   - Error message data
   - Program termination message data.
3. Analyze the failure as described in the following section.

Identifying types of problems

After collecting the information described in the preceding paragraph, determine the type of problem you have found. Problems may be caused by:

- The way you are using CICS PA
  - CICS PA command language or Job Control language (JCL) errors
  - Data-related errors
  - Improper installation.
- Failure with other software components, such as CICS or DFSORT
- CICS PA program errors.

The first step toward solving your problem might be to ask yourself and others in your area if this is the first time that this function or request has been made, or if this function or request worked in the past and has started failing recently. If the function worked before, find out as much as possible about what has changed in your system. There is a good chance that the change has directly or indirectly caused your problem. If this is the first time the function has been attempted, the problem is most likely the way you are using the function, or that the function is in error.

Eliminating user errors

With CICS PA, problems may be caused either by the way you are using the product, by another component of your operating system, or by a combination of these factors. The next section tells you how to identify common causes of these types of problems.

For information on program errors that are caused by the CICS PA program product, see "Diagnosis" on page 714.

Common causes of CICS PA problems

JCL and batch command errors

When CICS PA detects a JCL error or batch command coding error, it issues messages to help you determine the cause. Many of these messages contain all the information you need to find and fix the problem. See Chapter 21, "Messages," on page 671 for a complete listing of CICS PA messages. The text of each entry explains the message and tells you the following:

- What action CICS PA takes when it issues the message, and
- What action you should take to eliminate the error condition.

Data-related problems

Before assuming that an error is caused by a defect in CICS PA, ensure that the input data CICS PA is trying to process is valid. Three types of data problems may occur that prevent CICS PA from accurately processing data collected by the CICS Monitoring Facility (CMF). These data problems are:

1. Absence of data dictionaries
2. Absence of data within a particular record type
3. Invalid data values

Absence of data dictionaries: Two symptoms occur when data dictionaries are absent.

The first, and most common, symptom is a message indicating that data records were encountered before dictionary records. This may be due either to an error in the CMF data or a user-related error. You can cause this error when copying CMF records from one data set to another. When copying CMF records, make sure that the dictionary records are copied along with the data records and appear ***before*** their associated data records. If the data set was not copied, the missing or misplaced dictionaries may be caused by an error in CMF.

Note: When CICS writes to an MVS SMF data set, CICS does not get notified that a data set switch has occurred and cannot write the dictionaries at the beginning of the new data set. It is necessary that SMF data sets be processed in the same order in which they were created.

The second symptom is the occurrence of numerous error messages. These messages tell you that CICS PA was unable to find the indicated data field. This happens when the dictionaries are lost and is due to improper link edit of the dictionary processor, ECPDICMF.

Missing fields: The second problem, absence of data within a particular record type, may be a CMF data error or a user interpretation error. Because many of the fields collected by CMF are optional, you may exclude the data from a particular record. CICS PA issues a message indicating that the field is **Missing** from the record. Although this is not a severe error, the report may not provide an accurate

account of the data. This is especially true on Summary reports. If a data field in the summation is missing for any part of the summarization interval, then the field is marked Missing.

Invalid data values: The final data-related problem concerns invalid data values. If CICS PA is having trouble processing some of the CMF data fields, check for errors by validating the data in the following way:

Run the CICS batch program DFH$MOLS. For information on using DFH$MOLS, see the *CICS Operation and Utilities Guide*. DFH$MOLS can print every field in each of the CMF record types and if it cannot process the data correctly, then the problem is with the data.

Note: DFH$MOLS generates a page or more of output for each CMF record that you select for processing. Be very careful when specifying how much data you want printed.

Absence of data records

A good way to determine whether or not you are processing proper data is to examine the Dispatcher Tables Summary (see Figure 405) and End of File Record Counts (see Figure 406).

These two summaries are automatically produced at the end of report and extract processing. They provide a good starting point for problem determination when it is expected that some or all of the input data is missing.

If more detailed information on the data is needed, CICS PA provides a **DUMP** command which lists all or parts of the input data. See "DUMP command" on page 717 for information on how to use this command.

```
 V2R1M0      07:49:07   1/13/2005                     CICS Performance Analyzer
                                                       Dispatcher Tables Summary


 SMF File    Off PreScan   Routine   Output        EOF      ParmName  Codes
 SMFIN001+    4  CPAPRSMF   CPALSTMF  LIST0001       Y       LIST0001  31
                           CPALSXMF  LSTX0001       Y       LSTX0001  31
                           CPASUMMF  SUMM0001       Y       SUMM0001  31
                           CPAFNLMF  TOTL0001       Y       TOTL0001  31


 SMFIN002+    4  CPAPRSMF* CPAMROMF* CROS0001*      Y       CROS0003  31
                           CPAMROMF* CROS000M*      Y       CROS0004  31
                           CPAMROMF* CROS0001*      Y       CROS0005  31
                           CPAMROMF* CROS000M*      Y       CROS0006  31
                           CPAMROMF* CROS0001*      Y       CROS0007  31
                           CPAMROMF* CROS000M*      Y       CROS0008  31
```

Figure 405. Example of the Dispatcher Tables Summary report

```
 V2R1M0                                      CICS Performance Analyzer
                                              End of File Record Counts


             DDname   RecID         Record Type          Count    Pct of Total
             SMFIN001  X'30'   Performance Dictionary        3        0.04%
                       X'31'   Performance Class           250        3.18%
                       X'51'   CICS Statistics           7,596       96.73%
                       X'54'   CICS Server Statistics        4        0.05%
             SMFIN001  TOTAL                             7,853      100.00%
                       TOTAL   SMF Records               3,419
             SMFIN002  X'30'   Performance Dictionary        3        0.01%
                       X'31'   Performance Class           126        0.22%
                       X'41'   Exception Class               8        0.01%
                       X'51'   CICS Statistics          57,294       99.76%
             SMFIN002  Total                            57,431      100.00%
                       Total   SMF Records               2,462
```

Figure 406. Example of the End of File Record Counts report

Common causes of CICS PA problems

Batch Abends U1000, U1001, U1002

When the batch report processor encounters a severe error condition in STAE environments, it issues user abends 1000, 1001, or 1002. Analyzing the problem with the following factors in mind may help you identify the cause of the problem and its solution.

- User 1000 abend indicates that CICS PA encountered an error after command processing and before reading any data.
- User 1001 abend indicates that CICS PA encountered an error after reading in all the data and reaching end-of-file on the input file.
- User 1002 abend indicates that CICS PA encountered an error while reading and processing data.

CICS PA also issues a message indicating that a STAE exit was invoked.

Note: The STAE environment allows you to signal a logical end-of-file to record processors when an unexpected error occurs. The data accumulated up to the point of the error is then available for reports. Without logical end-of-file, the data would be lost.

User abends issued by the STAE exit processing frequently mask the real problem. When CICS PA encounters an error condition, such as a protection exception, it tries to recover and produce as many reports as possible, without reading any more data. It then abnormally terminates with one of the user abends listed above.

Logic errors are generally easier to diagnose if processing stops immediately. When a STAE exit executes, memory and register values change, making the cause of the abend harder to identify. If you need a dump for analysis by IBM support, be sure to specify **PARM=NOSTAE** on the EXEC statement of your JCL.

If you specify NOSTAE and still get user abends, check the error messages. Some severe CICS PA messages cause user abends 1000, 1001, or 1002 after they are issued. NOSTAE does not affect these user abends. If you need to call IBM support, make sure you know which message causes you to stop processing.

Diagnosis

If you are experiencing difficulty using CICS PA, your first step should be to make sure the problem is not due to the way you are using the product. Before going through the procedures described here, you should eliminate user error as a cause of your problem. If you have turned to this section without reviewing "Eliminating user errors" on page 711, you may save yourself some time and trouble by making sure that your problem is not discussed there.

If you have determined that CICS PA is the cause of your problem, you need to gather information to help isolate the problem and find a solution. The information required is:

- Type of failure
- Function that failed
- Release level
- Maintenance level

Some of the information (for example, program number or service level), is independent of the particular problem and does not require you to make a judgement. For other information, you must choose one of several possibilities. Your choice depends on the specific symptoms of the problem.

For reporting the problem to IBM, you need to be prepared to provide supporting materials and evidence such as sample inputs and outputs, and a description of the circumstances in which the problem occurred.

Types of failure

The following descriptions should help you determine which condition best describes the type of failure that has occurred. If you do not know which condition to select, choose one that best describes the failure. You should consult the *CICS Problem Determination Guide* for additional information on abends, waits, loops, and incorrect output.

Abend

This type of failure occurs when a program terminates prematurely. This condition almost always produces a dump. When an abend occurs, collect the following information before calling IBM:
- The abend code of the dump
- A brief description of what was entered to cause the abend to occur
- If the abend was a program interrupt,
  - The program that abended
  - The displacement within the program where the abend occurred
  - The data which was being referenced when the abend occurred.

Documentation

This problem involves online and hardcopy documentation. Report a documentation problem when it falls into the categories listed below:

- Documented descriptions of the CICS PA organization or operation do not match the actual organization or operation.

- Information that is essential to the installation, operation, or service of CICS PA is missing from or incorrect in the documentation.

- Information in the documentation is unclear and prevents the effective use of CICS PA.

> **Note:** If you have suggestions, comments, or questions concerning a CICS PA book, use the appropriate Reader's Comment Form at the back of the book.

IBM requires the following information in order to resolve a documentation problem:
- The complete document number, including the revision number, or the message number or function in error, if the error is in the online help text
- The section and page number of the error
- The sentence or sentences in error
- A brief description of what you think is correct.

Error

An error condition is normally detected by the presence of an error message. Information required to resolve this type of problem is:
- The message number
- The program that issued the message, if known
- The data that caused the message to appear.

Incorrect output

This type of problem involves missing, extra and unnecessary, or incorrect data. CICS PA is not likely to recognize that a problem exists; therefore, an error message may not appear. IBM needs the following information to resolve this type of problem:
- The report in error

Problem diagnosis

> • The field or fields in error
> • Some indication of why you feel the information is incorrect, unnecessary, or needed.

Loop

A loop condition generally causes an abend to occur. MVS has specific abend codes to indicate loop conditions. These codes can be found in the appropriate books. When a loop occurs, the following information is required:
> • The program causing the loop
> • As many instructions as can be reasonably determined within the loop
> • A brief description of what caused the loop to occur.

Message

A message error occurs when a message:
> • Contains incorrect data
> • Is not documented, or is not documented correctly
> • Is generated when it shouldn't be
> • Is not generated when it should be
> • Is not the message which should occur.

The information required to resolve this type of error is:
> • The message number
> • A brief description of what is wrong with the message
> • A brief description of what the message should be.

Performance

A performance problem is generally one of the hardest problems to resolve. Typically, it does not occur in a batch job. If you feel you are having a performance problem with CICS PA, supply IBM with the following information:
> • Your operating environment, that is, the processor, the operating system, and any other factor which you feel might be contributing to the problem.
> • The CICS PA function
> • The CICS PA module(s), if it can be reasonably determined
> • Whether or not the problem always occurs, or only occurs at certain times
> • If the problem occurs occasionally, a description of what else was running in the system when the problem occurred.

Wait

This type of error normally occurs under the following conditions:
> • CICS PA is waiting for some condition to be satisfied.
> • CICS PA appears to be waiting for some event that is unlikely to occur.
> • CICS PA has not recognized the occurrence of an event for which it has suspended processing.

Sometimes a wait error condition generates a dump. You should refer to the appropriate operating system reference books to determine the abend code associated with this type of error condition. The information necessary to resolve this type of problem is:
> • The online function or report involved
> • A dump, if one was generated.

Release level (VRM)

The release level (Version, Release, Modification) of CICS PA should be stated in all communications with IBM. In addition, you should know the release level of any of the following products that are relevant to the problem:
> • MVS or OS/390
> • CICS (This should be at least CICS for MVS/ESA™ Version 4 Release 1.)
> • DFSORT.

Maintenance level

The maintenance level of CICS PA corresponds to the latest PTF tape installed on CICS PA, plus any Authorized Program Analysis Reports (APARs) installed on top of the Program Temporary Fix (PTF) tape. If no maintenance has been installed on CICS PA, tell the IBM support representative the date when CICS PA was installed on your system. It is also necessary to know the maintenance level of the products described in the previous section "Release level (VRM)" on page 716.

Problem materials and evidence

If a problem occurs while using CICS PA, the following information is required:

1. A copy of the input file used for the job
2. A copy of the job stream used for the job, including the Job Control Language (JCL) and commands
3. A listing of the output generated, including:
   • The report listing
   • The messages issued.
4. A written scenario describing what information the user was trying to achieve from the CICS PA report at the time of the error (also state whether the sample jobs were run at the time CICS PA was installed).

DUMP command

Use this command to instruct CICS PA to dump a selected subset of records from the input data set. The **DUMP** command defines the options for the DUMP utility tool. The contents of the selected records are printed on **SYSPRINT** in a hexadecimal and alphanumeric format similar to the print format of an abend storage dump.

Notes:

1. The **DUMP** command cannot be used in conjunction with the **CICSPA** command. The input data set is processed differently for the two commands and does not work for both in the same job.
2. See the runtime parameter **PARM=MAXDUMP(nnn)** if you are dumping records longer than 256 bytes. **MAXDUMP** defaults to **256.** You must increase this value in order to print more than 256 bytes.

The format of the **DUMP** command is:

Name	Command	Operands	Comments
name (or blank)	**DUMP**	[input definition operands] [record selection operands]	comments (or blank)

The input definition operands are:

CODES='codelist'
   Specifies the code values for the records to be processed. Each code is a 2-digit hexadecimal number. A value, or a list of ranges of values, separated by commands, may be specified. If more than one value is specified, the code list must be enclosed in quotes. The default is to process records for all record codes **('00'-'FF')**.

   To identify relevant record codes for study, look at the Dispatcher Tables Summary which is automatically produced at the end of CICS PA report and extract processing. It lists the record codes of the CMF records considered for processing. See Figure 405 on page 713 for an example of this report.

EXECUTE(ddname)
Must be specified. It is the DDname of the input data set to process. There is no default.

OFFSET=nnn|4
Specifies the offset of the record code into the record. The record code is a one-byte field at position OFFSET+1 into the record. For example, OFFSET=4 defines a record code in the fifth byte of the record. The offset must be a numeric value less than 256. The default is **4.**

The record selection operands are:

FROM([date,][time]) TO([date,][time])
Specifies the date and time range.

SKIP=number
Specifies the number of records skipped before processing. If not specified, no records are skipped.

STOPAFT=number
Specifies the number of records processed, starting after the number skipped (specified using **SKIP**). The maximum value is 999999999. If not specified, all records are processed.

DUMP example
Figure 407 shows an example of the **DUMP** command. In this example, the DUMP command is used to print a record dump of the CMF performance class records.

```
//CICSPA  JOB (Job Accounting)
//CPA      EXEC PGM=CPAMAIN,PARM=MAX(32767)
//STEPLIB  DD  DSN=CPA.V2R1M0.SCPALINK,DISP=SHR
//CMDLIB   DD  DSN=CPA.V2R1M0.CMDLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//SMFIN001 DD  DSN=CICS.APPL1.FILE1,DISP=SHR
//             DSN=CICS.APPL1.FILE2,DISP=SHR,UNIT=AFF=SMFIN001
//SMFIN002 DD  DSN=CICS.APPL2.FILE1,DISP=SHR,UNIT=AFF=SMFIN001
//SYSIN    DD  *
 ....
 DUMP CODES='31',EXECUTE(SMFIN001),STOPAFT=5
 ....
/*
//
```

Figure 407. Sample JCL — DUMP command

Chapter 23. CMF Field ID × CICS version

The following cross-reference table relates the CICS monitoring facility (CMF) field IDs for performance class and transaction resource class data with the CICS versions to which they apply.

Some columns in the table require explanation:

CICS PA field name

The name used in report forms, HDB templates, and selection criteria (and the corresponding batch command operands FIELDS and SELECT):

- "Same" indicates that the CICS PA field name is the same as the CMF field name.
- "None" indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

Column heading

The heading used to identify the field in CICS PA reports and extract data sets.

CICS version

The CICS versions to which a field applies:

- Yes, the field applies to this CICS version
- – No, the field does not apply to this CICS version

The table is sorted by CMF group and CMF field ID.

Notes:

1. DBCTL fields can only be specified if the MCT contains the DBCTL EMP defined in SDFHSAMP member DFH$MCTD.

2. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of "CICSPA". These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).

3. The FILENAME and TSQNAME fields are only available when CMF transaction resource class data is being collected.

4. The DFHAPPL fields are only available when application programs invoke the application naming event monitoring points.

Table 16. Cross-reference: CMF field ID × CICS version

| CMF field | | | | | | CICS version | | | | | | |
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
CICSPA	A	001	TOTRECS	Same	TotlRecs	•	•	•	•	•	•	Cross-System Total record count
CICSPA	A	002	APPLRECS	Same	APPLRecs	•	•	•	•	•	•	Cross-System Application records
CICSPA	A	003	TRANROUT	Same	TranRout	•	•	•	•	•	•	Cross-System Transaction Routing records
CICSPA	A	004	FUNCSHIP	Same	FuncShip	•	•	•	•	•	•	Cross-System Function Shipping records
CICSPA	A	005	DPLRECS	Same	DPL Recs	•	•	•	•	•	•	Cross-System DPL records
CICSPA	D	901	RESP	RESPONSE	Response	•	•	•	•	•	•	Transaction response time
CICSPA	X	902	TASKCNT	Same	#Tasks	•	•	•	•	•	•	Total Task count
CICSPA	C	903	APPLID	Same	APPLID	•	•	•	•	•	•	CICS Generic APPLID
CICSPA	C	904	MVSID	Same	MVS ID	•	•	•	•	•	•	MVS SMF ID
CICSPA	C	905	JOBNAME	Same	Jobname	•	•	•	•	•	•	Job Name
CICSPA	D	906	COMMWAIT	Same	CommWait	•	•	•	•	•	•	Communications wait time
CICSPA	D	907	IOWAIT	Same	I/O Wait	•	•	•	•	•	•	Total IO wait time

Cross-reference: CMF Field ID × CICS version

Table 16. Cross-reference: CMF field ID × CICS version (continued)

CMF field				CICS PA field name	Column heading	CICS version						Description
Group	Type	ID	Name			530	610	620	630	640	650	
CICSPA	D	908	IRESP	Same	Int Resp	•	•	•	•	•	•	Transaction internal response time
CICSPA	C	909	RELEASE	Same	Rlse	•	•	•	•	•	•	CICS release
CICSPA	D	910	JVMMTIME	Same	JVM Meth	–	•	•	•	•	•	JVM Method time
CICSPA	D	911	RMIOTIME	Same	RMIOTime	•	•	•	•	•	•	Resource Manager Interface (RMI) other time
CICSPA	C	912	UOWID	Same	UOW ID	•	•	•	•	•	•	Network UOW ID
CICSPA	C	913	UOWSEQ	Same	UOW Seq	•	•	•	•	•	•	Network UOW Sequence Number
CICSPA	X	914	TASKTCNT	Same	#TTasks	•	•	•	•	•	•	Total Task Termination count
CICSPA	C	916	FILENAME	Same	FileName	•	–	•	•	•	•	File name
CICSPA	C	917	TSQNAME	Same	TSQ Name	•	–	•	•	•	•	Temporary Storage Queue Name
CICSPA	D	918	TOTCPU	Same	Tot CPU	•	•	•	•	•	•	Total Task CPU Time
DBCTL	C	001	PSBNAME	Same	PSB Name	•	•	•	•	•	•	PSB Name
DBCTL	A	002	POOLWAIT	Same	PoolWait	•	•	•	•	•	•	Elapsed wait time for Pool Space
DBCTL	A	003	INTCWAIT	Same	IntCWait	•	•	•	•	•	•	Elapsed wait time for Intent Conflict
DBCTL	A	004	SCHTELAP	Same	SchTElap	•	•	•	•	•	•	Elapsed time for Schedule Process
DBCTL	A	005	DBIOELAP	Same	DBIOElap	•	•	•	•	•	•	Elapsed time for Database I/O
DBCTL	A	006	PILOCKEL	Same	PILockEl	•	•	•	•	•	•	Elapsed time for PI Locking
DBCTL	A	007	DBIOCALL	Same	DBIOCall	•	•	•	•	•	•	Number of Database I/Os
DBCTL	A	008	GUCALL	Same	GUcall	•	•	•	•	•	•	Number of Database GU calls issued
DBCTL	A	009	GNCALL	Same	GNcall	•	•	•	•	•	•	Number of Database GN calls issued
DBCTL	A	010	GNPCALL	Same	GNPcall	•	•	•	•	•	•	Number of Database GNP calls issued
DBCTL	A	011	GHUCALL	Same	GHUcall	•	•	•	•	•	•	Number of Database GHU calls issued
DBCTL	A	012	GHNCALL	Same	GHNcall	•	•	•	•	•	•	Number of Database GHN calls issued
DBCTL	A	013	GHNPCALL	Same	GHNPcall	•	•	•	•	•	•	Number of Database GHNP calls issued
DBCTL	A	014	ISRTCALL	Same	ISRTcall	•	•	•	•	•	•	Number of Database ISRT calls issued
DBCTL	A	015	DLETCALL	Same	DLETcall	•	•	•	•	•	•	Number of Database DLET calls issued
DBCTL	A	016	REPLCALL	Same	REPLcall	•	•	•	•	•	•	Number of Database REPL calls issued
DBCTL	A	017	DLICALLS	Same	DLIcalls	•	•	•	•	•	•	Total DL/I Database calls
DBCTL	A	018	TESTENQS	Same	TestENQs	•	•	•	•	•	•	Number of Test Enqueues
DBCTL	A	019	TESTENQW	Same	TestENQW	•	•	•	•	•	•	Number of waits on Test Enqueues
DBCTL	A	020	TESTDEQS	Same	TestDEQs	•	•	•	•	•	•	Number of Test Dequeues
DBCTL	A	021	UPDTENQS	Same	UpdtENQs	•	•	•	•	•	•	Number of Update Enqueues
DBCTL	A	022	UPDTENQW	Same	UpdtENQW	•	•	•	•	•	•	Number of waits on Update Enqueues
DBCTL	A	023	UPDTDEQS	Same	UpdtDEQs	•	•	•	•	•	•	Number of Update Dequeues
DBCTL	A	024	EXCLENQS	Same	ExclENQs	•	•	•	•	•	•	Number of Exclusive Enqueues
DBCTL	A	025	EXCLENQW	Same	ExclENQW	•	•	•	•	•	•	Number of waits on Exclusive Enqueues
DBCTL	A	026	EXCLDEQS	Same	ExclDEQs	•	•	•	•	•	•	Number of Exclusive Dequeues
DBCTL	A	027	DEDBCALL	Same	DEDBcall	•	•	•	•	•	•	Number of DEDB calls
DBCTL	A	028	DEDBRDOP	Same	DEDBRdOp	•	•	•	•	•	•	Number of DEDB read operations
DBCTL	A	029	OVFLBFRU	Same	OvflBfrU	•	•	•	•	•	•	Number of Overflow Buffers used
DBCTL	A	030	UOWCONTS	Same	UOWConts	•	•	•	•	•	•	Number of UOW Contentions
DBCTL	A	031	DEDBBFRW	Same	DEDBBfrW	•	•	•	•	•	•	Number of waits for DEDB buffers
DBCTL	A	032	THREDCPU	Same	ThredCPU	•	•	•	•	•	•	Thread TCB CPU time
DBCTL	T	033	SCHEDSTA	Same	SchedSta	•	•	•	•	•	•	IMS Schedule start time
DBCTL	T	034	SCHEDEND	Same	SchedEnd	•	•	•	•	•	•	IMS Schedule end time
DBCTL	A	035	DBGETS	Same	DBget	•	•	•	•	•	•	Number of Database Get calls issued
DBCTL	A	036	DBUPDATE	Same	DBupdate	•	•	•	•	•	•	Number of Database Update calls issued
DBCTL	A	037	DBWAITS	Same	DBwait	•	•	•	•	•	•	Number of Database waits
DFHAPPL	C	001	APPLNAME	APPLTRAN	Tran	•	–	•	•	•	•	Application naming Tran ID
DFHAPPL	C	001	APPLNAME	APPLPROG	Program	•	–	•	•	•	•	Application naming Program
DFHCBTS	C	200	PRCSNAME	Same	BTS Proc	•	•	•	•	•	•	BTS Process name
DFHCBTS	C	201	PRCSTYPE	Same	BTS PTyp	•	•	•	•	•	•	BTS Process type
DFHCBTS	C	202	PRCSID	None	BTS Root	•	•	•	•	•	•	BTS Root Activity identifier
DFHCBTS	C	203	ACTVTYID	None	BTSActID	•	•	•	•	•	•	BTS Activity identifier
DFHCBTS	C	204	ACTVTYNM	Same	BTSActNm	•	•	•	•	•	•	BTS Activity name
DFHCBTS	A	205	BARSYNCT	Same	BTS Sync	•	•	•	•	•	•	BTS synchronous Process/Activity count

| Table 16. Cross-reference: CMF field ID × CICS version (continued)

CMF field				CICS PA field name	Column heading	CICS version						Description
Group	Type	ID	Name			530	610	620	630	640	650	
DFHCBTS	A	206	BARASYCT	Same	BTS Asyn	•	•	•	•	•	•	BTS asynchronous Process/Activity count
DFHCBTS	A	207	BALKPACT	Same	BTS Link	•	•	•	•	•	•	BTS Link Process/Activity count
DFHCBTS	A	208	BADPROCT	Same	BTS DefP	•	•	•	•	•	•	BTS Define Process requests
DFHCBTS	A	209	BADACTCT	Same	BTS DefA	•	•	•	•	•	•	BTS Define Activity requests
DFHCBTS	A	210	BARSPACT	Same	BTSReset	•	•	•	•	•	•	BTS Reset Process/Activity requests
DFHCBTS	A	211	BASUPACT	Same	BTS Susp	•	•	•	•	•	•	BTS Suspend Process/Activity requests
DFHCBTS	A	212	BARMPACT	Same	BTSResum	•	•	•	•	•	•	BTS Resume Process/Activity requests
DFHCBTS	A	213	BADCPACT	Same	BTSCancl	•	•	•	•	•	•	BTS Cancel Process/Activity requests
DFHCBTS	A	214	BAACQPCT	Same	BTSAcqui	•	•	•	•	•	•	BTS Acquire Process/Activity requests
DFHCBTS	A	215	BATOTPCT	Same	BTSTotal	•	•	•	•	•	•	BTS Total Process/Activity requests
DFHCBTS	A	216	BAPRDCCT	Same	BTSPDCRq	•	•	•	•	•	•	BTS Process Data Containers requests
DFHCBTS	A	217	BAACDCCT	Same	BTSADCRq	•	•	•	•	•	•	BTS Activity Data Containers requests
DFHCBTS	A	218	BATOTCCT	Same	BTSTDCRq	•	•	•	•	•	•	BTS Process/Activity Data Container requests
DFHCBTS	A	219	BARATECT	Same	BTSRtvEv	•	•	•	•	•	•	BTS Retrieve-Reattach Event requests
DFHCBTS	A	220	BADFIECT	Same	BTSDefEv	•	•	•	•	•	•	BTS Define-Input Event requests
DFHCBTS	A	221	BATIAECT	Same	BTSTimEv	•	•	•	•	•	•	BTS TIMER Event requests
DFHCBTS	A	222	BATOTECT	Same	BTSTotEv	•	•	•	•	•	•	BTS Event-related requests
DFHCHNL	A	321	PGTOTCCT	Same	PGTOTCCT	–	–	–	–	•	•	Total number of CHANNEL CONTAINER requests
DFHCHNL	A	322	PGBRWCCT	Same	PGBRWCCT	–	–	–	–	•	•	BROWSE CHANNEL CONTAINER requests
DFHCHNL	A	323	PGGETCCT	Same	PGGETCCT	–	–	–	–	•	•	GET CHANNEL CONTAINER requests
DFHCHNL	A	324	PGPUTCCT	Same	PGPUTCCT	–	–	–	–	•	•	PUT CHANNEL CONTAINER requests
DFHCHNL	A	325	PGMOVCCT	Same	PGMOVCCT	–	–	–	–	•	•	MOVE CHANNEL CONTAINER requests
DFHCHNL	A	326	PGGETCDL	Same	PGGETCDL	–	–	–	–	•	•	GET CHANNEL CONTAINER data length
DFHCHNL	A	327	PGPUTCDL	Same	PGPUTCDL	–	–	–	–	•	•	PUT CHANNEL CONTAINER data length
DFHCHNL	A	328	PGCRECCT	Same	PGCRECCT	–	–	–	–	•	•	Number of Containers created
DFHCHNL	A	329	PGCSTHWM	Same	PGCSTHWM	–	–	–	–	–	•	Maximum Container Storage allocated to task
DFHCICS	T	005	START	Same	Start	•	•	•	•	•	•	Task start time
DFHCICS	T	006	STOP	Same	Stop	•	•	•	•	•	•	Task stop time
DFHCICS	A	025	CFCAPICT	Same	CFCIsAPI	•	•	•	•	•	•	OO Foundation Class requests
DFHCICS	C	089	USERID	Same	Userid	•	•	•	•	•	•	User ID
DFHCICS	S	103	EXWTTIME	EXWAIT	Exc Wait	•	•	•	•	•	•	Exception Conditions wait time
DFHCICS	C	112	RTYPE	Same	RTyp	•	•	•	•	•	•	Performance record type
DFHCICS	C	130	RSYSID	Same	RSID	•	•	•	•	•	•	Remote System ID
DFHCICS	A	131	PERRECNT	RECCOUNT	RecCount	•	•	•	•	•	•	Task Performance record count
DFHCICS	C	167	SRVCLASS	Same	SrvClass	•	•	•	•	•	•	WLM Service Class
DFHCICS	C	168	RPTCLASS	Same	RptClass	•	•	•	•	•	•	WLM Report Class
DFHCICS	C	359	ONETWKID	Same	ONETWKID	–	–	–	–	–	•	Originating Network ID
DFHCICS	C	360	OAPPLID	Same	OAPPLID	–	–	–	–	–	•	Originating CICS APPLID
DFHCICS	T	361	OSTART	Same	OStart	–	–	–	–	–	•	Originating Task start time
DFHCICS	P	362	OTRANNUM	OTASKNO	OTaskNo	–	–	–	–	–	•	Originating Transaction number
DFHCICS	C	363	OTRAN	Same	OTran	–	–	–	–	–	•	Originating Transaction identifier
DFHCICS	C	364	OUSERID	Same	OUserid	–	–	–	–	–	•	Originating User ID
DFHCICS	C	365	OUSERCOR	Same	OUserCor	–	–	–	–	–	•	Originating User Correlator
DFHCICS	C	366	OTCPSVCE	OTCPSRVC	OTCPIPSr	–	–	–	–	–	•	Originating TCP/IP Service Name
DFHCICS	A	367	OPORTNUM	OPORT	OPORT	–	–	–	–	–	•	Originating TCP/IP Port Number
DFHCICS	C	368	OCLIPADR	OCLINTIP	OClintIP	–	–	–	–	–	•	Originating Client or Telnet IP address
DFHCICS	A	369	OCLIPORT	Same	OCLIPORT	–	–	–	–	–	•	Originating Client IP Port Number
DFHCICS	A	370	OTRANFLG	Same	OTranFlg	–	–	–	–	–	•	Originating Transaction flags
DFHCICS	A	370	OTRANFLG	OFCTYTYP	OFctyTyp	–	–	–	–	–	•	Originating Transaction Facility Type
DFHCICS	C	370	OTRANFLG	OORIGIN	OOrigin	–	–	–	–	–	•	Originating Transaction Origin type
DFHCICS	C	370	OTRANFLG	OTRANTYP	OTranTyp	–	–	–	–	–	•	Originating Transaction type
DFHCICS	C	371	OFCTYNME	OFCTY	OFcty	–	–	–	–	–	•	Originating Transaction Facility name
DFHDATA	A	179	IMSREQCT	Same	IMS Reqs	•	•	•	•	•	•	IMS (DBCTL) requests
DFHDATA	A	180	DB2REQCT	Same	DB2 Reqs	•	•	•	•	•	•	DB2 requests

Cross-reference: CMF Field ID × CICS version

Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHDATA	S	186	IMSWAIT	Same	IMS Wait	•	•	•	•	•	•	IMS (DBCTL) wait time
DFHDATA	S	187	DB2RDYQW	Same	DB2ThdWt	•	•	•	•	•	•	DB2 Thread wait time
DFHDATA	S	188	DB2CONWT	Same	DB2ConWt	•	•	•	•	•	•	DB2 Connection wait time
DFHDATA	S	189	DB2WAIT	Same	DB2SQLWt	•	•	•	•	•	•	DB2 SQL/IFI wait time
DFHDATA	A	395	WMQREQCT	Same	WMQ Reqs	–	–	–	–	–	•	Number of WebSphere MQ requests
DFHDATA	S	396	WMQGETWT	Same	WMQGetWt	–	–	–	–	–	•	WebSphere MQ GETWAIT wait time
DFHDEST	A	041	TDGETCT	TDGET	TDGET	•	•	•	•	•	•	Transient data GET requests
DFHDEST	A	042	TDPUTCT	TDPUT	TDPUT	•	•	•	•	•	•	Transient data PUT requests
DFHDEST	A	043	TDPURCT	TDPURGE	TDPURGE	•	•	•	•	•	•	Transient data PURGE requests
DFHDEST	A	091	TDTOTCT	TDTOTAL	TD Total	•	•	•	•	•	•	Transient data Total requests
DFHDEST	S	101	TDIOWTT	TDWAIT	TD Wait	•	•	•	•	•	•	VSAM transient data I/O wait time
DFHDOCH	A	223	DHDELCT	DHDELETE	DHDELETE	–	–	–	–	–	•	Document Handler DELETE requests
DFHDOCH	A	226	DHCRECT	DHCREATE	DHCREATE	•	•	•	•	•	•	Document Handler CREATE requests
DFHDOCH	A	227	DHINSCT	DHINSERT	DHINSERT	•	•	•	•	•	•	Document Handler INSERT requests
DFHDOCH	A	228	DHSETCT	DHSET	DHSET	•	•	•	•	•	•	Document Handler SET requests
DFHDOCH	A	229	DHRETCT	DHRETRVE	DHRETRVE	•	•	•	•	•	•	Document Handler RETRIEVE requests
DFHDOCH	A	230	DHTOTCT	DHTOTAL	DH Total	•	•	•	•	•	•	Document Handler Total requests
DFHDOCH	A	240	DHTOTDCL	Same	DHDocLen	•	•	•	•	•	•	Total length of all documents created
DFHEJBS	C	311	CBSRVRNM	Same	Corb	–	–	–	•	•	•	CorbaServer name
DFHEJBS	A	312	EJBSACCT	EJBACTIV	EJBActiv	–	–	–	•	•	•	Number of Bean State Activation requests
DFHEJBS	A	313	EJBSPACT	EJBPASIV	EJBPasiv	–	–	–	•	•	•	Number of Bean State Passivation requests
DFHEJBS	A	314	EJBCRECT	EJBCREAT	EJBCreat	–	–	–	•	•	•	Number of Bean Creation requests
DFHEJBS	A	315	EJBREMCT	EJBREMOV	EJBRemov	–	–	–	•	•	•	Number of Bean Removal requests
DFHEJBS	A	316	EJBMTHCT	EJBMETHD	EJBMethd	–	–	–	•	•	•	Number of EJB Method Calls
DFHEJBS	A	317	EJBTOTCT	EJBTOTAL	EJBTotal	–	–	–	•	•	•	Total Number of EJB requests
DFHFEPI	A	150	SZALLOCT	SZALLOC	SZALLOC	•	•	•	•	•	•	Conversations allocated count
DFHFEPI	A	151	SZRCVCT	SZRCV	SZRCV	•	•	•	•	•	•	FEPI RECEIVE requests
DFHFEPI	A	152	SZSENDCT	SZSEND	SZSEND	•	•	•	•	•	•	FEPI SEND requests
DFHFEPI	A	153	SZSTRTCT	SZSTART	SZSTART	•	•	•	•	•	•	FEPI START requests
DFHFEPI	A	154	SZCHROUT	Same	SZChrOut	•	•	•	•	•	•	FEPI characters sent count
DFHFEPI	A	155	SZCHRIN	Same	SZChrIn	•	•	•	•	•	•	FEPI characters received count
DFHFEPI	S	156	SZWAIT	Same	SZ Wait	•	•	•	•	•	•	FEPI services wait time
DFHFEPI	A	157	SZALLCTO	Same	SZAlocTO	•	•	•	•	•	•	Allocate conversation time-out count
DFHFEPI	A	158	SZRCVTO	Same	SZRecvTO	•	•	•	•	•	•	Receive Data time-out count
DFHFEPI	A	159	SZTOTCT	SZTOTAL	SZ Total	•	•	•	•	•	•	FEPI API and SPI requests
DFHFILE	A	036	FCGETCT	FCGET	FCGET	•	•	•	•	•	•	File GET requests
DFHFILE	A	037	FCPUTCT	FCPUT	FCPUT	•	•	•	•	•	•	File PUT requests
DFHFILE	A	038	FCBRWCT	FCBROWSE	FCBROWSE	•	•	•	•	•	•	File Browse requests
DFHFILE	A	039	FCADDCT	FCADD	FCADD	•	•	•	•	•	•	File ADD requests
DFHFILE	A	040	FCDELCT	FCDELETE	FCDELETE	•	•	•	•	•	•	File DELETE requests
DFHFILE	S	063	FCIOWTT	FCWAIT	FC Wait	•	•	•	•	•	•	File I/O wait time
DFHFILE	A	070	FCAMCT	Same	FCAMRq	•	•	•	•	•	•	File access-method requests
DFHFILE	A	093	FCTOTCT	FCTOTAL	FC Total	•	•	•	•	•	•	File Control requests
DFHFILE	S	174	RLSWAIT	Same	RLS Wait	•	•	•	•	•	•	RLS File I/O wait time
DFHFILE	S	175	RLSCPUT	RLSCPU	RLS CPU	•	•	•	•	•	•	RLS File Request CPU (SRB) time
DFHFILE	S	176	CFDTWAIT	Same	CFDTWait	•	•	•	•	•	•	CF Data Table access requests wait time
DFHJOUR	S	010	JCIOWTT	JCWAIT	JC Wait	•	•	•	•	•	•	Journal I/O wait time
DFHJOUR	A	058	JNLWRTCT	JNLPUT	JnlWrite	•	•	•	•	•	•	Journal write requests
DFHJOUR	A	172	LOGWRTCT	LOGWRITE	LogWrite	•	•	•	•	•	•	Log Stream write requests
DFHMAPP	A	050	BMSMAPCT	BMSMAP	BMSMAP	•	•	•	•	•	•	BMS MAP requests
DFHMAPP	A	051	BMSINCT	BMSIN	BMSIN	•	•	•	•	•	•	BMS IN requests
DFHMAPP	A	052	BMSOUTCT	BMSOUT	BMSOUT	•	•	•	•	•	•	BMS OUT requests

Table 16. Cross-reference: CMF field ID × CICS version (continued)

CMF field				CICS PA field name	Column heading	CICS version						Description
Group	Type	ID	Name			530	610	620	630	640	650	
DFHMAPP	A	090	BMSTOTCT	BMSTOTAL	BMSTotal	•	•	•	•	•	•	BMS Total requests
DFHPROG	A	055	PCLINKCT	PCLINK	PCLINK	•	•	•	•	•	•	Program LINK requests
DFHPROG	A	056	PCXCTLCT	PCXCTL	PCXCTL	•	•	•	•	•	•	Program XCTL requests
DFHPROG	A	057	PCLOADCT	PCLOAD	PCLOAD	•	•	•	•	•	•	Program LOAD requests
DFHPROG	C	071	PGMNAME	PROGRAM	Program	•	•	•	•	•	•	Program name
DFHPROG	A	072	PCLURMCT	PCLURM	PCLNKURM	•	•	•	•	•	•	Program LINK URM requests
DFHPROG	A	073	PCDPLCT	PCDPL	PCDPLINK	•	•	•	•	•	•	Distributed Program Link (DPL) requests
DFHPROG	C	113	ABCODEO	Same	ABor	•	•	•	•	•	•	Original ABEND Code
DFHPROG	C	114	ABCODEC	Same	ABcu	•	•	•	•	•	•	Current ABEND code
DFHPROG	S	115	PCLOADTM	Same	PCLOADWt	•	•	•	•	•	•	Program Library wait time
DFHPROG	A	286	PCDLCSDL	Same	PCDLCSDL	–	–	–	–	•	•	Container data length for DPL reqs with CHANNEL
DFHPROG	A	287	PCDLCRDL	Same	PCDLCRDL	–	–	–	–	•	•	Container data length for DPL RETURN w/ CHANNEL
DFHPROG	A	306	PCLNKCCT	Same	PCLNKCCT	–	–	–	–	•	•	LINK requests with CHANNEL option
DFHPROG	A	307	PCXCLCCT	Same	PCXCLCCT	–	–	–	–	•	•	XCTL requests with CHANNEL option
DFHPROG	A	308	PCDPLCCT	Same	PCDPLCCT	–	–	–	–	•	•	DPL requests with CHANNEL option
DFHPROG	A	309	PCRTNCCT	Same	PCRTNCCT	–	–	–	–	•	•	Program RETURN requests with CHANNEL option
DFHPROG	A	310	PCRTNCDL	Same	PCRTNCDL	–	–	–	–	•	•	Container data length for RETURN with CHANNEL
DFHRMI	S	001	RMITOTAL	Same	RMITotal	–	–	•	•	•	•	RMI total elapsed time
DFHRMI	S	002	RMIOTHER	Same	RMI Othr	–	–	•	•	•	•	RMI other elapsed time
DFHRMI	S	003	RMIDB2	Same	RMI DB2	–	–	•	•	•	•	RMI elapsed time for DB2 requests
DFHRMI	S	004	RMIDBCTL	Same	RMIDBCTL	–	–	•	•	•	•	RMI elapsed time for DBCTL requests
DFHRMI	S	005	RMIEXDLI	Same	RMIEXDLI	–	–	•	•	•	•	RMI elapsed time for EXEC DLI requests
DFHRMI	S	006	RMIMQM	Same	RMI MQ	–	–	•	•	•	•	RMI elapsed time for WebSphere MQ requests
DFHRMI	S	007	RMICPSM	Same	RMI CPSM	–	–	•	•	•	•	RMI elapsed time for CICSPlex SM requests
DFHRMI	S	008	RMITCPIP	Same	RMITCPIP	–	–	•	•	•	•	RMI elapsed time for TCP/IP socket requests
DFHSOCK	S	241	SOIOWTT	SOWAIT	SockWait	•	•	•	•	•	•	Inbound Socket I/O wait time
DFHSOCK	A	242	SOBYENCT	Same	SockEcry	•	•	•	•	•	•	Secure Socket bytes encrypted count
DFHSOCK	A	243	SOBYDECT	Same	SockDcry	•	•	•	•	•	•	Secure Socket bytes decrypted count
DFHSOCK	C	244	CLIPADDR	CLIENTIP	ClientIP	•	•	•	•	•	•	Client IP or Telnet client IP address
DFHSOCK	C	245	TCPSRVCE	Same	TCPIPSrv	–	•	•	•	•	•	TCP/IP Service Name
DFHSOCK	A	246	PORTNUM	PORT	PORT	–	•	•	•	•	•	TCP/IP Port Number
DFHSOCK	A	288	ISALLOCT	ISALLOC	ISALLOC	–	–	–	–	–	•	Allocate Session requests for sessions on IP
DFHSOCK	A	289	SOEXTRCT	Same	SOEXTRAC	–	•	•	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
DFHSOCK	A	290	SOCNPSCT	Same	SOCNPSRq	–	•	•	•	•	•	Create Non-Persistent Outbound Socket reqs
DFHSOCK	A	291	SOCPSCT	Same	SOCPSReq	–	•	•	•	•	•	Create Persistent Outbound Socket requests
DFHSOCK	A	292	SONPSHWM	Same	SONPSHWM	–	•	•	•	•	•	Non-Persistent Outbound Socket HWM
DFHSOCK	A	293	SOPSHWM	Same	SOPSHWM	–	•	•	•	•	•	Persistent Outbound Socket HWM
DFHSOCK	A	294	SORCVCT	SORCV	SO Recv	–	•	•	•	•	•	Outbound Sockets RECEIVE requests
DFHSOCK	A	295	SOCHRIN	Same	SOChrIn	–	•	•	•	•	•	Outbound Sockets characters received count
DFHSOCK	A	296	SOSENDCT	SOSEND	SO SEND	–	•	•	•	•	•	Outbound Sockets SEND requests
DFHSOCK	A	297	SOCHROUT	Same	SOChrOut	–	•	•	•	•	•	Outbound Sockets characters sent count
DFHSOCK	A	298	SOTOTCT	SOTOTAL	SOTotal	–	•	•	•	•	•	Socket Total requests
DFHSOCK	S	299	SOOIOWTT	OSOWAIT	OSO Wait	–	•	•	•	•	•	Outbound Socket I/O Wait Time
DFHSOCK	S	300	ISIOWTT	ISWAIT	IS Wait	–	–	–	–	–	•	IPCONN link wait time
DFHSOCK	A	301	SOMSGIN1	Same	SOMsgIn1	–	–	•	•	•	•	Inbound Sockets RECEIVE requests
DFHSOCK	A	302	SOCHRIN1	Same	SOChrIn1	–	–	•	•	•	•	Inbound Sockets characters received count
DFHSOCK	A	303	SOMSGOU1	Same	SOMsgOu1	–	–	•	•	•	•	Inbound Sockets SEND requests
DFHSOCK	A	304	SOCHROU1	Same	SOChrOu1	–	–	•	•	•	•	Inbound Sockets characters sent count
DFHSOCK	C	305	ISIPCNNM	ISIPICNM	ISIPICNM	–	–	–	–	–	•	Name of IPCONN definition that attached the task
DFHSOCK	A	330	CLIPPORT	Same	CLIPPORT	–	–	–	–	–	•	Client IP Port Number

Cross-reference: CMF Field ID × CICS version

Table 16. Cross-reference: CMF field ID × CICS version (continued)

Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHSTOR	A	033	SCUSRHWM	SC24UHWM	SC24UHWM	•	•	•	•	•	•	UDSA HWM below 16MB
DFHSTOR	A	054	SCUGETCT	SC24UGET	SC24UGet	•	•	•	•	•	•	UDSA GETMAINs below 16MB
DFHSTOR	A	087	PCSTGHWM	Same	PCStgHWM	•	•	•	•	•	•	Program Storage HWM above and below 16MB
DFHSTOR	A	095	SCUSRSTG	SC24UOCC	SC24UOcc	•	•	•	•	•	•	UDSA Storage Occupancy below 16MB
DFHSTOR	A	105	SCUGETCT	SC31UGET	SC31UGet	•	•	•	•	•	•	EUDSA GETMAINs above 16MB
DFHSTOR	A	106	SCUSRHWM	SC31UHWM	SC31UHWM	•	•	•	•	•	•	EUDSA HWM above 16MB
DFHSTOR	A	107	SCUCRSTG	SC31UOCC	SC31UOcc	•	•	•	•	•	•	EUDSA Storage Occupancy above 16MB
DFHSTOR	A	108	PC24BHWM	Same	PC24bHWM	•	•	•	•	•	•	Program Storage HWM below 16MB
DFHSTOR	A	116	SC24CHWM	Same	SC24CHWM	•	•	•	•	•	•	CDSA HWM below 16MB
DFHSTOR	A	117	SCCGETCT	SC24CGET	SC24CGet	•	•	•	•	•	•	CDSA GETMAINs below 16MB
DFHSTOR	A	118	SC24COCC	Same	SC24COcc	•	•	•	•	•	•	CDSA Storage Occupancy below 16MB
DFHSTOR	A	119	SC31CHWM	Same	SC31CHWM	•	•	•	•	•	•	ECDSA HWM above 16MB
DFHSTOR	A	120	SCCGETCT	SC31CGET	SC31CGet	•	•	•	•	•	•	ECDSA GETMAINs above 16MB
DFHSTOR	A	121	SC31COCC	Same	SC31COcc	•	•	•	•	•	•	ECDSA Storage Occupancy above 16MB
DFHSTOR	A	122	PC31RHWM	Same	PC31RHWM	•	•	•	•	•	•	Program Storage (ERDSA) HWM above 16MB
DFHSTOR	A	139	PC31AHWM	Same	PC31aHWM	•	•	•	•	•	•	Program Storage HWM above 16MB
DFHSTOR	A	142	PC31CHWM	Same	PC31CHWM	•	•	•	•	•	•	Program Storage (ECDSA) HWM above 16MB
DFHSTOR	A	143	PC24CHWM	Same	PC24CHWM	•	•	•	•	•	•	Program Storage (CDSA) HWM below 16MB
DFHSTOR	A	144	SC24SGCT	SC24SGET	SC24SGet	•	•	•	•	•	•	CDSA/SDSA GETMAINs below 16MB
DFHSTOR	A	145	SC24GSHR	Same	SC24GShr	•	•	•	•	•	•	CDSA/SDSA storage GETMAINed below 16MB
DFHSTOR	A	146	SC24FSHR	Same	SC24FShr	•	•	•	•	•	•	CDSA/SDSA storage FREEMAINed below 16MB
DFHSTOR	A	147	SC31SGCT	SC31SGET	SC31SGet	•	•	•	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
DFHSTOR	A	148	SC31GSHR	Same	SC31GShr	•	•	•	•	•	•	ECDSA/ESDSA storage GETMAINed above 16MB
DFHSTOR	A	149	SC31FSHR	Same	SC31FShr	•	•	•	•	•	•	ECDSA/ESDSA storage FREEMAINed above 16MB
DFHSTOR	A	160	PC24SHWM	Same	PC24SHWM	•	•	•	•	•	•	Program Storage (SDSA) HWM below 16MB
DFHSTOR	A	161	PC31SHWM	Same	PC31SHWM	•	•	•	•	•	•	Program Storage (ESDSA) HWM above 16MB
DFHSTOR	A	162	PC24RHWM	Same	PC24RHWM	•	•	•	•	•	•	Program Storage (RDSA) HWM below 16MB
DFHSYNC	A	060	SPSYNCCT	SYNCPT	SYNCPT	•	•	•	•	•	•	SYNCPOINT requests
DFHSYNC	S	173	SYNCTIME	Same	SYNCProc	•	•	•	•	•	•	SYNCPOINT processing time
DFHSYNC	S	177	SRVSYWTT	CFDTSYNC	CFDTSync	•	•	•	•	•	•	CF Data Table syncpoint wait time
DFHSYNC	S	196	SYNCDLY	Same	SYNC Dly	•	•	•	•	•	•	SYNCPOINT parent request wait time
DFHSYNC	S	199	OTSINDWT	Same	OTSIndWt	–	•	•	•	•	•	OTS Indoubt Wait time
DFHTASK	C	001	TRAN	Same	Tran	•	•	•	•	•	•	Transaction identifier
DFHTASK	C	004	TTYPE	STYPE	SC	•	•	•	•	•	•	Transaction start type
DFHTASK	S	007	USRDISPT	DISPATCH	Dispatch	•	•	•	•	•	•	Dispatch time
DFHTASK	S	008	USRCPUT	CPU	User CPU	•	•	•	•	•	•	CPU time
DFHTASK	S	014	SUSPTIME	SUSPEND	Suspend	•	•	•	•	•	•	Suspend time
DFHTASK	P	031	TRANNUM	TASKNO	TaskNo	•	•	•	•	•	•	Transaction identification number
DFHTASK	A	059	ICPUINCT	ICPUT	ICSTART	•	•	•	•	•	•	Interval Control START or INITIATE requests
DFHTASK	A	064	TASKFLAG	ERRFLAGS	Err Flag	•	•	•	•	•	•	Task error flags
DFHTASK	C	064	TASKFLAG	None	Err Flag	•	•	•	•	•	•	Task error flags
DFHTASK	A	065	ICSTACCT	Same	ICSTACCT	–	–	–	–	•	•	Local IC START requests with CHANNEL option
DFHTASK	A	066	ICTOTCT	ICTOTAL	IC Total	•	•	•	•	•	•	Interval Control requests
DFHTASK	C	082	TRNGRPID	None	Group ID	•	•	•	•	•	•	Transaction Group ID
DFHTASK	C	097	NETUOWPX	NETNAME	NETName	•	•	•	•	•	•	Originating System VTAM network name
DFHTASK	C	098	NETUOWSX	Same	NETUOWID	•	•	•	•	•	•	Network UOW ID
DFHTASK	S	102	DISPWTT	DISPWAIT	DispWait	•	•	•	•	•	•	Redispatch wait time
DFHTASK	A	109	TRANPRI	TRANPRTY	Prty	•	•	•	•	•	•	Transaction priority
DFHTASK	S	123	GNQDELAY	Same	GNQDelay	•	•	•	•	•	•	Global Enqueue wait time
DFHTASK	C	124	BRDGTRAN	Same	Brdg	•	•	•	•	•	•	Bridge Listener Transaction ID
DFHTASK	S	125	DSPDELAY	Same	Disp1Dly	•	•	•	•	•	•	First dispatch wait time

Table 16. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHTASK	S	126	TCLDELAY	Same	TCLDelay	•	•	•	•	•	•	First dispatch TCLSNAME wait time
DFHTASK	S	127	MXTDELAY	Same	MXTDelay	•	•	•	•	•	•	First dispatch MXT wait time
DFHTASK	S	128	LMDELAY	LOCKDLAY	LM Delay	•	•	•	•	•	•	Lock Manager (LM) wait time
DFHTASK	S	129	ENQDELAY	Same	ENQDelay	•	•	•	•	•	•	Local Enqueue wait time
DFHTASK	C	132	RMUOWID	None	RM UOWID	•	•	•	•	•	•	Recovery UOW ID
DFHTASK	C	163	FCTYNAME	FCTY	Fcty	•	•	•	•	•	•	Transaction Facility name
DFHTASK	A	164	TRANFLAG	Same	TranFlag	•	•	•	•	•	•	Transaction flags
DFHTASK	A	164	TRANFLAG	FCTYTYPE	FctyType	•	•	•	•	•	•	Transaction facility type
DFHTASK	C	164	TRANFLAG	ORIGIN	Origin	•	•	•	•	•	•	Transaction origin type
DFHTASK	C	164	TRANFLAG	TRANTYPE	TranType	•	•	•	•	•	•	Transaction type
DFHTASK	C	166	TCLSNAME	TCLASSNM	TCLSName	•	•	•	•	•	•	Transaction Class name
DFHTASK	S	170	RMITIME	Same	RMI Elap	•	•	•	•	•	•	Resource Manager Interface (RMI) elapsed time
DFHTASK	S	171	RMISUSP	Same	RMI Susp	•	•	•	•	•	•	Resource Manager Interface (RMI) suspend time
DFHTASK	S	181	WTEXWAIT	WAITEXT	Ext Wait	•	•	•	•	•	•	External ECB wait time
DFHTASK	S	182	WTCEWAIT	WAITEVENT	CICSWait	•	•	•	•	•	•	CICS ECB wait time
DFHTASK	S	183	ICDELAY	Same	IC Delay	•	•	•	•	•	•	Interval Control (IC) wait time
DFHTASK	S	184	GVUPWAIT	GIVEUPWT	GiveUpWt	•	•	•	•	•	•	Give up control wait time
DFHTASK	C	190	RRMSURID	None	RRMSURID	•	•	•	•	•	•	RRMS/MVS unit-of-recovery ID (URID)
DFHTASK	S	191	RRMSWAIT	Same	RRMSWait	•	•	•	•	•	•	Resource Recovery Services indoubt wait time
DFHTASK	S	192	RQRWAIT	Same	RQR Wait	–	•	•	•	•	•	Request Receiver Wait Time
DFHTASK	S	193	RQPWAIT	Same	RQP Wait	–	•	•	•	•	•	Request Processor Wait Time
DFHTASK	C	194	OTSTID	OTSID	OTS ID	–	•	•	•	•	•	OTS Transaction ID
DFHTASK	S	195	RUNTRWTT	Same	BTSRunWt	•	•	•	•	•	•	BTS run Process/Activity wait time
DFHTASK	S	247	DSCHMDLY	Same	DSCHMDLY	–	–	–	–	•	•	Redispatch wait time caused by change-TCB mode
DFHTASK	A	248	CHMODECT	Same	ChngMode	•	•	•	•	–	–	Change-TCB modes requests
DFHTASK	S	249	QRMODDLY	Same	QRModDly	•	•	•	•	•	•	CICS QR TCB redispatch wait time
DFHTASK	S	250	MXTOTDLY	MAXOTDLY	MaxOTDly	•	•	•	•	•	•	Maximum Open TCB delay time
DFHTASK	A	251	TCBATTCT	Same	TCBAtach	•	•	•	•	•	•	TCBs attached count
DFHTASK	A	252	DSTCBHWM	Same	DSTCBHWM	–	–	–	•	•	•	CICS Dispatcher TCB HWM
DFHTASK	S	253	JVMTIME	Same	JVM Elap	•	•	•	•	•	•	JVM elapsed time
DFHTASK	S	254	JVMSUSP	Same	JVM Susp	•	•	•	•	•	•	JVM suspend time
DFHTASK	S	255	QRDISPT	Same	QR Disp	•	•	•	•	•	•	CICS QR TCB dispatch time
DFHTASK	S	256	QRCPUT	QRCPU	QR CPU	•	•	•	•	•	•	CICS QR TCB CPU time
DFHTASK	S	257	MSDISPT	Same	MS Disp	•	•	•	•	•	•	CICS TCBs dispatch time
DFHTASK	S	258	MSCPUT	MSCPU	MS CPU	•	•	•	•	•	•	CICS TCBs CPU time
DFHTASK	S	259	L8CPUT	L8CPU	L8 CPU	•	•	•	•	•	•	CICS L8 TCB CPU time
DFHTASK	S	260	J8CPUT	J8CPU	J8 CPU	•	•	•	•	•	•	CICS J8 TCB CPU time
DFHTASK	S	261	S8CPUT	S8CPU	S8 CPU	•	•	•	•	•	•	CICS S8 TCB CPU time
DFHTASK	S	262	KY8DISPT	Same	KY8 Disp	–	•	•	•	•	•	CICS Key 8 TCB dispatch time
DFHTASK	S	263	KY8CPUT	KY8CPU	KY8 CPU	–	•	•	•	•	•	CICS Key 8 TCB CPU time
DFHTASK	S	264	KY9DISPT	Same	KY9 Disp	–	–	–	•	•	•	User task Key 9 Mode Dispatch time
DFHTASK	S	265	KY9CPUT	KY9CPU	KY9 CPU	–	–	–	•	•	•	User task Key 9 Mode CPU time
DFHTASK	S	266	L9CPUT	L9CPU	L9 CPU	–	–	–	–	•	•	User task L9 CPU time
DFHTASK	S	267	J9CPUT	J9CPU	J9 CPU	–	–	–	•	•	•	User task J9 Mode CPU time
DFHTASK	S	268	DSTCBMWT	Same	DSTCBMWT	–	–	–	•	•	•	Dispatcher TCB Mismatch wait time
DFHTASK	S	269	RODISPT	Same	RO Disp	–	–	•	•	•	•	CICS RO TCB dispatch time
DFHTASK	S	270	ROCPUT	ROCPU	RO CPU	–	–	•	•	•	•	CICS RO TCB CPU time
DFHTASK	S	271	X8CPUT	X8CPU	X8 CPU	–	–	–	–	•	•	CICS X8 TCB CPU time
DFHTASK	S	272	X9CPUT	X9CPU	X9 CPU	–	–	–	–	•	•	User task X9 Mode CPU time
DFHTASK	S	273	JVMITIME	Same	JVMITime	–	•	•	•	•	•	JVM initialize elapsed time
DFHTASK	S	275	JVMRTIME	Same	JVMRTime	–	•	•	•	•	•	JVM reset elapsed time
DFHTASK	S	277	MAXJTDLY	Same	MaxJTDly	–	–	•	•	•	•	Maximum JVM TCB delay time
DFHTASK	S	278	MAXHTDLY	Same	MaxHTDly	–	–	•	•	–	–	Maximum Hot-Pooling TCB delay time
DFHTASK	S	279	DSMMSCWT	Same	DS Wait	–	–	–	•	•	•	DS storage constraint wait time

Cross-reference: CMF Field ID × CICS version

Table 16. Cross-reference: CMF field ID × CICS version (continued)

CMF field				CICS PA field name	Column heading	530	610	620	630	640	650	
Group	**Type**	**ID**	**Name**									**Description**
DFHTASK	S	281	MAXSTDLY	Same	MAXSTDLY	–	–	–	–	•	•	Maximum SSL TCB delay time
DFHTASK	S	282	MAXXTDLY	Same	MAXXTDLY	–	–	–	–	•	•	Maximum XPLink TCB delay time
DFHTASK	S	285	PTPWAIT	Same	PTP Wait	–	–	•	•	•	•	3270 Bridge Partner wait time
DFHTASK	A	345	ICSTACDL	Same	ICSTACDL	–	–	–	–	•	•	Container data len for Local IC START w/ CHANNEL
DFHTASK	A	346	ICSTRCCT	Same	ICSTRCCT	–	–	–	–	•	•	Remote IC START requests with CHANNEL option
DFHTASK	A	347	ICSTRCDL	Same	ICSTRCDL	–	–	–	–	•	•	Container data len for Remot IC START w/ CHANNEL
DFHTEMP	S	011	TSIOWTT	TSWAIT	TS Wait	•	•	•	•	•	•	VSAM TS I/O wait time
DFHTEMP	A	044	TSGETCT	TSGET	TSGET	•	•	•	•	•	•	Temporary Storage GET requests
DFHTEMP	A	046	TSPUTACT	TSPUTAUX	TSPUTAux	•	•	•	•	•	•	Auxiliary TS PUT requests
DFHTEMP	A	047	TSPUTMCT	Same	TSPUTMai	•	•	•	•	•	•	Main TS PUT requests
DFHTEMP	A	092	TSTOTCT	TSTOTAL	TS Total	•	•	•	•	•	•	TS Total requests
DFHTEMP	S	178	TSSHWAIT	Same	TSShWait	•	•	•	•	•	•	Asynchronous Shared TS wait time
DFHTERM	C	002	TERM	Same	Term	•	•	•	•	•	•	Terminal ID
DFHTERM	S	009	TCIOWTT	TCWAIT	TC Wait	•	•	•	•	•	•	Terminal wait for input time
DFHTERM	A	034	TCMSGIN1	MSGIN1	MsgIn1	•	•	•	•	•	•	Messages received count
DFHTERM	A	035	TCMSGOU1	MSGOUT1	MsgOut1	•	•	•	•	•	•	Messages sent count
DFHTERM	A	067	TCMSGIN2	MSGIN2	MsgIn2	•	•	•	•	•	•	Messages received from LU6.1
DFHTERM	A	068	TCMSGOU2	MSGOUT2	MsgOut2	•	•	•	•	•	•	Messages sent to LU6.1
DFHTERM	A	069	TCALLOCT	TCALLOC	TCALLOC	•	•	•	•	•	•	TCTTE ALLOCATE requests
DFHTERM	A	083	TCCHRIN1	CHARIN1	CharIn1	•	•	•	•	•	•	Terminal characters received count
DFHTERM	A	084	TCCHROU1	CHAROUT1	CharOut1	•	•	•	•	•	•	Terminal characters sent count
DFHTERM	A	085	TCCHRIN2	CHARIN2	CharIn2	•	•	•	•	•	•	LU6.1 characters received count
DFHTERM	A	086	TCCHROU2	CHAROUT2	CharOut2	•	•	•	•	•	•	LU6.1 characters sent count
DFHTERM	S	100	IRIOWTT	IRWAIT	IR Wait	•	•	•	•	•	•	MRO link wait time
DFHTERM	C	111	LUNAME	Same	LUName	•	•	•	•	•	•	VTAM logical unit name
DFHTERM	S	133	LU61WTT	LU61WAIT	LU61Wait	•	•	•	•	•	•	LU6.1 wait time
DFHTERM	S	134	LU62WTT	LU62WAIT	LU62Wait	•	•	•	•	•	•	LU6.2 wait time
DFHTERM	A	135	TCM62IN2	Same	TCM62In2	•	•	•	•	•	•	LU6.2 messages received count
DFHTERM	A	136	TCM62OU2	Same	TCM62Ou2	•	•	•	•	•	•	LU6.2 messages sent count
DFHTERM	A	137	TCC62IN2	Same	TCC62In2	•	•	•	•	•	•	LU6.2 characters received count
DFHTERM	A	138	TCC62OU2	Same	TCC62Ou2	•	•	•	•	•	•	LU6.2 characters sent count
DFHTERM	A	165	TERMINFO	Same	TermInfo	•	•	•	•	•	•	Terminal information
DFHTERM	A	165	TERMINFO	ACCMETH	Acc Meth	•	•	•	•	•	•	Terminal Access Method
DFHTERM	A	165	TERMINFO	TERMCODE	DevT	•	•	•	•	•	•	Terminal Device Type
DFHTERM	A	165	TERMINFO	NATURE	Nature	•	•	•	•	•	•	Transaction
DFHTERM	A	165	TERMINFO	SESSTYPE	SessType	•	•	•	•	•	•	Terminal session type
DFHTERM	C	169	TERMCNNM	Same	ConnName	•	•	•	•	•	•	Terminal session Connection name
DFHTERM	C	197	NETID	Same	NET ID	–	•	•	•	•	•	VTAM LUALIAS Network ID
DFHTERM	C	198	RLUNAME	Same	RLUNAME	–	•	•	•	•	•	VTAM LUALIAS Logical Unit name
DFHWEBB	A	224	WBREADCT	WBREAD	WB READ	–	•	•	•	•	•	Web READ requests
DFHWEBB	A	225	WBWRITCT	WBWRITE	WB WRITE	–	•	•	•	•	•	Web WRITE requests
DFHWEBB	A	231	WBRCVCT	WBRCV	WBRCV	•	•	•	•	•	•	Web RECEIVE requests
DFHWEBB	A	232	WBCHRIN	Same	WBChrIn	•	•	•	•	•	•	Web characters received count
DFHWEBB	A	233	WBSENDCT	WBSEND	WBSEND	•	•	•	•	•	•	Web SEND requests
DFHWEBB	A	234	WBCHROUT	Same	WBChrOut	•	•	•	•	•	•	Web characters sent count
DFHWEBB	A	235	WBTOTWCT	WBTOTAL	WB Total	•	•	•	•	•	•	Web Total requests
DFHWEBB	A	236	WBREPRCT	Same	WBRepoRd	•	•	•	•	•	•	Web Temporary Storage Repository read requests
DFHWEBB	A	237	WBREPWCT	Same	WBRepoWr	•	•	•	•	•	•	Web Temporary Storage Repository write requests
DFHWEBB	A	238	WBEXTRCT	Same	WBEXTRAC	–	•	•	•	•	•	Web EXTRACT requests
DFHWEBB	A	239	WBBRWCT	WBBROWSE	WBBROWSE	–	•	•	•	•	•	Web Browse requests

Table 16. Cross-reference: CMF field ID × CICS version (continued)

CMF field				CICS PA field name	Column heading	530	610	620	630	640	650	Description
Group	Type	ID	Name									
DFHWEBB	A	331	WBREDOCT	Same	WBREDOCT	–	–	–	–	•	•	CICS Web Support READ HTTPHEADER requests
DFHWEBB	A	332	WBWRTOCT	Same	WBWRTOCT	–	–	–	–	•	•	CICS Web Support WRITE HTTPHEADER requests
DFHWEBB	A	333	WBRCVIN1	Same	WBRCVIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE requests
DFHWEBB	A	334	WBCHRIN1	Same	WBCHRIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE chars
DFHWEBB	A	335	WBSNDOU1	Same	WBSNDOU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE requests
DFHWEBB	A	336	WBCHROU1	Same	WBCHROU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE chars
DFHWEBB	A	337	WBPARSCT	Same	WBPARSCT	–	–	–	–	•	•	CICS Web Support PARSE URL requests
DFHWEBB	A	338	WBBRWOCT	Same	WBBRWOCT	–	–	–	–	•	•	CICS Web Support BROWSE HTTPHEADER requests
DFHWEBB	A	340	WBIWBSCT	Same	WBIWBSCT	–	–	–	–	•	•	CICS INVOKE WEBSERVICE requests
DFHWEBB	A	341	WBREPRDL	Same	WBREPRDL	–	–	–	–	•	•	Repository Read data length
DFHWEBB	A	342	WBREPWDL	Same	WBREPWDL	–	–	–	–	•	•	Repository Write data length
OMCICS	C	001	DB2WARN	Same	DB2WARN	•	•	•	•	•	•	OMEGAMON DB2 Limit Warning
OMCICS	C	002	DLIWARN	Same	DLIWARN	•	•	•	•	•	•	OMEGAMON DLI Limit Warning
OMCICS	C	003	VSAMWARN	Same	VSAMWARN	•	•	•	•	•	•	OMEGAMON VSAM Limit warning
OMCICS	C	004	MQWARN	Same	MQWARN	•	•	•	•	•	•	OMEGAMON MQ Limit Warning
OMCICS	C	005	ADABWARN	Same	ADABWARN	•	•	•	•	•	•	OMEGAMON Adabas Limit Warning
OMCICS	C	006	IDMSWARN	Same	IDMSWARN	•	•	•	•	•	•	OMEGAMON CA-IDMS Limit Warning
OMCICS	C	007	SUPRWARN	Same	SUPRWARN	•	•	•	•	•	•	OMEGAMON Supra Limit Warning
OMCICS	C	008	DCOMWARN	Same	DCOMWARN	•	•	•	•	•	•	OMEGAMON CA-Datacom Limit Warning
OMCICS	C	009	CPUWARN	Same	CPUWARN	•	•	•	•	•	•	OMEGAMON CPU Limit Warning
OMCICS	C	010	ELAPWARN	Same	ELAPWARN	•	•	•	•	•	•	OMEGAMON Elapsed Time Limit Warning
OMCICS	C	011	DSAWARN	Same	DSAWARN	•	•	•	•	•	•	OMEGAMON DSA Limit Warning
OMCICS	C	012	EDSAWARN	Same	EDSAWARN	•	•	•	•	•	•	OMEGAMON EDSA Limit Warning
OMCICS	C	013	CALLWARN	Same	CALLWARN	•	•	•	•	•	•	OMEGAMON EXEC Calls Limit Warning
OMCICS	C	014	UE1WARN	Same	UE1WARN	•	•	•	•	•	•	OMEGAMON User Event Limit Warning
OMCICS	C	015	OMEGWORK	Same	OMEGWORK	•	•	•	•	•	•	OMEGAMON User work area
OMCICS	S	016	IDMSREQ	Same	IDMSREQ	•	•	•	•	•	•	OMEGAMON monitored CA-IDMS requests
OMCICS	S	017	ADABREQ	Same	ADABREQ	•	•	•	•	•	•	OMEGAMON monitored Adabas requests
OMCICS	S	018	SUPRREQ	Same	SUPRREQ	•	•	•	•	•	•	OMEGAMON monitored Supra requests
OMCICS	S	019	DCOMREQ	Same	DCOMREQ	•	•	•	•	•	•	OMEGAMON monitored CA-Datacom requests
OMCICS	S	020	USREVNT	Same	USREVNT	•	•	•	•	•	•	OMEGAMON User defined events

Cross-reference: CMF Field ID × CICS version

Chapter 24. CICS PA field name × CICS version

The following cross-reference table relates the CICS PA names for CICS monitoring facility (CMF) performance class and transaction resource class data fields to the corresponding CMF field IDs and the CICS versions to which they apply.

Some columns in the table require explanation:

CICS PA field name
> The name used in report forms, HDB templates, and selection criteria (and their corresponding batch command operands FIELDS and SELECT).

> A blank indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

Column heading
> The heading used to identify the field in CICS PA reports and extract data sets.

CICS version
> The CICS versions to which a field applies:
> - Yes, the field applies to this CICS version
> – No, the field does not apply to this CICS version

The table is sorted by CICS PA field name.

Notes:

1. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of "CICSPA". These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).
2. The FILENAME and TSQNAME fields are only available when CMF transaction resource class data is being collected.
3. The APPLTRAN and APPLPROG fields are only available when application programs invoke the application naming event monitoring points.

Table 17. Cross-reference: CICS PA field name × CICS version

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	530	610	620	630	640	650	Description
	BTS Root	DFHCBTS	C	202	PRCSID	•	•	•	•	•	•	BTS Root Activity identifier
	BTSActID	DFHCBTS	C	203	ACTVTYID	•	•	•	•	•	•	BTS Activity identifier
	Err Flag	DFHTASK	C	064	TASKFLAG	•	•	•	•	•	•	Task error flags
	Group ID	DFHTASK	C	082	TRNGRPID	•	•	•	•	•	•	Transaction Group ID
	RM UOWID	DFHTASK	C	132	RMUOWID	•	•	•	•	•	•	Recovery UOW ID
	RRMSURID	DFHTASK	C	190	RRMSURID	•	•	•	•	•	•	RRMS/MVS unit-of-recovery ID (URID)
ABCODEC	ABcu	DFHPROG	C	114	ABCODEC	•	•	•	•	•	•	Current ABEND code
ABCODEO	ABor	DFHPROG	C	113	ABCODEO	•	•	•	•	•	•	Original ABEND Code
ACCMETH	Acc Meth	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal Access Method
ACTVTYNM	BTSActNm	DFHCBTS	C	204	ACTVTYNM	•	•	•	•	•	•	BTS Activity name
ADABREQ	ADABREQ	OMCICS	S	017	ADABREQ	•	•	•	•	•	•	OMEGAMON monitored Adabas requests
ADABWARN	ADABWARN	OMCICS	C	005	ADABWARN	•	•	•	•	•	•	OMEGAMON Adabas Limit Warning
APPLID	APPLID	CICSPA	C	903	APPLID	•	•	•	•	•	•	CICS Generic APPLID
APPLPROG	Program	DFHAPPL	C	001	APPLNAME	•	–	•	•	•	•	Application naming Program
APPLRECS	APPLRecs	CICSPA	A	002	APPLRECS	•	•	•	•	•	•	Cross-System Application records
APPLTRAN	Tran	DFHAPPL	C	001	APPLNAME	•	–	•	•	•	•	Application naming Tran ID
BAACDCCT	BTSADCRq	DFHCBTS	A	217	BAACDCCT	•	•	•	•	•	•	BTS Activity Data Containers requests

Cross-reference: CICS PA field name × CICS version

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	530	610	620	630	640	650	Description
BAACQPCT	BTSAcqui	DFHCBTS	A	214	BAACQPCT	•	•	•	•	•	•	BTS Acquire Process/Activity requests
BADACTCT	BTS DefA	DFHCBTS	A	209	BADACTCT	•	•	•	•	•	•	BTS Define Activity requests
BADCPACT	BTSCancl	DFHCBTS	A	213	BADCPACT	•	•	•	•	•	•	BTS Cancel Process/Activity requests
BADFIECT	BTSDefEv	DFHCBTS	A	220	BADFIECT	•	•	•	•	•	•	BTS Define-Input Event requests
BADPROCT	BTS DefP	DFHCBTS	A	208	BADPROCT	•	•	•	•	•	•	BTS Define Process requests
BALKPACT	BTS Link	DFHCBTS	A	207	BALKPACT	•	•	•	•	•	•	BTS Link Process/Activity count
BAPRDCCT	BTSPDCRq	DFHCBTS	A	216	BAPRDCCT	•	•	•	•	•	•	BTS Process Data Containers requests
BARASYCT	BTS Asyn	DFHCBTS	A	206	BARASYCT	•	•	•	•	•	•	BTS asynchronous Process/Activity count
BARATECT	BTSRtvEv	DFHCBTS	A	219	BARATECT	•	•	•	•	•	•	BTS Retrieve-Reattach Event requests
BARMPACT	BTSResum	DFHCBTS	A	212	BARMPACT	•	•	•	•	•	•	BTS Resume Process/Activity requests
BARSPACT	BTSReset	DFHCBTS	A	210	BARSPACT	•	•	•	•	•	•	BTS Reset Process/Activity requests
BARSYNCT	BTS Sync	DFHCBTS	A	205	BARSYNCT	•	•	•	•	•	•	BTS synchronous Process/Activity count
BASUPACT	BTS Susp	DFHCBTS	A	211	BASUPACT	•	•	•	•	•	•	BTS Suspend Process/Activity requests
BATIAECT	BTSTimEv	DFHCBTS	A	221	BATIAECT	•	•	•	•	•	•	BTS TIMER Event requests
BATOTCCT	BTSTDCRq	DFHCBTS	A	218	BATOTCCT	•	•	•	•	•	•	BTS Process/Activity Data Container requests
BATOTECT	BTSTotEv	DFHCBTS	A	222	BATOTECT	•	•	•	•	•	•	BTS Event-related requests
BATOTPCT	BTSTotal	DFHCBTS	A	215	BATOTPCT	•	•	•	•	•	•	BTS Total Process/Activity requests
BMSIN	BMSIN	DFHMAPP	A	051	BMSINCT	•	•	•	•	•	•	BMS IN requests
BMSMAP	BMSMAP	DFHMAPP	A	050	BMSMAPCT	•	•	•	•	•	•	BMS MAP requests
BMSOUT	BMSOUT	DFHMAPP	A	052	BMSOUTCT	•	•	•	•	•	•	BMS OUT requests
BMSTOTAL	BMSTotal	DFHMAPP	A	090	BMSTOTCT	•	•	•	•	•	•	BMS Total requests
BRDGTRAN	Brdg	DFHTASK	C	124	BRDGTRAN	•	•	•	•	•	•	Bridge Listener Transaction ID
CALLWARN	CALLWARN	OMCICS	C	013	CALLWARN	•	•	•	•	•	•	OMEGAMON EXEC Calls Limit Warning
CBSRVRNM	Corb	DFHEJBS	C	311	CBSRVRNM	–	–	–	•	•	•	CorbaServer name
CFCAPICT	CFClsAPI	DFHCICS	A	025	CFCAPICT	•	•	•	•	•	•	OO Foundation Class requests
CFDTSYNC	CFDTSync	DFHSYNC	S	177	SRVSYWTT	•	•	•	•	•	•	CF Data Table syncpoint wait time
CFDTWAIT	CFDTWait	DFHFILE	S	176	CFDTWAIT	•	•	•	•	•	•	CF Data Table access requests wait time
CHARIN1	CharIn1	DFHTERM	A	083	TCCHRIN1	•	•	•	•	•	•	Terminal characters received count
CHARIN2	CharIn2	DFHTERM	A	085	TCCHRIN2	•	•	•	•	•	•	LU6.1 characters received count
CHAROUT1	CharOut1	DFHTERM	A	084	TCCHROU1	•	•	•	•	•	•	Terminal characters sent count
CHAROUT2	CharOut2	DFHTERM	A	086	TCCHROU2	•	•	•	•	•	•	LU6.1 characters sent count
CHMODECT	ChngMode	DFHTASK	A	248	CHMODECT	•	•	•	•	–	–	Change-TCB modes requests
CLIENTIP	ClientIP	DFHSOCK	C	244	CLIPADDR	•	•	•	•	•	•	Client IP or Telnet client IP address
CLIPPORT	CLIPPORT	DFHSOCK	A	330	CLIPPORT	–	–	–	–	–	•	Client IP Port Number
COMMWAIT	CommWait	CICSPA	D	906	COMMWAIT	•	•	•	•	•	•	Communications wait time
CPU	User CPU	DFHTASK	S	008	USRCPUT	•	•	•	•	•	•	CPU time
CPUWARN	CPUWARN	OMCICS	C	009	CPUWARN	•	•	•	•	•	•	OMEGAMON CPU Limit Warning
DB2CONWT	DB2ConWt	DFHDATA	S	188	DB2CONWT	•	•	•	•	•	•	DB2 Connection wait time
DB2RDYQW	DB2ThdWt	DFHDATA	S	187	DB2RDYQW	•	•	•	•	•	•	DB2 Thread wait time
DB2REQCT	DB2 Reqs	DFHDATA	A	180	DB2REQCT	•	•	•	•	•	•	DB2 requests
DB2WAIT	DB2SQLWt	DFHDATA	S	189	DB2WAIT	•	•	•	•	•	•	DB2 SQL/IFI wait time
DB2WARN	DB2WARN	OMCICS	C	001	DB2WARN	•	•	•	•	•	•	OMEGAMON DB2 Limit Warning
DBGETS	DBget	DBCTL	A	035	DBGETS	•	•	•	•	•	•	Number of Database Get calls issued
DBIOCALL	DBIOCall	DBCTL	A	007	DBIOCALL	•	•	•	•	•	•	Number of Database I/Os
DBIOELAP	DBIOElap	DBCTL	A	005	DBIOELAP	•	•	•	•	•	•	Elapsed time for Database I/O
DBUPDATE	DBupdate	DBCTL	A	036	DBUPDATE	•	•	•	•	•	•	Number of Database Update calls issued
DBWAITS	DBwait	DBCTL	A	037	DBWAITS	•	•	•	•	•	•	Number of Database waits
DCOMREQ	DCOMREQ	OMCICS	S	019	DCOMREQ	•	•	•	•	•	•	OMEGAMON monitored CA-Datacom requests
DCOMWARN	DCOMWARN	OMCICS	C	008	DCOMWARN	•	•	•	•	•	•	OMEGAMON CA-Datacom Limit Warning
DEDBBFRW	DEDBBfrW	DBCTL	A	031	DEDBBFRW	•	•	•	•	•	•	Number of waits for DEDB buffers
DEDBCALL	DEDBcall	DBCTL	A	027	DEDBCALL	•	•	•	•	•	•	Number of DEDB calls
DEDBRDOP	DEDBRdOp	DBCTL	A	028	DEDBRDOP	•	•	•	•	•	•	Number of DEDB read operations
DHCREATE	DHCREATE	DFHDOCH	A	226	DHCRECT	•	•	•	•	•	•	Document Handler CREATE requests
DHDELETE	DHDELETE	DFHDOCH	A	223	DHDELCT	–	–	–	–	–	•	Document Handler DELETE requests
DHINSERT	DHINSERT	DFHDOCH	A	227	DHINSCT	•	•	•	•	•	•	Document Handler INSERT requests
DHRETRVE	DHRETRVE	DFHDOCH	A	229	DHRETCT	•	•	•	•	•	•	Document Handler RETRIEVE requests
DHSET	DHSET	DFHDOCH	A	228	DHSETCT	•	•	•	•	•	•	Document Handler SET requests

Table 17. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	Group	Type	ID	Name	530	610	620	630	640	650	Description
DHTOTAL	DH Total	DFHDOCH	A	230	DHTOTCT	•	•	•	•	•	•	Document Handler Total requests
DHTOTDCL	DHDocLen	DFHDOCH	A	240	DHTOTDCL	•	•	•	•	•	•	Total length of all documents created
DISPATCH	Dispatch	DFHTASK	S	007	USRDISPT	•	•	•	•	•	•	Dispatch time
DISPWAIT	DispWait	DFHTASK	S	102	DISPWTT	•	•	•	•	•	•	Redispatch wait time
DLETCALL	DLETcall	DBCTL	A	015	DLETCALL	•	•	•	•	•	•	Number of Database DLET calls issued
DLICALLS	DLIcalls	DBCTL	A	017	DLICALLS	•	•	•	•	•	•	Total DL/I Database calls
DLIWARN	DLIWARN	OMCICS	C	002	DLIWARN	•	•	•	•	•	•	OMEGAMON DLI Limit Warning
DPLRECS	DPL Recs	CICSPA	A	005	DPLRECS	•	•	•	•	•	•	Cross-System DPL records
DSAWARN	DSAWARN	OMCICS	C	011	DSAWARN	•	•	•	•	•	•	OMEGAMON DSA Limit Warning
DSCHMDLY	DSCHMDLY	DFHTASK	S	247	DSCHMDLY	–	–	–	–	•	•	Redispatch wait time caused by change-TCB mode
DSMMSCWT	DS Wait	DFHTASK	S	279	DSMMSCWT	–	–	•	•	•	•	DS storage constraint wait time
DSPDELAY	Disp1Dly	DFHTASK	S	125	DSPDELAY	•	•	•	•	•	•	First dispatch wait time
DSTCBHWM	DSTCBHWM	DFHTASK	A	252	DSTCBHWM	–	–	–	•	•	•	CICS Dispatcher TCB HWM
DSTCBMWT	DSTCBMWT	DFHTASK	S	268	DSTCBMWT	–	–	–	•	•	•	Dispatcher TCB Mismatch wait time
EDSAWARN	EDSAWARN	OMCICS	C	012	EDSAWARN	•	•	•	•	•	•	OMEGAMON EDSA Limit Warning
EJBACTIV	EJBActiv	DFHEJBS	A	312	EJBSACCT	–	–	–	•	•	•	Number of Bean State Activation requests
EJBCREAT	EJBCreat	DFHEJBS	A	314	EJBCRECT	–	–	–	•	•	•	Number of Bean Creation requests
EJBMETHD	EJBMethd	DFHEJBS	A	316	EJBMTHCT	–	–	–	•	•	•	Number of EJB Method Calls
EJBPASIV	EJBPasiv	DFHEJBS	A	313	EJBSPACT	–	–	–	•	•	•	Number of Bean State Passivation requests
EJBREMOV	EJBRemov	DFHEJBS	A	315	EJBREMCT	–	–	–	•	•	•	Number of Bean Removal requests
EJBTOTAL	EJBTotal	DFHEJBS	A	317	EJBTOTCT	–	–	–	•	•	•	Total Number of EJB requests
ELAPWARN	ELAPWARN	OMCICS	C	010	ELAPWARN	•	•	•	•	•	•	OMEGAMON Elapsed Time Limit Warning
ENQDELAY	ENQDelay	DFHTASK	S	129	ENQDELAY	•	•	•	•	•	•	Local Enqueue wait time
ERRFLAGS	Err Flag	DFHTASK	A	064	TASKFLAG	•	•	•	•	•	•	Task error flags
EXCLDEQS	ExclDEQs	DBCTL	A	026	EXCLDEQS	•	•	•	•	•	•	Number of Exclusive Dequeues
EXCLENQS	ExclENQs	DBCTL	A	024	EXCLENQS	•	•	•	•	•	•	Number of Exclusive Enqueues
EXCLENQW	ExclENQW	DBCTL	A	025	EXCLENQW	•	•	•	•	•	•	Number of waits on Exclusive Enqueues
EXWAIT	Exc Wait	DFHCICS	S	103	EXWTTIME	•	•	•	•	•	•	Exception Conditions wait time
FCADD	FCADD	DFHFILE	A	039	FCADDCT	•	•	•	•	•	•	File ADD requests
FCAMCT	FCAMRq	DFHFILE	A	070	FCAMCT	•	•	•	•	•	•	File access-method requests
FCBROWSE	FCBROWSE	DFHFILE	A	038	FCBRWCT	•	•	•	•	•	•	File Browse requests
FCDELETE	FCDELETE	DFHFILE	A	040	FCDELCT	•	•	•	•	•	•	File DELETE requests
FCGET	FCGET	DFHFILE	A	036	FCGETCT	•	•	•	•	•	•	File GET requests
FCPUT	FCPUT	DFHFILE	A	037	FCPUTCT	•	•	•	•	•	•	File PUT requests
FCTOTAL	FC Total	DFHFILE	A	093	FCTOTCT	•	•	•	•	•	•	File Control requests
FCTY	Fcty	DFHTASK	C	163	FCTYNAME	•	•	•	•	•	•	Transaction Facility name
FCTYTYPE	FctyType	DFHTASK	A	164	TRANFLAG	•	•	•	•	•	•	Transaction facility type
FCWAIT	FC Wait	DFHFILE	S	063	FCIOWTT	•	•	•	•	•	•	File I/O wait time
FILENAME	FileName	CICSPA	C	916	FILENAME	•	–	•	•	•	•	File name
FUNCSHIP	FuncShip	CICSPA	A	004	FUNCSHIP	•	•	•	•	•	•	Cross-System Function Shipping records
GHNCALL	GHNcall	DBCTL	A	012	GHNCALL	•	•	•	•	•	•	Number of Database GHN calls issued
GHNPCALL	GHNPcall	DBCTL	A	013	GHNPCALL	•	•	•	•	•	•	Number of Database GHNP calls issued
GHUCALL	GHUcall	DBCTL	A	011	GHUCALL	•	•	•	•	•	•	Number of Database GHU calls issued
GIVEUPWT	GiveUpWt	DFHTASK	S	184	GVUPWAIT	•	•	•	•	•	•	Give up control wait time
GNCALL	GNcall	DBCTL	A	009	GNCALL	•	•	•	•	•	•	Number of Database GN calls issued
GNPCALL	GNPcall	DBCTL	A	010	GNPCALL	•	•	•	•	•	•	Number of Database GNP calls issued
GNQDELAY	GNQDelay	DFHTASK	S	123	GNQDELAY	•	•	•	•	•	•	Global Enqueue wait time
GUCALL	GUcall	DBCTL	A	008	GUCALL	•	•	•	•	•	•	Number of Database GU calls issued
ICDELAY	IC Delay	DFHTASK	S	183	ICDELAY	•	•	•	•	•	•	Interval Control (IC) wait time
ICPUT	ICSTART	DFHTASK	A	059	ICPUINCT	•	•	•	•	•	•	Interval Control START or INITIATE requests
ICSTACCT	ICSTACCT	DFHTASK	A	065	ICSTACCT	–	–	–	–	•	•	Local IC START requests with CHANNEL option
ICSTACDL	ICSTACDL	DFHTASK	A	345	ICSTACDL	–	–	–	–	•	•	Container data len for Local IC START w/ CHANNEL
ICSTRCCT	ICSTRCCT	DFHTASK	A	346	ICSTRCCT	–	–	–	–	•	•	Remote IC START requests with CHANNEL option

Cross-reference: CICS PA field name × CICS version

Table 17. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	530	610	620	630	640	650	Description
ICSTRCDL	ICSTRCDL	DFHTASK	A	347	ICSTRCDL	–	–	–	–	•	•	Container data len for Remot IC START w/ CHANNEL
ICTOTAL	IC Total	DFHTASK	A	066	ICTOTCT	•	•	•	•	•	•	Interval Control requests
IDMSREQ	IDMSREQ	OMCICS	S	016	IDMSREQ	•	•	•	•	•	•	OMEGAMON monitored CA-IDMS requests
IDMSWARN	IDMSWARN	OMCICS	C	006	IDMSWARN	•	•	•	•	•	•	OMEGAMON CA-IDMS Limit Warning
IMSREQCT	IMS Reqs	DFHDATA	A	179	IMSREQCT	•	•	•	•	•	•	IMS (DBCTL) requests
IMSWAIT	IMS Wait	DFHDATA	S	186	IMSWAIT	•	•	•	•	•	•	IMS (DBCTL) wait time
INTCWAIT	IntCWait	DBCTL	A	003	INTCWAIT	•	•	•	•	•	•	Elapsed wait time for Intent Conflict
IOWAIT	I/O Wait	CICSPA	D	907	IOWAIT	•	•	•	•	•	•	Total IO wait time
IRESP	Int Resp	CICSPA	D	908	IRESP	•	•	•	•	•	•	Transaction internal response time
IRWAIT	IR Wait	DFHTERM	S	100	IRIOWTT	•	•	•	•	•	•	MRO link wait time
ISALLOC	ISALLOC	DFHSOCK	A	288	ISALLOCT	–	–	–	–	–	•	Allocate Session requests for sessions on IP
ISIPICNM	ISIPICNM	DFHSOCK	C	305	ISIPCNNM	–	–	–	–	–	•	Name of IPCONN definition that attached the task
ISRTCALL	ISRTcall	DBCTL	A	014	ISRTCALL	•	•	•	•	•	•	Number of Database ISRT calls issued
ISWAIT	IS Wait	DFHSOCK	S	300	ISIOWTT	–	–	–	–	–	•	IPCONN link wait time
J8CPU	J8 CPU	DFHTASK	S	260	J8CPUT	•	•	•	•	•	•	CICS J8 TCB CPU time
J9CPU	J9 CPU	DFHTASK	S	267	J9CPUT	–	–	–	–	•	•	User task J9 Mode CPU time
JCWAIT	JC Wait	DFHJOUR	S	010	JCIOWTT	•	•	•	•	•	•	Journal I/O wait time
JNLPUT	JnlWrite	DFHJOUR	A	058	JNLWRTCT	•	•	•	•	•	•	Journal write requests
JOBNAME	Jobname	CICSPA	C	905	JOBNAME	•	•	•	•	•	•	Job Name
JVMITIME	JVMITime	DFHTASK	S	273	JVMITIME	–	•	•	•	•	•	JVM initialize elapsed time
JVMMTIME	JVM Meth	CICSPA	D	910	JVMMTIME	–	•	•	•	•	•	JVM Method time
JVMRTIME	JVMRTime	DFHTASK	S	275	JVMRTIME	–	•	•	•	•	•	JVM reset elapsed time
JVMSUSP	JVM Susp	DFHTASK	S	254	JVMSUSP	•	•	•	•	•	•	JVM suspend time
JVMTIME	JVM Elap	DFHTASK	S	253	JVMTIME	•	•	•	•	•	•	JVM elapsed time
KY8CPU	KY8 CPU	DFHTASK	S	263	KY8CPUT	–	•	•	•	•	•	CICS Key 8 TCB CPU time
KY8DISPT	KY8 Disp	DFHTASK	S	262	KY8DISPT	–	•	•	•	•	•	CICS Key 8 TCB dispatch time
KY9CPU	KY9 CPU	DFHTASK	S	265	KY9CPUT	–	–	–	–	•	•	User task Key 9 Mode CPU time
KY9DISPT	KY9 Disp	DFHTASK	S	264	KY9DISPT	–	–	–	–	•	•	User task Key 9 Mode Dispatch time
L8CPU	L8 CPU	DFHTASK	S	259	L8CPUT	•	•	•	•	•	•	CICS L8 TCB CPU time
L9CPU	L9 CPU	DFHTASK	S	266	L9CPUT	–	–	–	–	•	•	User task L9 CPU time
LOCKDLAY	LM Delay	DFHTASK	S	128	LMDELAY	•	•	•	•	•	•	Lock Manager (LM) wait time
LOGWRITE	LogWrite	DFHJOUR	A	172	LOGWRTCT	•	•	•	•	•	•	Log Stream write requests
LU61WAIT	LU61Wait	DFHTERM	S	133	LU61WTT	•	•	•	•	•	•	LU6.1 wait time
LU62WAIT	LU62Wait	DFHTERM	S	134	LU62WTT	•	•	•	•	•	•	LU6.2 wait time
LUNAME	LUName	DFHTERM	C	111	LUNAME	•	•	•	•	•	•	VTAM logical unit name
MAXHTDLY	MaxHTDly	DFHTASK	S	278	MAXHTDLY	–	–	•	•	–	–	Maximum Hot-Pooling TCB delay time
MAXJTDLY	MaxJTDly	DFHTASK	S	277	MAXJTDLY	–	–	•	•	•	•	Maximum JVM TCB delay time
MAXOTDLY	MaxOTDly	DFHTASK	S	250	MXTOTDLY	•	•	•	•	•	•	Maximum Open TCB delay time
MAXSTDLY	MAXSTDLY	DFHTASK	S	281	MAXSTDLY	–	–	–	–	•	•	Maximum SSL TCB delay time
MAXXTDLY	MAXXTDLY	DFHTASK	S	282	MAXXTDLY	–	–	–	–	•	•	Maximum XPLink TCB delay time
MQWARN	MQWARN	OMCICS	C	004	MQWARN	•	•	•	•	•	•	OMEGAMON MQ Limit Warning
MSCPU	MS CPU	DFHTASK	S	258	MSCPUT	•	•	•	•	•	•	CICS TCBs CPU time
MSDISPT	MS Disp	DFHTASK	S	257	MSDISPT	•	•	•	•	•	•	CICS TCBs dispatch time
MSGIN1	MsgIn1	DFHTERM	A	034	TCMSGIN1	•	•	•	•	•	•	Messages received count
MSGIN2	MsgIn2	DFHTERM	A	067	TCMSGIN2	•	•	•	•	•	•	Messages received from LU6.1
MSGOUT1	MsgOut1	DFHTERM	A	035	TCMSGOU1	•	•	•	•	•	•	Messages sent count
MSGOUT2	MsgOut2	DFHTERM	A	068	TCMSGOU2	•	•	•	•	•	•	Messages sent to LU6.1
MVSID	MVS ID	CICSPA	C	904	MVSID	•	•	•	•	•	•	MVS SMF ID
MXTDELAY	MXTDelay	DFHTASK	S	127	MXTDELAY	•	•	•	•	•	•	First dispatch MXT wait time
NATURE	Nature	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Transaction
NETID	NET ID	DFHTERM	C	197	NETID	–	•	•	•	•	•	VTAM LUALIAS Network ID
NETNAME	NETName	DFHTASK	C	097	NETUOWPX	•	•	•	•	•	•	Originating System VTAM network name
NETUOWSX	NETUOWID	DFHTASK	C	098	NETUOWSX	•	•	•	•	•	•	Network UOW ID
OAPPLID	OAPPLID	DFHCICS	C	360	OAPPLID	–	–	–	–	–	•	Originating CICS APPLID
OCLINTIP	OClintIP	DFHCICS	C	368	OCLIPADR	–	–	–	–	–	•	Originating Client or Telnet IP address

Table 17. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	530	610	620	630	640	650	Description
OCLIPORT	OCLIPORT	DFHCICS	A	369	OCLIPORT	–	–	–	–	–	•	Originating Client IP Port Number
OFCTY	OFcty	DFHCICS	C	371	OFCTYNME	–	–	–	–	–	•	Originating Transaction Facility name
OFCTYTYP	OFctyTyp	DFHCICS	A	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction Facility Type
OMEGWORK	OMEGWORK	OMCICS	C	015	OMEGWORK	•	•	•	•	•	•	OMEGAMON User work area
ONETWKID	ONETWKID	DFHCICS	C	359	ONETWKID	–	–	–	–	–	•	Originating Network ID
OORIGIN	OOrigin	DFHCICS	C	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction Origin type
OPORT	OPORT	DFHCICS	A	367	OPORTNUM	–	–	–	–	–	•	Originating TCP/IP Port Number
ORIGIN	Origin	DFHTASK	C	164	TRANFLAG	•	•	•	•	•	•	Transaction origin type
OSOWAIT	OSO Wait	DFHSOCK	S	299	SOOIOWTT	–	•	•	•	•	•	Outbound Socket I/O Wait Time
OSTART	OStart	DFHCICS	T	361	OSTART	–	–	–	–	–	•	Originating Task start time
OTASKNO	OTaskNo	DFHCICS	P	362	OTRANNUM	–	–	–	–	–	•	Originating Transaction number
OTCPSRVC	OTCPIPSr	DFHCICS	C	366	OTCPSVCE	–	–	–	–	–	•	Originating TCP/IP Service Name
OTRAN	OTran	DFHCICS	C	363	OTRAN	–	–	–	–	–	•	Originating Transaction identifier
OTRANFLG	OTranFlg	DFHCICS	A	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction flags
OTRANTYP	OTranTyp	DFHCICS	C	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction type
OTSID	OTS ID	DFHTASK	C	194	OTSTID	–	•	•	•	•	•	OTS Transaction ID
OTSINDWT	OTSIndWt	DFHSYNC	S	199	OTSINDWT	–	•	•	•	•	•	OTS Indoubt Wait time
OUSERCOR	OUserCor	DFHCICS	C	365	OUSERCOR	–	–	–	–	–	•	Originating User Correlator
OUSERID	OUserid	DFHCICS	C	364	OUSERID	–	–	–	–	–	•	Originating User ID
OVFLBFRU	OvflBfrU	DBCTL	A	029	OVFLBFRU	•	•	•	•	•	•	Number of Overflow Buffers used
PC24BHWM	PC24bHWM	DFHSTOR	A	108	PC24BHWM	•	•	•	•	•	•	Program Storage HWM below 16MB
PC24CHWM	PC24CHWM	DFHSTOR	A	143	PC24CHWM	•	•	•	•	•	•	Program Storage (CDSA) HWM below 16MB
PC24RHWM	PC24RHWM	DFHSTOR	A	162	PC24RHWM	•	•	•	•	•	•	Program Storage (RDSA) HWM below 16MB
PC24SHWM	PC24SHWM	DFHSTOR	A	160	PC24SHWM	•	•	•	•	•	•	Program Storage (SDSA) HWM below 16MB
PC31AHWM	PC31aHWM	DFHSTOR	A	139	PC31AHWM	•	•	•	•	•	•	Program Storage HWM above 16MB
PC31CHWM	PC31CHWM	DFHSTOR	A	142	PC31CHWM	•	•	•	•	•	•	Program Storage (ECDSA) HWM above 16MB
PC31RHWM	PC31RHWM	DFHSTOR	A	122	PC31RHWM	•	•	•	•	•	•	Program Storage (ERDSA) HWM above 16MB
PC31SHWM	PC31SHWM	DFHSTOR	A	161	PC31SHWM	•	•	•	•	•	•	Program Storage (ESDSA) HWM above 16MB
PCDLCRDL	PCDLCRDL	DFHPROG	A	287	PCDLCRDL	–	–	–	–	•	•	Container data length for DPL RETURN w/ CHANNEL
PCDLCSDL	PCDLCSDL	DFHPROG	A	286	PCDLCSDL	–	–	–	–	•	•	Container data length for DPL reqs with CHANNEL
PCDPL	PCDPLINK	DFHPROG	A	073	PCDPLCT	•	•	•	•	•	•	Distributed Program Link (DPL) requests
PCDPLCCT	PCDPLCCT	DFHPROG	A	308	PCDPLCCT	–	–	–	–	•	•	DPL requests with CHANNEL option
PCLINK	PCLINK	DFHPROG	A	055	PCLINKCT	•	•	•	•	•	•	Program LINK requests
PCLNKCCT	PCLNKCCT	DFHPROG	A	306	PCLNKCCT	–	–	–	–	•	•	LINK requests with CHANNEL option
PCLOAD	PCLOAD	DFHPROG	A	057	PCLOADCT	•	•	•	•	•	•	Program LOAD requests
PCLOADTM	PCLOADWt	DFHPROG	S	115	PCLOADTM	•	•	•	•	•	•	Program Library wait time
PCLURM	PCLNKURM	DFHPROG	A	072	PCLURMCT	•	•	•	•	•	•	Program LINK URM requests
PCRTNCCT	PCRTNCCT	DFHPROG	A	309	PCRTNCCT	–	–	–	–	•	•	Program RETURN requests with CHANNEL option
PCRTNCDL	PCRTNCDL	DFHPROG	A	310	PCRTNCDL	–	–	–	–	•	•	Container data length for RETURN with CHANNEL
PCSTGHWM	PCStgHWM	DFHSTOR	A	087	PCSTGHWM	•	•	•	•	•	•	Program Storage HWM above and below 16MB
PCXCLCCT	PCXCLCCT	DFHPROG	A	307	PCXCLCCT	–	–	–	–	•	•	XCTL requests with CHANNEL option
PCXCTL	PCXCTL	DFHPROG	A	056	PCXCTLCT	•	•	•	•	•	•	Program XCTL requests
PGBRWCCT	PGBRWCCT	DFHCHNL	A	322	PGBRWCCT	–	–	–	–	•	•	BROWSE CHANNEL CONTAINER requests
PGCRECCT	PGCRECCT	DFHCHNL	A	328	PGCRECCT	–	–	–	–	•	•	Number of Containers created
PGCSTHWM	PGCSTHWM	DFHCHNL	A	329	PGCSTHWM	–	–	–	–	–	•	Maximum Container Storage allocated to task
PGGETCCT	PGGETCCT	DFHCHNL	A	323	PGGETCCT	–	–	–	–	•	•	GET CHANNEL CONTAINER requests
PGGETCDL	PGGETCDL	DFHCHNL	A	326	PGGETCDL	–	–	–	–	•	•	GET CHANNEL CONTAINER data length
PGMOVCCT	PGMOVCCT	DFHCHNL	A	325	PGMOVCCT	–	–	–	–	•	•	MOVE CHANNEL CONTAINER requests
PGPUTCCT	PGPUTCCT	DFHCHNL	A	324	PGPUTCCT	–	–	–	–	•	•	PUT CHANNEL CONTAINER requests
PGPUTCDL	PGPUTCDL	DFHCHNL	A	327	PGPUTCDL	–	–	–	–	•	•	PUT CHANNEL CONTAINER data length
PGTOTCCT	PGTOTCCT	DFHCHNL	A	321	PGTOTCCT	–	–	–	–	•	•	Total number of CHANNEL CONTAINER requests
PILOCKEL	PILockEl	DBCTL	A	006	PILOCKEL	•	•	•	•	•	•	Elapsed time for PI Locking

Cross-reference: CICS PA field name × CICS version

| CICS PA field name | Column heading | CMF field | | | | CICS version | | | | | | Description |
		Group	Type	ID	Name	530	610	620	630	640	650	
POOLWAIT	PoolWait	DBCTL	A	002	POOLWAIT	•	•	•	•	•	•	Elapsed wait time for Pool Space
PORT	PORT	DFHSOCK	A	246	PORTNUM	–	•	•	•	•	•	TCP/IP Port Number
PRCSNAME	BTS Proc	DFHCBTS	C	200	PRCSNAME	•	•	•	•	•	•	BTS Process name
PRCSTYPE	BTS PTyp	DFHCBTS	C	201	PRCSTYPE	•	•	•	•	•	•	BTS Process type
PROGRAM	Program	DFHPROG	C	071	PGMNAME	•	•	•	•	•	•	Program name
PSBNAME	PSB Name	DBCTL	C	001	PSBNAME	•	•	•	•	•	•	PSB Name
PTPWAIT	PTP Wait	DFHTASK	S	285	PTPWAIT	–	–	•	•	•	•	3270 Bridge Partner wait time
QRCPU	QR CPU	DFHTASK	S	256	QRCPUT	•	•	•	•	•	•	CICS QR TCB CPU time
QRDISPT	QR Disp	DFHTASK	S	255	QRDISPT	•	•	•	•	•	•	CICS QR TCB dispatch time
QRMODDLY	QRModDly	DFHTASK	S	249	QRMODDLY	•	•	•	•	•	•	CICS QR TCB redispatch wait time
RECCOUNT	RecCount	DFHCICS	A	131	PERRECNT	•	•	•	•	•	•	Task Performance record count
RELEASE	Rlse	CICSPA	C	909	RELEASE	•	•	•	•	•	•	CICS release
REPLCALL	REPLcall	DBCTL	A	016	REPLCALL	•	•	•	•	•	•	Number of Database REPL calls issued
RESPONSE	Response	CICSPA	D	901	RESP	•	•	•	•	•	•	Transaction response time
RLSCPU	RLS CPU	DFHFILE	S	175	RLSCPUT	•	•	•	•	•	•	RLS File Request CPU (SRB) time
RLSWAIT	RLS Wait	DFHFILE	S	174	RLSWAIT	•	•	•	•	•	•	RLS File I/O wait time
RLUNAME	RLUNAME	DFHTERM	C	198	RLUNAME	–	•	•	•	•	•	VTAM LUALIAS Logical Unit name
RMICPSM	RMI CPSM	DFHRMI	S	007	RMICPSM	–	–	•	•	•	•	RMI elapsed time for CICSPlex SM requests
RMIDB2	RMI DB2	DFHRMI	S	003	RMIDB2	–	–	•	•	•	•	RMI elapsed time for DB2 requests
RMIDBCTL	RMIDBCTL	DFHRMI	S	004	RMIDBCTL	–	–	•	•	•	•	RMI elapsed time for DBCTL requests
RMIEXDLI	RMIEXDLI	DFHRMI	S	005	RMIEXDLI	–	–	•	•	•	•	RMI elapsed time for EXEC DLI requests
RMIMQM	RMI MQ	DFHRMI	S	006	RMIMQM	–	–	•	•	•	•	RMI elapsed time for WebSphere MQ requests
RMIOTHER	RMI Othr	DFHRMI	S	002	RMIOTHER	–	–	•	•	•	•	RMI other elapsed time
RMIOTIME	RMIOTime	CICSPA	D	911	RMIOTIME	•	•	•	•	•	•	Resource Manager Interface (RMI) other time
RMISUSP	RMI Susp	DFHTASK	S	171	RMISUSP	•	•	•	•	•	•	Resource Manager Interface (RMI) suspend time
RMITCPIP	RMITCPIP	DFHRMI	S	008	RMITCPIP	–	–	–	•	•	•	RMI elapsed time for TCP/IP socket requests
RMITIME	RMI Elap	DFHTASK	S	170	RMITIME	•	•	•	•	•	•	Resource Manager Interface (RMI) elapsed time
RMITOTAL	RMITotal	DFHRMI	S	001	RMITOTAL	–	–	•	•	•	•	RMI total elapsed time
ROCPU	RO CPU	DFHTASK	S	270	ROCPUT	–	–	•	•	•	•	CICS RO TCB CPU time
RODISPT	RO Disp	DFHTASK	S	269	RODISPT	–	–	•	•	•	•	CICS RO TCB dispatch time
RPTCLASS	RptClass	DFHCICS	C	168	RPTCLASS	•	•	•	•	•	•	WLM Report Class
RQPWAIT	RQP Wait	DFHTASK	S	193	RQPWAIT	–	•	•	•	•	•	Request Processor Wait Time
RQRWAIT	RQR Wait	DFHTASK	S	192	RQRWAIT	–	•	•	•	•	•	Request Receiver Wait Time
RRMSWAIT	RRMSWait	DFHTASK	S	191	RRMSWAIT	•	•	•	•	•	•	Resource Recovery Services indoubt wait time
RSYSID	RSID	DFHCICS	C	130	RSYSID	•	•	•	•	•	•	Remote System ID
RTYPE	RTyp	DFHCICS	C	112	RTYPE	•	•	•	•	•	•	Performance record type
RUNTRWTT	BTSRunWt	DFHTASK	S	195	RUNTRWTT	•	•	•	•	•	•	BTS run Process/Activity wait time
S8CPU	S8 CPU	DFHTASK	S	261	S8CPUT	•	•	•	•	•	•	CICS S8 TCB CPU time
SC24CGET	SC24CGet	DFHSTOR	A	117	SCCGETCT	•	•	•	•	•	•	CDSA GETMAINs below 16MB
SC24CHWM	SC24CHWM	DFHSTOR	A	116	SC24CHWM	•	•	•	•	•	•	CDSA HWM below 16MB
SC24COCC	SC24COcc	DFHSTOR	A	118	SC24COCC	•	•	•	•	•	•	CDSA Storage Occupancy below 16MB
SC24FSHR	SC24FShr	DFHSTOR	A	146	SC24FSHR	•	•	•	•	•	•	CDSA/SDSA storage FREEMAINed below 16MB
SC24GSHR	SC24GShr	DFHSTOR	A	145	SC24GSHR	•	•	•	•	•	•	CDSA/SDSA storage GETMAINed below 16MB
SC24SGET	SC24SGet	DFHSTOR	A	144	SC24SGCT	•	•	•	•	•	•	CDSA/SDSA GETMAINs below 16MB
SC24UGET	SC24UGet	DFHSTOR	A	054	SCUGETCT	•	•	•	•	•	•	UDSA GETMAINs below 16MB
SC24UHWM	SC24UHWM	DFHSTOR	A	033	SCUSRHWM	•	•	•	•	•	•	UDSA HWM below 16MB
SC24UOCC	SC24UOcc	DFHSTOR	A	095	SCUSRSTG	•	•	•	•	•	•	UDSA Storage Occupancy below 16MB
SC31CGET	SC31CGet	DFHSTOR	A	120	SCCGETCT	•	•	•	•	•	•	ECDSA GETMAINs above 16MB
SC31CHWM	SC31CHWM	DFHSTOR	A	119	SC31CHWM	•	•	•	•	•	•	ECDSA HWM above 16MB
SC31COCC	SC31COcc	DFHSTOR	A	121	SC31COCC	•	•	•	•	•	•	ECDSA Storage Occupancy above 16MB
SC31FSHR	SC31FShr	DFHSTOR	A	149	SC31FSHR	•	•	•	•	•	•	ECDSA/ESDSA storage FREEMAINed above 16MB
SC31GSHR	SC31GShr	DFHSTOR	A	148	SC31GSHR	•	•	•	•	•	•	ECDSA/ESDSA storage GETMAINed above 16MB

Table 17. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	530	610	620	630	640	650	Description
SC31SGET	SC31SGet	DFHSTOR	A	147	SC31SGCT	•	•	•	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
SC31UGET	SC31UGet	DFHSTOR	A	105	SCUGETCT	•	•	•	•	•	•	EUDSA GETMAINs above 16MB
SC31UHWM	SC31UHWM	DFHSTOR	A	106	SCUSRHWM	•	•	•	•	•	•	EUDSA HWM above 16MB
SC31UOCC	SC31UOcc	DFHSTOR	A	107	SCUCRSTG	•	•	•	•	•	•	EUDSA Storage Occupancy above 16MB
SCHEDEND	SchedEnd	DBCTL	T	034	SCHEDEND	•	•	•	•	•	•	IMS Schedule end time
SCHEDSTA	SchedSta	DBCTL	T	033	SCHEDSTA	•	•	•	•	•	•	IMS Schedule start time
SCHTELAP	SchTElap	DBCTL	A	004	SCHTELAP	•	•	•	•	•	•	Elapsed time for Schedule Process
SESSTYPE	SessType	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal session type
SOBYDECT	SockDcry	DFHSOCK	A	243	SOBYDECT	•	•	•	•	•	•	Secure Socket bytes decrypted count
SOBYENCT	SockEcry	DFHSOCK	A	242	SOBYENCT	•	•	•	•	•	•	Secure Socket bytes encrypted count
SOCHRIN	SOChrIn	DFHSOCK	A	295	SOCHRIN	–	•	•	•	•	•	Outbound Sockets characters received count
SOCHRIN1	SOChrIn1	DFHSOCK	A	302	SOCHRIN1	–	–	•	•	•	•	Inbound Sockets characters received count
SOCHROU1	SOChrOu1	DFHSOCK	A	304	SOCHROU1	–	–	•	•	•	•	Inbound Sockets characters sent count
SOCHROUT	SOChrOut	DFHSOCK	A	297	SOCHROUT	–	•	•	•	•	•	Outbound Sockets characters sent count
SOCNPSCT	SOCNPSRq	DFHSOCK	A	290	SOCNPSCT	–	•	•	•	•	•	Create Non-Persistent Outbound Socket reqs
SOCPSCT	SOCPSReq	DFHSOCK	A	291	SOCPSCT	–	•	•	•	•	•	Create Persistent Outbound Socket requests
SOEXTRCT	SOEXTRAC	DFHSOCK	A	289	SOEXTRCT	–	•	•	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
SOMSGIN1	SOMsgIn1	DFHSOCK	A	301	SOMSGIN1	–	–	•	•	•	•	Inbound Sockets RECEIVE requests
SOMSGOU1	SOMsgOu1	DFHSOCK	A	303	SOMSGOU1	–	–	•	•	•	•	Inbound Sockets SEND requests
SONPSHWM	SONPSHWM	DFHSOCK	A	292	SONPSHWM	–	•	•	•	•	•	Non-Persistent Outbound Socket HWM
SOPSHWM	SOPSHWM	DFHSOCK	A	293	SOPSHWM	–	•	•	•	•	•	Persistent Outbound Socket HWM
SORCV	SO Recv	DFHSOCK	A	294	SORCVCT	–	•	•	•	•	•	Outbound Sockets RECEIVE requests
SOSEND	SO SEND	DFHSOCK	A	296	SOSENDCT	–	•	•	•	•	•	Outbound Sockets SEND requests
SOTOTAL	SOTotal	DFHSOCK	A	298	SOTOTCT	–	•	•	•	•	•	Socket Total requests
SOWAIT	SockWait	DFHSOCK	S	241	SOIOWTT	•	•	•	•	•	•	Inbound Socket I/O wait time
SRVCLASS	SrvClass	DFHCICS	C	167	SRVCLASS	•	•	•	•	•	•	WLM Service Class
START	Start	DFHCICS	T	005	START	•	•	•	•	•	•	Task start time
STOP	Stop	DFHCICS	T	006	STOP	•	•	•	•	•	•	Task stop time
STYPE	SC	DFHTASK	C	004	TTYPE	•	•	•	•	•	•	Transaction start type
SUPRREQ	SUPRREQ	OMCICS	S	018	SUPRREQ	•	•	•	•	•	•	OMEGAMON monitored Supra requests
SUPRWARN	SUPRWARN	OMCICS	C	007	SUPRWARN	•	•	•	•	•	•	OMEGAMON Supra Limit Warning
SUSPEND	Suspend	DFHTASK	S	014	SUSPTIME	•	•	•	•	•	•	Suspend time
SYNCDLY	SYNC Dly	DFHSYNC	S	196	SYNCDLY	•	•	•	•	•	•	SYNCPOINT parent request wait time
SYNCPT	SYNCPT	DFHSYNC	A	060	SPSYNCCT	•	•	•	•	•	•	SYNCPOINT requests
SYNCTIME	SYNCProc	DFHSYNC	S	173	SYNCTIME	•	•	•	•	•	•	SYNCPOINT processing time
SZALLCTO	SZAlocTO	DFHFEPI	A	157	SZALLCTO	•	•	•	•	•	•	Allocate conversation time-out count
SZALLOC	SZALLOC	DFHFEPI	A	150	SZALLOCT	•	•	•	•	•	•	Conversations allocated count
SZCHRIN	SZChrIn	DFHFEPI	A	155	SZCHRIN	•	•	•	•	•	•	FEPI characters received count
SZCHROUT	SZChrOut	DFHFEPI	A	154	SZCHROUT	•	•	•	•	•	•	FEPI characters sent count
SZRCV	SZRCV	DFHFEPI	A	151	SZRCVCT	•	•	•	•	•	•	FEPI RECEIVE requests
SZRCVTO	SZRecvTO	DFHFEPI	A	158	SZRCVTO	•	•	•	•	•	•	Receive Data time-out count
SZSEND	SZSEND	DFHFEPI	A	152	SZSENDCT	•	•	•	•	•	•	FEPI SEND requests
SZSTART	SZSTART	DFHFEPI	A	153	SZSTRTCT	•	•	•	•	•	•	FEPI START requests
SZTOTAL	SZ Total	DFHFEPI	A	159	SZTOTCT	•	•	•	•	•	•	FEPI API and SPI requests
SZWAIT	SZ Wait	DFHFEPI	S	156	SZWAIT	•	•	•	•	•	•	FEPI services wait time
TASKCNT	#Tasks	CICSPA	X	902	TASKCNT	•	•	•	•	•	•	Total Task count
TASKNO	TaskNo	DFHTASK	P	031	TRANNUM	•	•	•	•	•	•	Transaction identification number
TASKTCNT	#TTasks	CICSPA	X	914	TASKTCNT	•	•	•	•	•	•	Total Task Termination count
TCALLOC	TCALLOC	DFHTERM	A	069	TCALLOCT	•	•	•	•	•	•	TCTTE ALLOCATE requests
TCBATTCT	TCBAtach	DFHTASK	A	251	TCBATTCT	•	•	•	•	•	•	TCBs attached count
TCC62IN2	TCC62In2	DFHTERM	A	137	TCC62IN2	•	•	•	•	•	•	LU6.2 characters received count
TCC62OU2	TCC62Ou2	DFHTERM	A	138	TCC62OU2	•	•	•	•	•	•	LU6.2 characters sent count
TCLASSNM	TCLSName	DFHTASK	C	166	TCLSNAME	•	•	•	•	•	•	Transaction Class name
TCLDELAY	TCLDelay	DFHTASK	S	126	TCLDELAY	•	•	•	•	•	•	First dispatch TCLSNAME wait time
TCM62IN2	TCM62In2	DFHTERM	A	135	TCM62IN2	•	•	•	•	•	•	LU6.2 messages received count
TCM62OU2	TCM62Ou2	DFHTERM	A	136	TCM62OU2	•	•	•	•	•	•	LU6.2 messages sent count
TCPSRVCE	TCPIPSrv	DFHSOCK	C	245	TCPSRVCE	–	•	•	•	•	•	TCP/IP Service Name

Cross-reference: CICS PA field name × CICS version

Table 17. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	Group	Type	ID	Name	530	610	620	630	640	650	Description
TCWAIT	TC Wait	DFHTERM	S	009	TCIOWTT	•	•	•	•	•	•	Terminal wait for input time
TDGET	TDGET	DFHDEST	A	041	TDGETCT	•	•	•	•	•	•	Transient data GET requests
TDPURGE	TDPURGE	DFHDEST	A	043	TDPURCT	•	•	•	•	•	•	Transient data PURGE requests
TDPUT	TDPUT	DFHDEST	A	042	TDPUTCT	•	•	•	•	•	•	Transient data PUT requests
TDTOTAL	TD Total	DFHDEST	A	091	TDTOTCT	•	•	•	•	•	•	Transient data Total requests
TDWAIT	TD Wait	DFHDEST	S	101	TDIOWTT	•	•	•	•	•	•	VSAM transient data I/O wait time
TERM	Term	DFHTERM	C	002	TERM	•	•	•	•	•	•	Terminal ID
TERMCNNM	ConnName	DFHTERM	C	169	TERMCNNM	•	•	•	•	•	•	Terminal session Connection name
TERMCODE	DevT	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal Device Type
TERMINFO	TermInfo	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal information
TESTDEQS	TestDEQs	DBCTL	A	020	TESTDEQS	•	•	•	•	•	•	Number of Test Dequeues
TESTENQS	TestENQs	DBCTL	A	018	TESTENQS	•	•	•	•	•	•	Number of Test Enqueues
TESTENQW	TestENQW	DBCTL	A	019	TESTENQW	•	•	•	•	•	•	Number of waits on Test Enqueues
THREDCPU	ThredCPU	DBCTL	A	032	THREDCPU	•	•	•	•	•	•	Thread TCB CPU time
TOTCPU	Tot CPU	CICSPA	D	918	TOTCPU	•	•	•	•	•	•	Total Task CPU Time
TOTRECS	TotlRecs	CICSPA	A	001	TOTRECS	•	•	•	•	•	•	Cross-System Total record count
TRAN	Tran	DFHTASK	C	001	TRAN	•	•	•	•	•	•	Transaction identifier
TRANFLAG	TranFlag	DFHTASK	A	164	TRANFLAG	•	•	•	•	•	•	Transaction flags
TRANPRTY	Prty	DFHTASK	A	109	TRANPRI	•	•	•	•	•	•	Transaction priority
TRANROUT	TranRout	CICSPA	A	003	TRANROUT	•	•	•	•	•	•	Cross-System Transaction Routing records
TRANTYPE	TranType	DFHTASK	C	164	TRANFLAG	•	•	•	•	•	•	Transaction type
TSGET	TSGET	DFHTEMP	A	044	TSGETCT	•	•	•	•	•	•	Temporary Storage GET requests
TSPUTAUX	TSPUTAux	DFHTEMP	A	046	TSPUTACT	•	•	•	•	•	•	Auxiliary TS PUT requests
TSPUTMCT	TSPUTMai	DFHTEMP	A	047	TSPUTMCT	•	•	•	•	•	•	Main TS PUT requests
TSQNAME	TSQ Name	CICSPA	C	917	TSQNAME	•	–	•	•	•	•	Temporary Storage Queue Name
TSSHWAIT	TSShWait	DFHTEMP	S	178	TSSHWAIT	•	•	•	•	•	•	Asynchronous Shared TS wait time
TSTOTAL	TS Total	DFHTEMP	A	092	TSTOTCT	•	•	•	•	•	•	TS Total requests
TSWAIT	TS Wait	DFHTEMP	S	011	TSIOWTT	•	•	•	•	•	•	VSAM TS I/O wait time
UE1WARN	UE1WARN	OMCICS	C	014	UE1WARN	•	•	•	•	•	•	OMEGAMON User Event Limit Warning
UOWCONTS	UOWConts	DBCTL	A	030	UOWCONTS	•	•	•	•	•	•	Number of UOW Contentions
UOWID	UOW ID	CICSPA	C	912	UOWID	•	•	•	•	•	•	Network UOW ID
UOWSEQ	UOW Seq	CICSPA	C	913	UOWSEQ	•	•	•	•	•	•	Network UOW Sequence Number
UPDTDEQS	UpdtDEQs	DBCTL	A	023	UPDTDEQS	•	•	•	•	•	•	Number of Update Dequeues
UPDTENQS	UpdtENQs	DBCTL	A	021	UPDTENQS	•	•	•	•	•	•	Number of Update Enqueues
UPDTENQW	UpdtENQW	DBCTL	A	022	UPDTENQW	•	•	•	•	•	•	Number of waits on Update Enqueues
USERID	Userid	DFHCICS	C	089	USERID	•	•	•	•	•	•	User ID
USREVNT	USREVNT	OMCICS	S	020	USREVNT	•	•	•	•	•	•	OMEGAMON User defined events
VSAMWARN	VSAMWARN	OMCICS	C	003	VSAMWARN	•	•	•	•	•	•	OMEGAMON VSAM Limit warning
WAITEVENT	CICSWait	DFHTASK	S	182	WTCEWAIT	•	•	•	•	•	•	CICS ECB wait time
WAITEXT	Ext Wait	DFHTASK	S	181	WTEXWAIT	•	•	•	•	•	•	External ECB wait time
WBBROWSE	WBBROWSE	DFHWEBB	A	239	WBBRWCT	–	•	•	•	•	•	Web Browse requests
WBBRWOCT	WBBRWOCT	DFHWEBB	A	338	WBBRWOCT	–	–	–	–	•	•	CICS Web Support BROWSE HTTPHEADER requests
WBCHRIN	WBChrIn	DFHWEBB	A	232	WBCHRIN	•	•	•	•	•	•	Web characters received count
WBCHRIN1	WBCHRIN1	DFHWEBB	A	334	WBCHRIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE chars
WBCHROU1	WBCHROU1	DFHWEBB	A	336	WBCHROU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE chars
WBCHROUT	WBChrOut	DFHWEBB	A	234	WBCHROUT	•	•	•	•	•	•	Web characters sent count
WBEXTRCT	WBEXTRAC	DFHWEBB	A	238	WBEXTRCT	–	•	•	•	•	•	Web EXTRACT requests
WBIWBSCT	WBIWBSCT	DFHWEBB	A	340	WBIWBSCT	–	–	–	–	•	•	CICS INVOKE WEBSERVICE requests
WBPARSCT	WBPARSCT	DFHWEBB	A	337	WBPARSCT	–	–	–	–	•	•	CICS Web Support PARSE URL requests
WBRCV	WBRCV	DFHWEBB	A	231	WBRCVCT	•	•	•	•	•	•	Web RECEIVE requests
WBRCVIN1	WBRCVIN1	DFHWEBB	A	333	WBRCVIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE requests
WBREAD	WB READ	DFHWEBB	A	224	WBREADCT	–	•	•	•	•	•	Web READ requests
WBREDOCT	WBREDOCT	DFHWEBB	A	331	WBREDOCT	–	–	–	–	•	•	CICS Web Support READ HTTPHEADER requests

Table 17. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	530	610	620	630	640	650	Description
WBREPRCT	WBRepoRd	DFHWEBB	A	236	WBREPRCT	•	•	•	•	•	•	Web Temporary Storage Repository read requests
WBREPRDL	WBREPRDL	DFHWEBB	A	341	WBREPRDL	–	–	–	–	•	•	Repository Read data length
WBREPWCT	WBRepoWr	DFHWEBB	A	237	WBREPWCT	•	•	•	•	•	•	Web Temporary Storage Repository write requests
WBREPWDL	WBREPWDL	DFHWEBB	A	342	WBREPWDL	–	–	–	–	•	•	Repository Write data length
WBSEND	WBSEND	DFHWEBB	A	233	WBSENDCT	•	•	•	•	•	•	Web SEND requests
WBSNDOU1	WBSNDOU1	DFHWEBB	A	335	WBSNDOU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE requests
WBTOTAL	WB Total	DFHWEBB	A	235	WBTOTWCT	•	•	•	•	•	•	Web Total requests
WBWRITE	WB WRITE	DFHWEBB	A	225	WBWRITCT	–	•	•	•	•	•	Web WRITE requests
WBWRTOCT	WBWRTOCT	DFHWEBB	A	332	WBWRTOCT	–	–	–	–	•	•	CICS Web Support WRITE HTTPHEADER requests
WMQGETWT	WMQGetWt	DFHDATA	S	396	WMQGETWT	–	–	–	–	–	•	WebSphere MQ GETWAIT wait time
WMQREQCT	WMQ Reqs	DFHDATA	A	395	WMQREQCT	–	–	–	–	–	•	Number of WebSphere MQ requests
X8CPU	X8 CPU	DFHTASK	S	271	X8CPUT	–	–	–	–	•	•	CICS X8 TCB CPU time
X9CPU	X9 CPU	DFHTASK	S	272	X9CPUT	–	–	–	–	•	•	User task X9 Mode CPU time

Cross-reference: CICS PA field name × CICS version

Chapter 25. Fields × forms, HDB templates

The following cross-reference table lists the CICS PA field names for CICS monitoring facility (CMF) performance class and transaction resource class data and shows the report forms and HDB templates to which they apply.

Some columns in the table require explanation:

CICS PA field name

The name used in report forms, HDB templates, and selection criteria (and their corresponding batch command operands FIELDS and SELECT).

A blank indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

Report form and HDB template

The report forms and HDB templates to which a field applies:
- • Yes, the field applies
- **S** Yes, the field applies and is an eligible sort field (in a report form) or key field (in an HDB template)
- **–** No, the field does not apply

Type Indicates the data type of the field:
- **A** 32-bit or 64-bit count
- **C** Character string
- **D** Time derived by CICS PA
- **P** Packed decimal integer
- **S** Clock
- **T** STCK time stamp
- **X** Count calculated by CICS PA

Length

The default length in the output report or data set.

Clock (S) fields have two components, each of length 8:
COUNT	Number of occurrences
TIME	Elapsed time in seconds with specified precision 0.0001 - 0.000001, default format *sss.thmi*

Time Stamp (T) fields vary in length (5 - 12) depending on the specified format:
TIMET	Time in the format *hh:mm:ss.thm*
TIMEM	Time in the format *hh:mm*
TIMES	Time in the format *hh:mm:ss*
DATE	Date in the format *mm/dd/yyyy*
DATEISO	Date in the format *yyyy-mm-dd*
DATEM	Date in the format *mm/dd*
DATEYR	Date in the format *mm/dd/yy*
DATETIM	Date and time in the format *yyyy-mm-dd hh:mm:ss*

Notes:

1. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of "CICSPA". These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).
2. The FILENAME and TSQNAME fields are only available when CMF transaction resource class data is being collected.

Cross-reference: fields × forms, HDB templates

3. The APPLTRAN and APPLPROG fields are only available when application programs invoke the application naming event monitoring points.

Table 18. Cross-reference: fields × forms, HDB templates

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
	DFHCBTS	C	202	52	–	–	–	–	–	BTS Root Activity identifier
	DFHCBTS	C	203	52	–	–	–	–	–	BTS Activity identifier
	DFHTASK	C	064	4	–	–	–	–	–	Task error flags
	DFHTASK	C	082	28	–	–	–	–	–	Transaction Group ID
	DFHTASK	C	132	8	–	–	–	–	–	Recovery UOW ID
	DFHTASK	C	190	16	–	–	–	–	–	RRMS/MVS unit-of-recovery ID (URID)
ABCODEC	DFHPROG	C	114	4	•	S	S	•	–	Current ABEND code
ABCODEO	DFHPROG	C	113	4	•	S	S	•	–	Original ABEND Code
ACCMETH	DFHTERM	A	165	4	•	S	–	•	–	Terminal Access Method
ACTVTYNM	DFHCBTS	C	204	16	•	S	–	•	–	BTS Activity name
ADABREQ	OMCICS	S	017	8	•	–	•	–	–	OMEGAMON monitored Adabas requests
ADABWARN	OMCICS	C	005	4	•	–	S	–	–	OMEGAMON Adabas Limit Warning
APPLID	CICSPA	C	903	8	•	S	S	S	S	CICS Generic APPLID
APPLPROG	DFHAPPL	C	001	8	•	S	S	•	S	Application naming Program
APPLRECS	CICSPA	A	002	8	•	•	•	•	•	Cross-System Application records
APPLTRAN	DFHAPPL	C	001	4	•	S	S	•	S	Application naming Tran ID
BAACDCCT	DFHCBTS	A	217	4	•	S	•	•	•	BTS Activity Data Containers requests
BAACQPCT	DFHCBTS	A	214	4	•	S	•	•	•	BTS Acquire Process/Activity requests
BADACTCT	DFHCBTS	A	209	4	•	S	•	•	•	BTS Define Activity requests
BADCPACT	DFHCBTS	A	213	4	•	S	•	•	•	BTS Cancel Process/Activity requests
BADFIECT	DFHCBTS	A	220	4	•	S	•	•	•	BTS Define-Input Event requests
BADPROCT	DFHCBTS	A	208	4	•	S	•	•	•	BTS Define Process requests
BALKPACT	DFHCBTS	A	207	4	•	S	•	•	•	BTS Link Process/Activity count
BAPRDCCT	DFHCBTS	A	216	4	•	S	•	•	•	BTS Process Data Containers requests
BARASYCT	DFHCBTS	A	206	4	•	S	•	•	•	BTS asynchronous Process/Activity count
BARATECT	DFHCBTS	A	219	4	•	S	•	•	•	BTS Retrieve-Reattach Event requests
BARMPACT	DFHCBTS	A	212	4	•	S	•	•	•	BTS Resume Process/Activity requests
BARSPACT	DFHCBTS	A	210	4	•	S	•	•	•	BTS Reset Process/Activity requests
BARSYNCT	DFHCBTS	A	205	4	•	S	•	•	•	BTS synchronous Process/Activity count
BASUPACT	DFHCBTS	A	211	4	•	S	•	•	•	BTS Suspend Process/Activity requests
BATIAECT	DFHCBTS	A	221	4	•	S	•	•	•	BTS TIMER Event requests
BATOTCCT	DFHCBTS	A	218	4	•	S	•	•	•	BTS Process/Activity Data Container requests
BATOTECT	DFHCBTS	A	222	4	•	S	•	•	•	BTS Event-related requests
BATOTPCT	DFHCBTS	A	215	4	•	S	•	•	•	BTS Total Process/Activity requests
BMSIN	DFHMAPP	A	051	4	•	S	•	•	•	BMS IN requests
BMSMAP	DFHMAPP	A	050	4	•	S	•	•	•	BMS MAP requests
BMSOUT	DFHMAPP	A	052	4	•	S	•	•	•	BMS OUT requests
BMSTOTAL	DFHMAPP	A	090	4	•	S	•	•	•	BMS Total requests
BRDGTRAN	DFHTASK	C	124	4	•	S	–	•	–	Bridge Listener Transaction ID
CALLWARN	OMCICS	C	013	4	•	–	S	–	–	OMEGAMON EXEC Calls Limit Warning
CBSRVRNM	DFHEJBS	C	311	4	•	S	S	S	S	CorbaServer name
CFCAPICT	DFHCICS	A	025	4	•	S	•	•	•	OO Foundation Class requests
CFDTSYNC	DFHSYNC	S	177	8	•	S	•	•	•	CF Data Table syncpoint wait time
CFDTWAIT	DFHFILE	S	176	8	•	S	•	•	•	CF Data Table access requests wait time
CHARIN1	DFHTERM	A	083	4	•	S	•	•	•	Terminal characters received count
CHARIN2	DFHTERM	A	085	4	•	S	•	•	•	LU6.1 characters received count
CHAROUT1	DFHTERM	A	084	4	•	S	•	•	•	Terminal characters sent count
CHAROUT2	DFHTERM	A	086	4	•	S	•	•	•	LU6.1 characters sent count
CHMODECT	DFHTASK	A	248	4	•	S	•	•	•	Change-TCB modes requests
CLIENTIP	DFHSOCK	C	244	16	•	S	–	•	–	Client IP or Telnet client IP address
CLIPPORT	DFHSOCK	A	330	4	•	S	–	•	–	Client IP Port Number

Table 18. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
		CMF field				Report form		HDB template		
COMMWAIT	CICSPA	D	906	8	•	S	–	•	–	Communications wait time
CPU	DFHTASK	S	008	8	•	S	•	•	•	CPU time
CPUWARN	OMCICS	C	009	4	•	–	S	–	–	OMEGAMON CPU Limit Warning
DB2CONWT	DFHDATA	S	188	8	•	S	•	•	•	DB2 Connection wait time
DB2RDYQW	DFHDATA	S	187	8	•	S	•	•	•	DB2 Thread wait time
DB2REQCT	DFHDATA	A	180	8	•	S	•	•	•	DB2 requests
DB2WAIT	DFHDATA	S	189	8	•	S	•	•	•	DB2 SQL/IFI wait time
DB2WARN	OMCICS	C	001	4	•	–	S	–	–	OMEGAMON DB2 Limit Warning
DBGETS	DBCTL	A	035	8	•	–	•	–	–	Number of Database Get calls issued
DBIOCALL	DBCTL	A	007	8	•	–	•	–	–	Number of Database I/Os
DBIOELAP	DBCTL	A	005	8	•	–	•	–	–	Elapsed time for Database I/O
DBUPDATE	DBCTL	A	036	8	•	–	•	–	–	Number of Database Update calls issued
DBWAITS	DBCTL	A	037	8	•	–	•	–	–	Number of Database waits
DCOMREQ	OMCICS	S	019	8	•	–	•	–	–	OMEGAMON monitored CA-Datacom requests
DCOMWARN	OMCICS	C	008	4	•	–	S	–	–	OMEGAMON CA-Datacom Limit Warning
DEDBBFRW	DBCTL	A	031	8	•	–	•	–	–	Number of waits for DEDB buffers
DEDBCALL	DBCTL	A	027	8	•	–	•	–	–	Number of DEDB calls
DEDBRDOP	DBCTL	A	028	8	•	–	•	–	–	Number of DEDB read operations
DHCREATE	DFHDOCH	A	226	4	•	S	•	•	•	Document Handler CREATE requests
DHDELETE	DFHDOCH	A	223	4	•	S	•	•	•	Document Handler DELETE requests
DHINSERT	DFHDOCH	A	227	4	•	S	•	•	•	Document Handler INSERT requests
DHRETRVE	DFHDOCH	A	229	4	•	S	•	•	•	Document Handler RETRIEVE requests
DHSET	DFHDOCH	A	228	4	•	S	•	•	•	Document Handler SET requests
DHTOTAL	DFHDOCH	A	230	4	•	S	•	•	•	Document Handler Total requests
DHTOTDCL	DFHDOCH	A	240	4	•	S	•	•	•	Total length of all documents created
DISPATCH	DFHTASK	S	007	8	•	S	•	•	•	Dispatch time
DISPWAIT	DFHTASK	S	102	8	•	S	•	•	•	Redispatch wait time
DLETCALL	DBCTL	A	015	8	•	–	•	–	–	Number of Database DLET calls issued
DLICALLS	DBCTL	A	017	8	•	–	•	–	–	Total DL/I Database calls
DLIWARN	OMCICS	C	002	4	•	–	S	–	–	OMEGAMON DLI Limit Warning
DPLRECS	CICSPA	A	005	8	•	•	•	•	•	Cross-System DPL records
DSAWARN	OMCICS	C	011	4	•	–	S	–	–	OMEGAMON DSA Limit Warning
DSCHMDLY	DFHTASK	S	247	8	•	S	•	•	•	Redispatch wait time caused by change-TCB mode
DSMMSCWT	DFHTASK	S	279	8	•	S	•	•	•	DS storage constraint wait time
DSPDELAY	DFHTASK	S	125	8	•	S	•	•	•	First dispatch wait time
DSTCBHWM	DFHTASK	A	252	4	•	S	•	•	•	CICS Dispatcher TCB HWM
DSTCBMWT	DFHTASK	S	268	8	•	S	•	•	•	Dispatcher TCB Mismatch wait time
EDSAWARN	OMCICS	C	012	4	•	–	S	–	–	OMEGAMON EDSA Limit Warning
EJBACTIV	DFHEJBS	A	312	4	•	S	•	•	•	Number of Bean State Activation requests
EJBCREAT	DFHEJBS	A	314	4	•	S	•	•	•	Number of Bean Creation requests
EJBMETHD	DFHEJBS	A	316	4	•	S	•	•	•	Number of EJB Method Calls
EJBPASIV	DFHEJBS	A	313	4	•	S	•	•	•	Number of Bean State Passivation requests
EJBREMOV	DFHEJBS	A	315	4	•	S	•	•	•	Number of Bean Removal requests
EJBTOTAL	DFHEJBS	A	317	4	•	S	•	•	•	Total Number of EJB requests
ELAPWARN	OMCICS	C	010	4	•	–	S	–	–	OMEGAMON Elapsed Time Limit Warning
ENQDELAY	DFHTASK	S	129	8	•	S	•	•	•	Local Enqueue wait time
ERRFLAGS	DFHTASK	A	064	4	•	•	–	•	–	Task error flags
EXCLDEQS	DBCTL	A	026	8	•	–	•	–	–	Number of Exclusive Dequeues
EXCLENQS	DBCTL	A	024	8	•	–	•	–	–	Number of Exclusive Enqueues
EXCLENQW	DBCTL	A	025	8	•	–	•	–	–	Number of waits on Exclusive Enqueues
EXWAIT	DFHCICS	S	103	8	•	S	•	•	•	Exception Conditions wait time
FCADD	DFHFILE	A	039	4	•	S	•	•	•	File ADD requests
FCAMCT	DFHFILE	A	070	4	•	S	•	•	•	File access-method requests
FCBROWSE	DFHFILE	A	038	4	•	S	•	•	•	File Browse requests

Cross-reference: fields × forms, HDB templates

Table 18. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
FCDELETE	DFHFILE	A	040	4	•	S	•	•	•	File DELETE requests
FCGET	DFHFILE	A	036	4	•	S	•	•	•	File GET requests
FCPUT	DFHFILE	A	037	4	•	S	•	•	•	File PUT requests
FCTOTAL	DFHFILE	A	093	4	•	S	•	•	•	File Control requests
FCTY	DFHTASK	C	163	4	•	S	–	•	–	Transaction Facility name
FCTYTYPE	DFHTASK	A	164	4	•	S	–	•	–	Transaction facility type
FCWAIT	DFHFILE	S	063	8	•	S	•	•	•	File I/O wait time
FILENAME	CICSPA	C	916	8	–	–	–	–	–	File name
FUNCSHIP	CICSPA	A	004	8	•	•	•	•	•	Cross-System Function Shipping records
GHNCALL	DBCTL	A	012	8	•	–	•	–	–	Number of Database GHN calls issued
GHNPCALL	DBCTL	A	013	8	•	–	•	–	–	Number of Database GHNP calls issued
GHUCALL	DBCTL	A	011	8	•	–	•	–	–	Number of Database GHU calls issued
GIVEUPWT	DFHTASK	S	184	8	•	S	•	•	•	Give up control wait time
GNCALL	DBCTL	A	009	8	•	–	•	–	–	Number of Database GN calls issued
GNPCALL	DBCTL	A	010	8	•	–	•	–	–	Number of Database GNP calls issued
GNQDELAY	DFHTASK	S	123	8	•	S	•	•	•	Global Enqueue wait time
GUCALL	DBCTL	A	008	8	•	–	•	–	–	Number of Database GU calls issued
ICDELAY	DFHTASK	S	183	8	•	S	•	•	•	Interval Control (IC) wait time
ICPUT	DFHTASK	A	059	4	•	S	•	•	•	Interval Control START or INITIATE requests
ICSTACCT	DFHTASK	A	065	8	•	S	•	•	•	Local IC START requests with CHANNEL option
ICSTACDL	DFHTASK	A	345	8	•	S	•	•	•	Container data len for Local IC START w/ CHANNEL
ICSTRCCT	DFHTASK	A	346	8	•	S	•	•	•	Remote IC START requests with CHANNEL option
ICSTRCDL	DFHTASK	A	347	8	•	S	•	•	•	Container data len for Remot IC START w/ CHANNEL
ICTOTAL	DFHTASK	A	066	4	•	S	•	•	•	Interval Control requests
IDMSREQ	OMCICS	S	016	8	•	–	•	–	–	OMEGAMON monitored CA-IDMS requests
IDMSWARN	OMCICS	C	006	4	•	–	S	–	–	OMEGAMON CA-IDMS Limit Warning
IMSREQCT	DFHDATA	A	179	4	•	S	•	•	•	IMS (DBCTL) requests
IMSWAIT	DFHDATA	S	186	8	•	S	•	•	•	IMS (DBCTL) wait time
INTCWAIT	DBCTL	A	003	8	•	–	•	–	–	Elapsed wait time for Intent Conflict
IOWAIT	CICSPA	D	907	8	•	S	–	•	–	Total IO wait time
IRESP	CICSPA	D	908	8	•	S	•	–	•	Transaction internal response time
IRWAIT	DFHTERM	S	100	8	•	S	•	•	•	MRO link wait time
ISALLOC	DFHSOCK	A	288	4	•	S	•	•	•	Allocate Session requests for sessions on IP
ISIPICNM	DFHSOCK	C	305	8	•	S	S	•	S	Name of IPCONN definition that attached the task
ISRTCALL	DBCTL	A	014	8	•	–	•	–	–	Number of Database ISRT calls issued
ISWAIT	DFHSOCK	S	300	8	•	S	•	•	•	IPCONN link wait time
J8CPU	DFHTASK	S	260	8	•	S	•	•	•	CICS J8 TCB CPU time
J9CPU	DFHTASK	S	267	8	•	S	•	•	•	User task J9 Mode CPU time
JCWAIT	DFHJOUR	S	010	8	•	S	•	•	•	Journal I/O wait time
JNLPUT	DFHJOUR	A	058	4	•	S	•	•	•	Journal write requests
JOBNAME	CICSPA	C	905	8	•	S	S	•	S	Job Name
JVMITIME	DFHTASK	S	273	8	•	S	•	•	•	JVM initialize elapsed time
JVMMTIME	CICSPA	D	910	8	•	S	•	•	•	JVM Method time
JVMRTIME	DFHTASK	S	275	8	•	S	•	•	•	JVM reset elapsed time
JVMSUSP	DFHTASK	S	254	8	•	S	•	•	•	JVM suspend time
JVMTIME	DFHTASK	S	253	8	•	S	•	•	•	JVM elapsed time
KY8CPU	DFHTASK	S	263	8	•	S	•	•	•	CICS Key 8 TCB CPU time
KY8DISPT	DFHTASK	S	262	8	•	S	•	•	•	CICS Key 8 TCB dispatch time
KY9CPU	DFHTASK	S	265	8	•	S	•	•	•	User task Key 9 Mode CPU time
KY9DISPT	DFHTASK	S	264	8	•	S	•	•	•	User task Key 9 Mode Dispatch time
L8CPU	DFHTASK	S	259	8	•	S	•	•	•	CICS L8 TCB CPU time
L9CPU	DFHTASK	S	266	8	•	S	•	•	•	User task L9 CPU time
LOCKDLAY	DFHTASK	S	128	8	•	S	•	•	•	Lock Manager (LM) wait time
LOGWRITE	DFHJOUR	A	172	4	•	S	•	•	•	Log Stream write requests

Table 18. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
	CMF field				Report form			HDB template		
LU61WAIT	DFHTERM	S	133	8	•	S	•	•	•	LU6.1 wait time
LU62WAIT	DFHTERM	S	134	8	•	S	•	•	•	LU6.2 wait time
LUNAME	DFHTERM	C	111	8	•	S	–	•	–	VTAM logical unit name
MAXHTDLY	DFHTASK	S	278	8	•	S	•	•	•	Maximum Hot-Pooling TCB delay time
MAXJTDLY	DFHTASK	S	277	8	•	S	•	•	•	Maximum JVM TCB delay time
MAXOTDLY	DFHTASK	S	250	8	•	S	•	•	•	Maximum Open TCB delay time
MAXSTDLY	DFHTASK	S	281	8	•	S	•	•	•	Maximum SSL TCB delay time
MAXXTDLY	DFHTASK	S	282	8	•	S	•	•	•	Maximum XPLink TCB delay time
MQWARN	OMCICS	C	004	4	•	–	S	–	–	OMEGAMON MQ Limit Warning
MSCPU	DFHTASK	S	258	8	•	S	•	•	•	CICS TCBs CPU time
MSDISPT	DFHTASK	S	257	8	•	S	•	•	•	CICS TCBs dispatch time
MSGIN1	DFHTERM	A	034	4	•	S	•	•	•	Messages received count
MSGIN2	DFHTERM	A	067	4	•	S	•	•	•	Messages received from LU6.1
MSGOUT1	DFHTERM	A	035	4	•	S	•	•	•	Messages sent count
MSGOUT2	DFHTERM	A	068	4	•	S	•	•	•	Messages sent to LU6.1
MVSID	CICSPA	C	904	4	•	S	S	S	S	MVS SMF ID
MXTDELAY	DFHTASK	S	127	8	•	S	•	•	•	First dispatch MXT wait time
NATURE	DFHTERM	A	165	4	•	S	–	•	–	Transaction
NETID	DFHTERM	C	197	8	•	S	–	•	–	VTAM LUALIAS Network ID
NETNAME	DFHTASK	C	097	20	•	S	–	•	–	Originating System VTAM network name
NETUOWSX	DFHTASK	C	098	8	–	–	–	–	–	Network UOW ID
OAPPLID	DFHCICS	C	360	8	•	S	S	•	S	Originating CICS APPLID
OCLINTIP	DFHCICS	C	368	16	•	S	–	•	–	Originating Client or Telnet IP address
OCLIPORT	DFHCICS	A	369	4	•	S	–	•	–	Originating Client IP Port Number
OFCTY	DFHCICS	C	371	8	•	S	S	•	S	Originating Transaction Facility name
OFCTYTYP	DFHCICS	A	370	4	•	S	–	•	–	Originating Transaction Facility Type
OMEGWORK	OMCICS	C	015	32	•	–	S	–	–	OMEGAMON User work area
ONETWKID	DFHCICS	C	359	8	•	S	S	•	S	Originating Network ID
OORIGIN	DFHCICS	C	370	8	•	S	S	•	–	Originating Transaction Origin type
OPORT	DFHCICS	A	367	4	•	S	–	•	–	Originating TCP/IP Port Number
ORIGIN	DFHTASK	C	164	8	•	S	S	•	–	Transaction origin type
OSOWAIT	DFHSOCK	S	299	8	•	S	•	•	•	Outbound Socket I/O Wait Time
OSTART	DFHCICS	T	361	8	•	S	S	•	S	Originating Task start time
OTASKNO	DFHCICS	P	362	4	•	S	–	•	–	Originating Transaction number
OTCPSRVC	DFHCICS	C	366	8	•	S	S	•	S	Originating TCP/IP Service Name
OTRAN	DFHCICS	C	363	4	•	S	S	•	S	Originating Transaction identifier
OTRANFLG	DFHCICS	A	370	16	•	S	–	•	–	Originating Transaction flags
OTRANTYP	DFHCICS	C	370	8	•	•	–	•	–	Originating Transaction type
OTSID	DFHTASK	C	194	128	•	•	–	•	–	OTS Transaction ID
OTSINDWT	DFHSYNC	S	199	8	•	S	•	•	•	OTS Indoubt Wait time
OUSERCOR	DFHCICS	C	365	64	•	S	S	•	S	Originating User Correlator
OUSERID	DFHCICS	C	364	8	•	S	S	•	S	Originating User ID
OVFLBFRU	DBCTL	A	029	8	•	–	•	–	–	Number of Overflow Buffers used
PC24BHWM	DFHSTOR	A	108	4	•	S	•	•	•	Program Storage HWM below 16MB
PC24CHWM	DFHSTOR	A	143	4	•	S	•	•	•	Program Storage (CDSA) HWM below 16MB
PC24RHWM	DFHSTOR	A	162	4	•	S	•	•	•	Program Storage (RDSA) HWM below 16MB
PC24SHWM	DFHSTOR	A	160	4	•	S	•	•	•	Program Storage (SDSA) HWM below 16MB
PC31AHWM	DFHSTOR	A	139	4	•	S	•	•	•	Program Storage HWM above 16MB
PC31CHWM	DFHSTOR	A	142	4	•	S	•	•	•	Program Storage (ECDSA) HWM above 16MB
PC31RHWM	DFHSTOR	A	122	4	•	S	•	•	•	Program Storage (ERDSA) HWM above 16MB
PC31SHWM	DFHSTOR	A	161	4	•	S	•	•	•	Program Storage (ESDSA) HWM above 16MB
PCDLCRDL	DFHPROG	A	287	8	•	S	•	•	•	Container data length for DPL RETURN w/ CHANNEL
PCDLCSDL	DFHPROG	A	286	8	•	S	•	•	•	Container data length for DPL reqs with CHANNEL
PCDPL	DFHPROG	A	073	4	•	S	•	•	•	Distributed Program Link (DPL) requests

Cross-reference: fields × forms, HDB templates

Table 18. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
	CMF field				Report form			HDB template		
PCDPLCCT	DFHPROG	A	308	8	•	S	•	•	•	DPL requests with CHANNEL option
PCLINK	DFHPROG	A	055	4	•	S	•	•	•	Program LINK requests
PCLNKCCT	DFHPROG	A	306	8	•	S	•	•	•	LINK requests with CHANNEL option
PCLOAD	DFHPROG	A	057	4	•	S	•	•	•	Program LOAD requests
PCLOADTM	DFHPROG	S	115	8	•	S	•	•	•	Program Library wait time
PCLURM	DFHPROG	A	072	4	•	S	•	•	•	Program LINK URM requests
PCRTNCCT	DFHPROG	A	309	8	•	S	•	•	•	Program RETURN requests with CHANNEL option
PCRTNCDL	DFHPROG	A	310	8	•	S	•	•	•	Container data length for RETURN with CHANNEL
PCSTGHWM	DFHSTOR	A	087	4	•	S	•	•	•	Program Storage HWM above and below 16MB
PCXCLCCT	DFHPROG	A	307	8	•	S	•	•	•	XCTL requests with CHANNEL option
PCXCTL	DFHPROG	A	056	4	•	S	•	•	•	Program XCTL requests
PGBRWCCT	DFHCHNL	A	322	8	•	S	•	•	•	BROWSE CHANNEL CONTAINER requests
PGCRECCT	DFHCHNL	A	328	8	•	S	•	•	•	Number of Containers created
PGCSTHWM	DFHCHNL	A	329	4	•	S	–	•	–	Maximum Container Storage allocated to task
PGGETCCT	DFHCHNL	A	323	8	•	S	•	•	•	GET CHANNEL CONTAINER requests
PGGETCDL	DFHCHNL	A	326	8	•	S	•	•	•	GET CHANNEL CONTAINER data length
PGMOVCCT	DFHCHNL	A	325	8	•	S	•	•	•	MOVE CHANNEL CONTAINER requests
PGPUTCCT	DFHCHNL	A	324	8	•	S	•	•	•	PUT CHANNEL CONTAINER requests
PGPUTCDL	DFHCHNL	A	327	8	•	S	•	•	•	PUT CHANNEL CONTAINER data length
PGTOTCCT	DFHCHNL	A	321	8	•	S	•	•	•	Total number of CHANNEL CONTAINER requests
PILOCKEL	DBCTL	A	006	8	•	–	•	–	–	Elapsed time for PI Locking
POOLWAIT	DBCTL	A	002	8	•	–	•	–	–	Elapsed wait time for Pool Space
PORT	DFHSOCK	A	246	8	•	S	–	•	–	TCP/IP Port Number
PRCSNAME	DFHCBTS	C	200	36	•	•	–	•	–	BTS Process name
PRCSTYPE	DFHCBTS	C	201	8	•	•	S	•	S	BTS Process type
PROGRAM	DFHPROG	C	071	8	•	S	S	S	S	Program name
PSBNAME	DBCTL	C	001	8	•	–	S	–	–	PSB Name
PTPWAIT	DFHTASK	S	285	8	•	S	•	•	•	3270 Bridge Partner wait time
QRCPU	DFHTASK	S	256	8	•	S	•	•	•	CICS QR TCB CPU time
QRDISPT	DFHTASK	S	255	8	•	S	•	•	•	CICS QR TCB dispatch time
QRMODDLY	DFHTASK	S	249	8	•	S	•	•	•	CICS QR TCB redispatch wait time
RECCOUNT	DFHCICS	A	131	4	•	•	•	•	•	Task Performance record count
RELEASE	CICSPA	C	909	4	•	S	S	•	S	CICS release
REPLCALL	DBCTL	A	016	8	•	–	•	–	–	Number of Database REPL calls issued
RESPONSE	CICSPA	D	901	8	•	S	•	•	•	Transaction response time
RLSCPU	DFHFILE	S	175	8	•	S	•	•	•	RLS File Request CPU (SRB) time
RLSWAIT	DFHFILE	S	174	8	•	S	•	•	•	RLS File I/O wait time
RLUNAME	DFHTERM	C	198	8	•	S	–	•	–	VTAM LUALIAS Logical Unit name
RMICPSM	DFHRMI	S	007	8	•	S	•	•	•	RMI elapsed time for CICSPlex SM requests
RMIDB2	DFHRMI	S	003	8	•	S	•	•	•	RMI elapsed time for DB2 requests
RMIDBCTL	DFHRMI	S	004	8	•	S	•	•	•	RMI elapsed time for DBCTL requests
RMIEXDLI	DFHRMI	S	005	8	•	S	•	•	•	RMI elapsed time for EXEC DLI requests
RMIMQM	DFHRMI	S	006	8	•	S	•	•	•	RMI elapsed time for WebSphere MQ requests
RMIOTHER	DFHRMI	S	002	8	•	S	•	•	•	RMI other elapsed time
RMIOTIME	CICSPA	D	911	8	•	S	•	•	•	Resource Manager Interface (RMI) other time
RMISUSP	DFHTASK	S	171	8	•	S	•	•	•	Resource Manager Interface (RMI) suspend time
RMITCPIP	DFHRMI	S	008	8	•	S	•	•	•	RMI elapsed time for TCP/IP socket requests
RMITIME	DFHTASK	S	170	8	•	S	•	•	•	Resource Manager Interface (RMI) elapsed time
RMITOTAL	DFHRMI	S	001	8	•	S	•	•	•	RMI total elapsed time
ROCPU	DFHTASK	S	270	8	•	S	•	•	•	CICS RO TCB CPU time
RODISPT	DFHTASK	S	269	8	•	S	•	•	•	CICS RO TCB dispatch time
RPTCLASS	DFHCICS	C	168	8	•	S	S	•	S	WLM Report Class
RQPWAIT	DFHTASK	S	193	8	•	S	•	•	•	Request Processor Wait Time
RQRWAIT	DFHTASK	S	192	8	•	S	•	•	•	Request Receiver Wait Time

| Table 18. Cross-reference: fields × forms, HDB templates (continued)

CMF field					Report form			HDB template		Description
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	
RRMSWAIT	DFHTASK	S	191	8	•	S	•	•	•	Resource Recovery Services indoubt wait time
RSYSID	DFHCICS	C	130	4	•	S	S	•	S	Remote System ID
RTYPE	DFHCICS	C	112	4	•	•	–	•	–	Performance record type
RUNTRWTT	DFHTASK	S	195	8	•	S	•	•	•	BTS run Process/Activity wait time
S8CPU	DFHTASK	S	261	8	•	S	•	•	•	CICS S8 TCB CPU time
SC24CGET	DFHSTOR	A	117	4	•	S	•	•	•	CDSA GETMAINs below 16MB
SC24CHWM	DFHSTOR	A	116	4	•	S	•	•	•	CDSA HWM below 16MB
SC24COCC	DFHSTOR	A	118	8	•	S	•	•	•	CDSA Storage Occupancy below 16MB
SC24FSHR	DFHSTOR	A	146	4	•	S	•	•	•	CDSA/SDSA storage FREEMAINed below 16MB
SC24GSHR	DFHSTOR	A	145	4	•	S	•	•	•	CDSA/SDSA storage GETMAINed below 16MB
SC24SGET	DFHSTOR	A	144	4	•	S	•	•	•	CDSA/SDSA GETMAINs below 16MB
SC24UGET	DFHSTOR	A	054	4	•	S	•	•	•	UDSA GETMAINs below 16MB
SC24UHWM	DFHSTOR	A	033	4	•	S	•	•	•	UDSA HWM below 16MB
SC24UOCC	DFHSTOR	A	095	8	•	S	•	•	•	UDSA Storage Occupancy below 16MB
SC31CGET	DFHSTOR	A	120	4	•	S	•	•	•	ECDSA GETMAINs above 16MB
SC31CHWM	DFHSTOR	A	119	4	•	S	•	•	•	ECDSA HWM above 16MB
SC31COCC	DFHSTOR	A	121	8	•	S	•	•	•	ECDSA Storage Occupancy above 16MB
SC31FSHR	DFHSTOR	A	149	4	•	S	•	•	•	ECDSA/ESDSA storage FREEMAINed above 16MB
SC31GSHR	DFHSTOR	A	148	4	•	S	•	•	•	ECDSA/ESDSA storage GETMAINed above 16MB
SC31SGET	DFHSTOR	A	147	4	•	S	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
SC31UGET	DFHSTOR	A	105	4	•	S	•	•	•	EUDSA GETMAINs above 16MB
SC31UHWM	DFHSTOR	A	106	4	•	S	•	•	•	EUDSA HWM above 16MB
SC31UOCC	DFHSTOR	A	107	8	•	S	•	•	•	EUDSA Storage Occupancy above 16MB
SCHEDEND	DBCTL	T	034	8	•	–	–	–	–	IMS Schedule end time
SCHEDSTA	DBCTL	T	033	8	•	–	–	–	–	IMS Schedule start time
SCHTELAP	DBCTL	A	004	8	•	–	•	–	–	Elapsed time for Schedule Process
SESSTYPE	DFHTERM	A	165	4	•	•	–	•	–	Terminal session type
SOBYDECT	DFHSOCK	A	243	4	•	S	•	•	•	Secure Socket bytes decrypted count
SOBYENCT	DFHSOCK	A	242	4	•	S	•	•	•	Secure Socket bytes encrypted count
SOCHRIN	DFHSOCK	A	295	8	•	S	•	•	•	Outbound Sockets characters received count
SOCHRIN1	DFHSOCK	A	302	8	•	S	•	•	•	Inbound Sockets characters received count
SOCHROU1	DFHSOCK	A	304	8	•	S	•	•	•	Inbound Sockets characters sent count
SOCHROUT	DFHSOCK	A	297	8	•	S	•	•	•	Outbound Sockets characters sent count
SOCNPSCT	DFHSOCK	A	290	8	•	S	•	•	•	Create Non-Persistent Outbound Socket reqs
SOCPSCT	DFHSOCK	A	291	8	•	S	•	•	•	Create Persistent Outbound Socket requests
SOEXTRCT	DFHSOCK	A	289	8	•	S	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
SOMSGIN1	DFHSOCK	A	301	8	•	S	•	•	•	Inbound Sockets RECEIVE requests
SOMSGOU1	DFHSOCK	A	303	8	•	S	•	•	•	Inbound Sockets SEND requests
SONPSHWM	DFHSOCK	A	292	8	•	S	•	•	•	Non-Persistent Outbound Socket HWM
SOPSHWM	DFHSOCK	A	293	8	•	S	•	•	•	Persistent Outbound Socket HWM
SORCV	DFHSOCK	A	294	8	•	S	•	•	•	Outbound Sockets RECEIVE requests
SOSEND	DFHSOCK	A	296	8	•	S	•	•	•	Outbound Sockets SEND requests
SOTOTAL	DFHSOCK	A	298	8	•	S	•	•	•	Socket Total requests
SOWAIT	DFHSOCK	S	241	8	•	S	•	•	•	Inbound Socket I/O wait time
SRVCLASS	DFHCICS	C	167	8	•	S	S	•	S	WLM Service Class
START	DFHCICS	T	005	8	•	S	S	S	S	Task start time
STOP	DFHCICS	T	006	8	•	S	S	S	S	Task stop time
STYPE	DFHTASK	C	004	2	•	S	–	•	–	Transaction start type
SUPRREQ	OMCICS	S	018	8	•	–	•	–	–	OMEGAMON monitored Supra requests
SUPRWARN	OMCICS	C	007	4	•	–	S	–	–	OMEGAMON Supra Limit Warning
SUSPEND	DFHTASK	S	014	8	•	S	•	•	•	Suspend time
SYNCDLY	DFHSYNC	S	196	8	•	S	•	•	•	SYNCPOINT parent request wait time
SYNCPT	DFHSYNC	A	060	4	•	S	•	•	•	SYNCPOINT requests
SYNCTIME	DFHSYNC	S	173	8	•	S	•	•	•	SYNCPOINT processing time

Cross-reference: fields × forms, HDB templates

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
						Report form		HDB template		
SZALLCTO	DFHFEPI	A	157	4	•	S	•	•	•	Allocate conversation time-out count
SZALLOC	DFHFEPI	A	150	4	•	S	•	•	•	Conversations allocated count
SZCHRIN	DFHFEPI	A	155	4	•	S	•	•	•	FEPI characters received count
SZCHROUT	DFHFEPI	A	154	4	•	S	•	•	•	FEPI characters sent count
SZRCV	DFHFEPI	A	151	4	•	S	•	•	•	FEPI RECEIVE requests
SZRCVTO	DFHFEPI	A	158	4	•	S	•	•	•	Receive Data time-out count
SZSEND	DFHFEPI	A	152	4	•	S	•	•	•	FEPI SEND requests
SZSTART	DFHFEPI	A	153	4	•	S	•	•	•	FEPI START requests
SZTOTAL	DFHFEPI	A	159	4	•	S	•	•	•	FEPI API and SPI requests
SZWAIT	DFHFEPI	S	156	8	•	S	•	•	•	FEPI services wait time
TASKCNT	CICSPA	X	902	4	–	–	•	–	•	Total Task count
TASKNO	DFHTASK	P	031	4	•	S	–	•	–	Transaction identification number
TASKTCNT	CICSPA	X	914	4	–	–	•	–	•	Total Task Termination count
TCALLOC	DFHTERM	A	069	4	•	S	•	•	•	TCTTE ALLOCATE requests
TCBATTCT	DFHTASK	A	251	8	•	S	•	•	•	TCBs attached count
TCC62IN2	DFHTERM	A	137	4	•	S	•	•	•	LU6.2 characters received count
TCC62OU2	DFHTERM	A	138	4	•	S	•	•	•	LU6.2 characters sent count
TCLASSNM	DFHTASK	C	166	8	•	S	S	•	S	Transaction Class name
TCLDELAY	DFHTASK	S	126	8	•	S	•	•	•	First dispatch TCLSNAME wait time
TCM62IN2	DFHTERM	A	135	4	•	S	•	•	•	LU6.2 messages received count
TCM62OU2	DFHTERM	A	136	4	•	S	•	•	•	LU6.2 messages sent count
TCPSRVCE	DFHSOCK	C	245	8	•	S	S	•	S	TCP/IP Service Name
TCWAIT	DFHTERM	S	009	8	•	S	•	•	•	Terminal wait for input time
TDGET	DFHDEST	A	041	4	•	S	•	•	•	Transient data GET requests
TDPURGE	DFHDEST	A	043	4	•	S	•	•	•	Transient data PURGE requests
TDPUT	DFHDEST	A	042	4	•	S	•	•	•	Transient data PUT requests
TDTOTAL	DFHDEST	A	091	4	•	S	•	•	•	Transient data Total requests
TDWAIT	DFHDEST	S	101	8	•	S	•	•	•	VSAM transient data I/O wait time
TERM	DFHTERM	C	002	4	•	S	S	•	S	Terminal ID
TERMCNNM	DFHTERM	C	169	4	•	S	–	•	–	Terminal session Connection name
TERMCODE	DFHTERM	A	165	4	•	•	–	•	–	Terminal Device Type
TERMINFO	DFHTERM	A	165	4	•	•	–	•	–	Terminal information
TESTDEQS	DBCTL	A	020	8	•	–	•	–	–	Number of Test Dequeues
TESTENQS	DBCTL	A	018	8	•	–	•	–	–	Number of Test Enqueues
TESTENQW	DBCTL	A	019	8	•	–	•	–	–	Number of waits on Test Enqueues
THREDCPU	DBCTL	A	032	8	•	–	•	–	–	Thread TCB CPU time
TOTCPU	CICSPA	D	918	8	•	S	•	•	•	Total Task CPU Time
TOTRECS	CICSPA	A	001	8	•	•	•	•	•	Cross-System Total record count
TRAN	DFHTASK	C	001	4	•	S	S	S	S	Transaction identifier
TRANFLAG	DFHTASK	A	164	16	•	•	–	•	–	Transaction flags
TRANPRTY	DFHTASK	A	109	4	•	S	–	•	–	Transaction priority
TRANROUT	CICSPA	A	003	8	•	•	•	•	•	Cross-System Transaction Routing records
TRANTYPE	DFHTASK	C	164	8	•	•	–	•	–	Transaction type
TSGET	DFHTEMP	A	044	4	•	S	•	•	•	Temporary Storage GET requests
TSPUTAUX	DFHTEMP	A	046	4	•	S	•	•	•	Auxiliary TS PUT requests
TSPUTMCT	DFHTEMP	A	047	4	•	S	•	•	•	Main TS PUT requests
TSQNAME	CICSPA	C	917	8	–	–	–	–	–	Temporary Storage Queue Name
TSSHWAIT	DFHTEMP	S	178	8	•	S	•	•	•	Asynchronous Shared TS wait time
TSTOTAL	DFHTEMP	A	092	4	•	S	•	•	•	TS Total requests
TSWAIT	DFHTEMP	S	011	8	•	S	•	•	•	VSAM TS I/O wait time
UE1WARN	OMCICS	C	014	4	•	–	S	–	–	OMEGAMON User Event Limit Warning
UOWCONTS	DBCTL	A	030	8	•	–	•	–	–	Number of UOW Contentions
UOWID	CICSPA	C	912	12	•	•	–	•	–	Network UOW ID
UOWSEQ	CICSPA	C	913	5	•	•	–	•	–	Network UOW Sequence Number

Table 18. Cross-reference: fields × forms, HDB templates (continued)

CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
	CMF field				Report form			HDB template		
UPDTDEQS	DBCTL	A	023	8	•	–	•	–	–	Number of Update Dequeues
UPDTENQS	DBCTL	A	021	8	•	–	•	–	–	Number of Update Enqueues
UPDTENQW	DBCTL	A	022	8	•	–	•	–	–	Number of waits on Update Enqueues
USERID	DFHCICS	C	089	8	•	S	S	S	S	User ID
USREVNT	OMCICS	S	020	8	•	–	•	–	–	OMEGAMON User defined events
VSAMWARN	OMCICS	C	003	4	•	–	S	–	–	OMEGAMON VSAM Limit warning
WAITEVENT	DFHTASK	S	182	8	•	•	•	•	•	CICS ECB wait time
WAITEXT	DFHTASK	S	181	8	•	S	•	•	•	External ECB wait time
WBBROWSE	DFHWEBB	A	239	8	•	S	•	•	•	Web Browse requests
WBBRWOCT	DFHWEBB	A	338	8	•	S	•	•	•	CICS Web Support BROWSE HTTPHEADER requests
WBCHRIN	DFHWEBB	A	232	4	•	S	•	•	•	Web characters received count
WBCHRIN1	DFHWEBB	A	334	8	•	S	•	•	•	CICS Web Support RECEIVE and CONVERSE chars
WBCHROU1	DFHWEBB	A	336	8	•	S	•	•	•	CICS Web Support SEND and CONVERSE chars
WBCHROUT	DFHWEBB	A	234	4	•	S	•	•	•	Web characters sent count
WBEXTRCT	DFHWEBB	A	238	8	•	S	•	•	•	Web EXTRACT requests
WBIWBSCT	DFHWEBB	A	340	8	•	S	•	•	•	CICS INVOKE WEBSERVICE requests
WBPARSCT	DFHWEBB	A	337	8	•	S	•	•	•	CICS Web Support PARSE URL requests
WBRCV	DFHWEBB	A	231	4	•	S	•	•	•	Web RECEIVE requests
WBRCVIN1	DFHWEBB	A	333	8	•	S	•	•	•	CICS Web Support RECEIVE and CONVERSE requests
WBREAD	DFHWEBB	A	224	8	•	S	•	•	•	Web READ requests
WBREDOCT	DFHWEBB	A	331	8	•	S	•	•	•	CICS Web Support READ HTTPHEADER requests
WBREPRCT	DFHWEBB	A	236	4	•	S	•	•	•	Web Temporary Storage Repository read requests
WBREPRDL	DFHWEBB	A	341	8	•	S	•	•	•	Repository Read data length
WBREPWCT	DFHWEBB	A	237	4	•	S	•	•	•	Web Temporary Storage Repository write requests
WBREPWDL	DFHWEBB	A	342	8	•	S	•	•	•	Repository Write data length
WBSEND	DFHWEBB	A	233	4	•	S	•	•	•	Web SEND requests
WBSNDOU1	DFHWEBB	A	335	8	•	S	•	•	•	CICS Web Support SEND and CONVERSE requests
WBTOTAL	DFHWEBB	A	235	4	•	S	•	•	•	Web Total requests
WBWRITE	DFHWEBB	A	225	8	•	S	•	•	•	Web WRITE requests
WBWRTOCT	DFHWEBB	A	332	8	•	S	•	•	•	CICS Web Support WRITE HTTPHEADER requests
WMQGETWT	DFHDATA	S	396	8	•	S	•	•	•	WebSphere MQ GETWAIT wait time
WMQREQCT	DFHDATA	A	395	4	•	S	•	•	•	Number of WebSphere MQ requests
X8CPU	DFHTASK	S	271	8	•	S	•	•	•	CICS X8 TCB CPU time
X9CPU	DFHTASK	S	272	8	•	S	•	•	•	User task X9 Mode CPU time

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Bibliography

Additional information can be found in the following publications.

Other CICS Performance Analyzer books

CICS Performance Analyzer for z/OS Report Reference, SC34-6800
CICS Performance Analyzer for z/OS Program Directory, GI10-2570

Books from related libraries

You may find the following publications useful when using CICS Performance Analyzer to analyze and tune the performance of your CICS systems.

CICS Transaction Server for z/OS Version 3

CICS System Definition Guide, SC34-6428
CICS Customization Guide, SC34-6429
CICS Resource Definition Guide, SC34-6430
CICS Operations and Utilities Guide, SC34-6431
CICS Supplied Transactions, SC34-6432
CICS Application Programming Guide, SC34-6433
CICS Application Programming Reference, SC34-6434
CICS System Programming Reference, SC34-6435
CICS Front End Programming Interface User's Guide, SC34-6436
CICS Business Transaction Services, SC34-6439
CICS Problem Determination Guide, SC34-6441
CICS External Interfaces Guide, SC34-6449
CICS Internet Guide, SC34-6450
CICS Performance Guide, SC34-6452
CICS DB2 Guide, SC34-6457
CICS Family: Interproduct Communication, SC34-6473
CICS Family: Communicating from CICS on System/390, SC34-6874

CICS Transaction Server for z/OS Version 2

CICS System Definition Guide, SC34-6226
CICS Customization Guide, SC34-6227
CICS Resource Definition Guide, SC34-6228
CICS Operations and Utilities Guide, SC34-6229
CICS Supplied Transactions, SC34-6230
CICS System Programming Reference, SC34-6233
CICS Problem Determination Guide, SC34-6239
CICS Performance Guide, SC34-6247
CICS DB2 Guide, SC34-6252

CICS Transaction Server for OS/390

CICS System Definition Guide, SC33-1682
CICS Resource Definition Guide, SC33-1684
CICS Operations and Utilities Guide, SC33-1685
CICS Supplied Transactions, SC33-1686
CICS System Programming Reference, SC33-1689
CICS Performance Guide, SC33-1699
CICS DB2 Guide, SC33-1939

IMS Performance Analyzer for z/OS

IMS Performance Analyzer User's Guide, SC27-0912
IMS Performance Analyzer Report Analysis, SC27-0913

z/OS

z/OS MVS System Management Facilities (SMF), SA22-7630
z/OS DFSORT Application Programming Guide, SC26-7523

RMF

z/OS RMF User's Guide, SC33-7990
z/OS RMF Report Analysis, SC33-7991
z/OS RMF Performance Management Guide, SC33-7992

WebSphere MQ for z/OS

WebSphere MQ for z/OS System Setup Guide, SC34-6052

Tivoli Decision Support for z/OS

Accounting Workstation for z/OS User Guide, SH19-4516
Administration Guide, SH19-6816
CICS Performance Feature Guide and Reference, SH19-6820

DB2

DB2 UDB for z/OS Administration Guide, SC18-7413
Quick Beginnings for DB2 Connect Personal Edition, GC09-4834
DB2 Connect User's Guide, SC09-4835

DB2 PM

DB2 Performance Monitor for z/OS Report Reference, SC18-7978
DB2 Performance Monitor for z/OS Reporting User's Guide, SC18-7979

Others

Business Process Model Implementation with CICS Business Transaction Services, SG24-5464
Threadsafe Considerations for CICS, SG24-6351
Systems Programmers Guide to: z/OS System Logger, SG24-6898
Performance Considerations and Measurements for CICS and System Logger, REDP-3768
Distributed Functions of DB2 for z/OS and OS/390, SG24-6952

Glossary of CICSPA Command Operands and Fields

This glossary lists all the operands, suboperands, and fields used with the **CICSPA** command.

The format of the command is:
```
CICSPA operand[(suboperand)]
    [,operand[(suboperand)],]...
```

A

ABCODEC.   CMF ID: ABCODEC DFHPROG C114. Performance field used with the FIELDS and SELECT operands; contains the current abend code.

ABCODEO.   CMF ID: ABCODEO DFHPROG C113. Performance field used with the FIELDS and SELECT operands; contains the original abend code.

ACCMETH.   CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains the access method defined for the terminal ID or session ID in the TERM field (owner: DFHTERM, field ID: 002).

ACTIVE.   Suboperand used with SELECT(PERFORMANCE and SELECT(EXCEPTION to select long-running (active) transactions. Requires a report interval to be specified using FROM and TO.

ACTVTYNM.   CMF ID: ACTVTYNM DFHCBTS C204. Performance field used with the FIELDS operand; contains the name of the CICS BTS activity.

ALTER.   Suboperand used with LOGGER(LIST when requesting the System Logger List report; specifies that Structure Alter events are to be reported. Since these events apply to structures not individual logstreams, Structure Alter events are reported with a logstream name of *ALTER*.

APPLID.   Control operand (global or report-level); specifies the application identifiers of the CICS systems whose data you want to process.

APPLPROG.   CMF ID: APPLNAME DFHAPPL C001. Performance field used with the FIELDS and SELECT operands; contains the Application naming Program name (bytes 5 to 12 of the DFHAPPL field APPLNAME).

APPLRECS.   CICS PA ID: APPLRECS CICSPA A002. Performance field used with the FIELDS operand; contains the number of Application records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

APPLTRAN.   CMF ID: APPLNAME DFHAPPL C001. Performance field used with the FIELDS and SELECT operands; contains the Application naming Transaction ID (bytes 1 to 4 of the DFHAPPL field APPLNAME).

ASCEND.   Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests field sort in ascending order.

AVE.   Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests the average value of a count or clock field.

B

BAACDCCT.   CMF ID: BAACDCCT DFHCBTS A217. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS delete, get, and put activity data container requests.

BAACQPCT.   CMF ID: BAACQPCT DFHCBTS A214. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS acquire process and acquire activity requests.

BADACTCT.   CMF ID: BADACTCT DFHCBTS A209. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS define activity requests.

BADCPACT.   CMF ID: BADCPACT DFHCBTS A213. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS delete activity, cancel process, and cancel activity requests.

BADFIECT.   CMF ID: BADFIECT DFHCBTS A220. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS define input event requests.

BADPROCT.   CMF ID: BADPROCT DFHCBTS A208. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS defined process requests.

BALKPACT.   CMF ID: BALKPACT DFHCBTS A207. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS link process and link activity requests.

BAPRDCCT.   CMF ID: BAPRDCCT DFHCBTS A216. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS delete, get, and put process data container requests.

BARASYCT.   CMF ID: BARASYCT DFHCBTS A206. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS run ACQPROCESS and run activity asynchronous requests.

BARATECT. CMF ID: BARATECT DFHCBTS A219. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS retrieve reattach requests.

BARMPACT. CMF ID: BARMPACT DFHCBTS A212. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS resume process and resume activity requests.

BARSPACT. CMF ID: BARSPACT DFHCBTS A210. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS reset process and reset activity requests.

BARSYNCT. CMF ID: BARSYNCT DFHCBTS A205. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS run ACQPROCESS and run activity synchronous requests.

BASUPACT. CMF ID: BASUPACT DFHCBTS A211. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS suspend process and suspend activity requests.

BATIAECT. CMF ID: BATIAECT DFHCBTS A221. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS timer associated requests.

BATOTCCT. CMF ID: BATOTCCT DFHCBTS A218. Performance field used with the FIELDS and SELECT operands; contains the total number of CICS BTS process container and activity container requests.

BATOTECT. CMF ID: BATOTECT DFHCBTS A222. Performance field used with the FIELDS and SELECT operands; contains the total number of CICS BTS event related requests.

BATOTPCT. CMF ID: BATOTPCT DFHCBTS A215. Performance field used with the FIELDS and SELECT operands; contains the total number of CICS BTS process and activity requests

BMSIN. CMF ID: BMSINCT DFHMAPP A051. Performance field used with the FIELDS and SELECT operands; contains the number of BMS IN requests.

BMSMAP. CMF ID: BMSMAPCT DFHMAPP A050. Performance field used with the FIELDS and SELECT operands; contains the number of BMS MAP requests.

BMSOUT. CMF ID: BMSOUTCT DFHMAPP A052. Performance field used with the FIELDS and SELECT operands; contains the number of BMS OUT requests.

BMSTOTAL. CMF ID: BMSTOTCT DFHMAPP A090. Performance field used with the FIELDS and SELECT operands; contains the total number of BMS requests issued.

BRDGTRAN. CMF ID: BRDGTRAN DFHTASK C124. Performance field used with the FIELDS and SELECT operands; contains the name of the bridge listener transaction.

BTS. Report operand used to request the BTS (CICS Business Transaction Services) Report.

BY. Suboperand used with the LISTX operand; specifies the performance record sort sequence on the Performance List Extended Report. Suboperand used with the SUMMARY operand; specifies the summarization order on the Performance Summary Report. Suboperand used with the WAITANALYSIS operand, specifies the sort sequence (up to 3 fields) and control breaks for the Wait Analysis report.

BYTRAN. Suboperand used with the RESUSAGE(FILESUMM and RESUSAGE(TEMPSTORSUMM report operands to request individual transaction statistics.

C

CBSRVRNM. CMF ID: CBSRVRNM DFHEJBS C311. Performance field used with the FIELDS and SELECT operands; contains the name of the CorbaServer for which this request processor instance is handling requests.

CFCAPICT. CMF ID: CFCAPICT DFHCICS A025. Performance field used with the FIELDS and SELECT operands; contains the number of CICS OO Foundation class requests, including the Java API for CICS (JCICS) classes.

CFDTSLOT. Exception field used with the SELECT operand; contains the name of the coupling facility data table that incurred a wait for a locking or non-locking request slot.

CFDTSYNC. CMF ID: SRVSYWTT DFHSYNC S177. Performance field used with the FIELDS and SELECT operands; contains CF (coupling facility) data table syncpoint wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

CFDTWAIT. CMF ID: CFDTWAIT DFHFILE S176. Performance field used with the FIELDS and SELECT operands; contains CF (coupling facility) access requests wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

CHARACTER. Suboperand used with the FIELDS and SELECT operands; identifies a user character field. OWNER must be specified to determine which character field the data is taken from. If only part of the field is to be considered, this is specified using

SUBSTR(offset,length). In SELECT statements, VALUE must also be specified. Suboperand used with the CROSS operand for the Cross-System Work Extract; identifies a user character field to include in the extract data set. Requires OWNER, LENGTH, and HEADER to be specified.

CHARIN1. CMF ID: TCCHRIN1 DFHTERM A083. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from a principal terminal facility.

CHARIN2. CMF ID: TCCHRIN2 DFHTERM A085. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from a secondary terminal facility.

CHAROUT1. CMF ID: TCCHROU1 DFHTERM A084. Performance field used with the FIELDS and SELECT operands; contains the number of characters transmitted from a principal terminal facility.

CHAROUT2. CMF ID: TCCHROU2 DFHTERM A086. Performance field used with the FIELDS and SELECT operands; contains the number of characters transmitted from a secondary terminal facility.

CHMODECT. CMF ID: CHMODECT DFHTASK A248. Performance field used with the FIELDS and SELECT operands; contains the number of CICS TCB change modes. This field is not available in CICS Transaction Server for z/OS Version 3.1 or later.

CLASS1. Suboperand used with the MQ report operand to request the WebSphere MQ Class 1 reports.

CLASS3. Suboperand used with the MQ report operand to request the WebSphere MQ Class 3 reports.

CLIENTIP. CMF ID: CLIPADDR DFHSOCK C244. Performance field used with the FIELDS operand; contains the interpreted Client IP address (nnn.nnn.nnn.nnn).

CLOCK. Suboperand used with the CROSS operand for the Cross-System Work Extract; identifies a user clock field to include in the extract data set. Requires OWNER, NUMBER, and HEADER to be specified. This field has two parts: elapsed time and a count of the number of times that the clock was stopped (number of occurrences). CLOCK applies to both parts of the field.

CLOCKCOUNT. Suboperand used with the FIELDS and SELECT operands; identifies the count component of a user clock field. OWNER and NUMBER suboperands must be specified to determine which user clock the data is taken from. For SELECT statements, VALUE must also be specified.

CLOCKTIME. Suboperand used with the FIELDS and SELECT operands; identifies the time component of a user clock field. OWNER and NUMBER suboperands

must be specified to determine which user clock the data is taken from. For SELECT statements, VALUE must also be specified.

COMMWAIT. CICS PA ID: COMMWAIT CICSPA D906. Performance field used with the LIST(FIELDS, LISTX(FIELDS and SELECT operands; contains the total time value of the communications related fields IRWAIT, ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT. The time value is displayed in seconds to four decimal places. If it is a very large value, the field shows as + + + + + +.

COUNT. Field qualifier used with the FIELDS and SELECT operands to identify the count component of a CMF clock field (time is the other component). For example, SUSPEND(COUNT),FCWAIT(TIME,COUNT). The count is the number of times that the clock was stopped (number of occurrences). With the SELECT operand, TIME or COUNT must be specified (there is no default). TIME is the default for the FIELDS operand. Suboperand used with the FIELDS and SELECT operand to identify a user count field. OWNER and NUMBER suboperands must be specified to determine which user count the data is taken from. For SELECT statements, VALUE must also be specified. For example, COUNT(OWNER(owner),NUMBER(nnn),VALUE(value list)) Suboperand used with the CROSS operand for the Cross-System Work Extract; identifies a count type user field to include in the extract data set. Requires OWNER, NUMBER, and HEADER to be specified.

CPU. CMF ID: USRCPUT DFHTASK S008. Performance field used with the FIELDS and SELECT operands; contains CPU time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

CROSSsystem. Report operand used to request the Cross-System Work Report, Cross-System Work Extract, or both.

D

DATE. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *mm/dd/yyyy.*

DATEISO. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *yyyy-mm-dd.*

DATEM. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *mm/dd.*

DATEYR. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *mm/dd/yy.*

DB2.   Report operand used to request the DB2 Report.

DB2CONWT.   CMF ID: DB2CONWT DFHDATA S188. Performance field used with the FIELDS and SELECT operands; contains the DB2 Connection wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DB2RDYQW.   CMF ID: DB2RDYQW DFHDATA S187. Performance field used with the FIELDS and SELECT operands; contains the DB2 Thread wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DB2REQCT.   CMF ID: DB2REQCT DFHDATA A180. Performance field used with the FIELDS and SELECT operands; contains the number of DB2 (EXEC SQL and IFI) requests.

DB2WAIT.   CMF ID: DB2WAIT DFHDATA S189. Performance field used with the FIELDS and SELECT operands; contains the DB2 (EXEC SQL and IFI) wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DDNAME.   Suboperand used in requesting a Cross-System Work Extract or an Exported Performance Extract; specified with a valid 8-character DDname, it overrides the default DDname used for the requested extract data set.

DELIMIT.   Suboperand used with the EXPORT operand; specifies the field delimiter for the records written to the Exported Performance Extract data set. The default is a semicolon (;).

DESCEND.   Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests field sort in descending order.

DEV.   Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests the standard deviation of the values of a count or clock field.

DHCREATE.   CMF ID: DHCRECT DFHDOCH A226. Performance field used with the FIELDS and SELECT operands; contains the number of document handler CREATE requests issued.

DHINSERT.   CMF ID: DHINSCT DFHDOCH A227. Performance field used with the FIELDS and SELECT operands; contains the number of document handler INSERT requests issued.

DHRETRVE.   CMF ID: DHRETCT DFHDOCH A229. Performance field used with the FIELDS and SELECT

operands; contains the number of document handler RETRIEVE requests issued.

DHSET.   CMF ID: DHSETCT DFHDOCH A228. Performance field used with the FIELDS and SELECT operands; contains the number of document handler SET requests issued.

DHTOTAL.   CMF ID: DHTOTCT DFHDOCH A230. Performance field used with the FIELDS and SELECT operands; contains the total number of document handler requests issued.

DHTOTDCL.   CMF ID: DHTOTDCL DFHDOCH A240. Performance field used with the FIELDS and SELECT operands; contains the total length of documents created by the task.

DISPATCH.   CMF ID: USRDISPT DFHTASK S007. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on each CICS TCB under which the task executed. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. The time is shown in seconds to four decimal places if possible. If not, the decimal point is moved. Specify the COUNT parameter to request the number of times that the clock was stopped (number of occurrences). TIME or COUNT must be specified with SELECT. TIME is the default for FIELDS.

DISPWAIT.   CMF ID: DISPWTT DFHTASK S102. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task waited for redispatch by the CICS dispatcher. (This does not include the elapsed time spent waiting for the first dispatch. See SUSPEND.) This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. The time is shown in seconds to four decimal places if possible. If not, the decimal point is moved. Specify the COUNT parameter to request the number of times that the clock was stopped (number of occurrences). TIME or COUNT must be specified with SELECT. TIME is the default for FIELDS.

DPLRECS.   CICS PA ID: DPLRECS CICSPA A005. Performance field used with the FIELDS operand; contains the number of Distributed Program Link (DPL) records in this Network Unit-of-Work Extract record. This is a subset of FUNCSHIP, the Function Shipping record count. All Cross-System Work Extract records include this User Field counter.

DSCHMDLY.   CMF ID: DFHTASK S247 DSCHMDLY. Performance field used with the FIELDS and SELECT operands; contains the redispatch wait time caused by change-TCB mode. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DSPDELAY. CMF ID: DSPDELAY DFHTASK S125. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for the first dispatch. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DSMMSCWT. CMF ID: DSMMSCWT DFHTASK S279. Performance field used with the FIELDS and SELECT operands; contains the elapsed time which the user task spent waiting because no TCB was available, and none could be created because of MVS storage constraints. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DSTCBHWM. CMF ID: DSTCBHWM DFHTASK A252. Performance field used with the FIELDS and SELECT operands; contains the peak number of CICS open TCBs (in TCB modes H8, J8, J9, L8, L9, S8, X8, or X9) that have been allocated to the user task.

DSTCBMWT. CMF ID: DSTCBMWT DFHTASK S268. Performance field used with the FIELDS and SELECT operands; contains the elapsed time which the user task spent in TCB mismatch waits, that is, waiting because there was no TCB available matching the request, but there was at least one non-matching free TCB. For transactions that invoke a Java program to run in a JVM, this shows the time spent waiting for a TCB of the correct mode (J8 or J9) and JVM profile. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

E

EJBACTIV. CMF ID: EJBSACCT DFHEJBS A312. Performance field used with the FIELDS and SELECT operands; contains the number of bean activations that have occurred in this request processor.

EJBCREAT. CMF ID: EJBCRECT DFHEJBS A314. Performance field used with the FIELDS and SELECT operands; contains the number of bean creation calls that have occurred in this request processor

EJBMETHD. CMF ID: EJBMTHCT DFHEJBS A316. Performance field used with the FIELDS and SELECT operands; contains the number of bean method calls executed in this request processor.

EJBPASIV. CMF ID: EJBSPACT DFHEJBS A313. Performance field used with the FIELDS and SELECT operands; contains the number of bean passivations that have occurred in this request processor

EJBREMOV. CMF ID: EJBREMCT DFHEJBS A315. Performance field used with the FIELDS and SELECT operands; contains the number of bean removal calls that have occurred in this request processor.

EJBTOTAL. CMF ID: EJBTOTCT DFHEJBS A317. Performance field used with the FIELDS and SELECT operands; contains the total number of bean calls executed in this request processor, including Activation, Passivation, Creation, Removal and Method calls (DFHEJBS fields 312–316).

ENQDELAY. CMF ID: ENQDELAY DFHTASK S129. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for a CICS task control local enqueue. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

ERRFLAGS. CMF ID: TASKFLAG DFHTASK A064. Performance field used with the FIELDS operand. This 4-byte field contains a string of 32 bits which signal transaction errors.

EXCEPTION. Suboperand used with the SELECT operand; specifies that the selection criteria applies to exception class data records. Selection criteria for performance class data must be specified in a separate SELECT statement.

EXCLUDE. Suboperand used with the SELECT operand; causes records that match the specified criteria to be excluded from the report or extract. Suboperand used with the SELECT2 operand (Report Form Selection Criteria); records that match both SELECT and SELECT2 will be excluded from the report.

EXPORT. Report operand used to request the Exported Performance Data Extract.

EXTERNAL. Suboperand used with the LISTX, SUMMARY, CROSS, TRANGROUP, and BTS operands. If specified for the SUMMARY report, it invokes the external sort facility; otherwise the report uses an internal sort. EXTERNAL(ddname) specifies the DDname of the External Work Data Set which stores records for the external sort facility. The LISTX, CROSS, TRANGROUP, and BTS reports always use an external sort, and if EXTERNAL is not specified, CICS PA assigns a data set from the External Work Data Set pool.

EXWAIT. CMF ID: EXWTTIME DFHCICS S103. Performance field used with the FIELDS and SELECT operands; contains the accumulated elapsed time for all exception conditions. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

F

FCADD. CMF ID: FCADDCT DFHFILE A039. Performance field used with the FIELDS and SELECT operands; contains the number of file control ADD requests.

FCAMCT. CMF ID: FCAMCT DFHFILE A070. Performance field used with the FIELDS and SELECT operands; contains the number of access method calls from file control.

FCBROWSE. CMF ID: FCBRWCT DFHFILE A038. Performance field used with the FIELDS and SELECT operands; contains the number of file control BROWSE requests.

FCDELETE. CMF ID: FCDELCT DFHFILE A040. Performance field used with the FIELDS and SELECT operands; contains the number of file control DELETE requests.

FCGET. CMF ID: FCGETCT DFHFILE A036. Performance field used with the FIELDS and SELECT operands; contains the number of file control GET requests.

FCPUT. CMF ID: FCPUTCT DFHFILE A037. Performance field used with the FIELDS and SELECT operands; contains the number of file control PUT requests.

FCTOTAL. CMF ID: FCTOTCT DFHFILE A093. Performance field used with the FIELDS and SELECT operands; contains the total number of file control requests issued.

FCTY. CMF ID: FCTYNAME DFHTASK C163. Performance field used with the FIELDS and SELECT operands; contains the name of the transaction's principal facility, if any.

FCTYTYPE. CMF ID: TRANFLAG DFHTASK A164. Performance field used with the FIELDS and SELECT operands; contains an interpretation of the type of transaction facility from byte 0 of the transaction flags field.

FCWAIT. CMF ID: FCIOWTT DFHFILE S063. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for non-RLS file I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

FIELDS. Suboperand used with the LIST, LISTX, and SUMMARY operands; specifies which fields are to print on the Performance List, Performance List Extended, and the Performance Summary Report, and the order of the columns.

FILE. Suboperand of the RESUSAGE(TRANSUMM report operand to request the Transaction File Usage Summary report. Suboperand of the RESUSAGE(TRANLIST report operand to request File activity in the Transaction Resource Usage List report.

FILENAME. CICS PA ID: FILENAME CICSPA C916. Transaction resource class data field used with the SELECT operand; contains the File name. Applicable to the Transaction Resource Usage reports and ignored by all others.

FILESUMMARY. RESUSAGE report operand to request the File Usage Summary report.

FLOAT. LIST or SUMMARY Export operand to write numeric fields in the extract in S390 FLOAT format. This enables the export data to be imported reliably and consistently into DB2 tables.

FORMAT. Control operand (global) used to specify time and date delimiters for reports and extracts. The operand syntax is FORMAT(time-delimiter,date-delimiter). The default time-delimiter is a colon (:) and the default date-delimiter is a slash (/).

FROM. Suboperand used with the SELECT operand and ACTIVE, START, or STOP; specifies the start of a report interval to restrict the data reported based on transaction Start or Stop times. The format is FROM(date,time),TO(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

FSTRINGW. Exception field used with the SELECT operand; contains the name of the file that waited for a string.

FUNCSHIP. CICS PA ID: FUNCSHIP CICSPA A004. Performance field used with the FIELDS operand; contains the number of Function Shipping records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

G

GIVEUPWT. CMF ID: GVUPWAIT DFHTASK S184. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited as a result of giving up control to another task. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

GNQDELAY. CMF ID: GNQDELAY DFHTASK S123. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for a CICS task control global enqueue. This field has two parts, a time value and a count.

Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

GRAPH. Operand used to create a graph report from the CMF performance class data. GRAPH is followed by a suboperand requesting a specific graph.

H

HEADER. Suboperand used with character user fields on the CROSS operand for the Cross-System Work Extract; specifies the 8-character name for the field to be written to the extract data set. The default is "USER".

I

ICDELAY. CMF ID: ICDELAY DFHTASK S183. Performance field used with the FIELDS and SELECT operands; contains the elapsed time that the user task waited as a result of issuing Interval Control requests (DELAY, RETRIEVE, specific time of day). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

ICPUT. CMF ID: ICPUINCT DFHTASK A059. Also known as **ICSTART.** Performance field used with the FIELDS and SELECT operands; contains the number of interval control PUT/START or INITIATE requests.

ICSTACCT. CMF ID: DFHTASK A065 ICSTACCT. Performance field used with the FIELDS and SELECT operands; contains the number of local IC START requests with CHANNEL option.

ICSTACDL. CMF ID: DFHTASK A345 ICSTACDL . Performance field used with the FIELDS and SELECT operands; contains the container data length for local IC START requests with CHANNEL option.

ICSTRCCT. CMF ID: DFHTASK A346 ICSTRCCT . Performance field used with the FIELDS and SELECT operands; contains the number of remote IC START requests with CHANNEL option.

ICSTRCDL. CMF ID: DFHTASK A347 ICSTRCDL . Performance field used with the FIELDS and SELECT operands; contains the container data length for remote IC START requests with CHANNEL option.

ICTOTAL. CMF ID: ICTOTCT DFHTASK A066. Performance field used with the FIELDS and SELECT operands; contains the total number of interval control requests.

IMSREQT. CMF ID: IMSREQCT DFHDATA A179. Performance field used with the FIELDS and SELECT operands; contains the number of IMS (DBCTL) requests issued by the user task.

IMSWAIT. CMF ID: IMSWAIT DFHDATA S186. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for DBCTL to service the IMS requests issued by the user task. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

INCLUDE. (1) Suboperand used with the SELECT operand; causes records that match the specified criteria to be included in the report or extract. Suboperand used with the SELECT2 operand (Report Form Selection Criteria); records that match both SELECT and SELECT2 will be reported. (2)

INput. Control operand (global) used to specify the DDNAME of the SMF input data set.

INTERVAL. Suboperand used with the SUMMARY operand when START or STOP are specified to request a report summarizing transaction activity over time; specifies the time interval (hh:mm:ss) of each line in the report. The interval can be between 1 second and 24 hours. The default is 1 minute. Suboperand used with the GRAPH operand; specifies the time interval (in minutes) of each line of the Transaction Rate or Transaction Response Time graph reports. Suboperand used with HDB(REPORT when requesting HDB Summary reports. The default is the interval in the HDB Template.

IOWAIT. CMF ID: IOWAIT CICSPA D907. Performance field used with the LIST(FIELDS, LISTX(FIELDS, and SELECT operands; contains the total time value of the I/O wait time fields FCWAIT, JCWAIT, TDWAIT, TSWAIT. The time value is displayed in seconds to four decimal places. If it is a very large value, the field shows as + + + + + +.

IRESP. CICS PA ID: IRESP CICSPA D908. Performance field used with the FIELDS and SELECT operands; contains the CICS internal response time for the transaction. It is calculated by the difference in the Start and Stop times minus the time spent waiting on the terminal (operator think time).

IRWAIT. CMF ID: IRIOWTT DFHTERM S100. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for control to return at this end of an MRO (Inter-Region Communication) connection. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

J

JCWAIT. CMF ID: JCIOWTT DFHJOUR S010. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user

task waited for journal (logstream) I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JNLPUT. CMF ID: JNLWRTCT DFHJOUR A058. Also known as **JNLWRITE.** Performance field used with the FIELDS and SELECT operands; contains the number of journal control write requests.

JOBNAME. CICS PA ID: JOBNAME CICSPA C905. Performance field used with the FIELDS operand; contains the jobname of the CICS system from which the performance class data was output.

JVMITIME . CMF ID: JVMITIME DFHTASK S273. Performance field used with the FIELDS and SELECT operands; contains the elapsed time the user task spent initializing the CICS Java Virtual Machine (JVM) environment, and is a component of the task JVM elapsed time field, JVMTIME. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JVMMTIME. CICS PA ID: JVMMTIME CICSPA D910. Performance field used with the FIELDS and SELECT operands; contains the JVM method time, the elapsed time spent in the CICS JVM by the user task, excluding the JVM initialize and reset elapsed times. It is calculated by subtracting the sum of the JVM init time (JVMITIME) and JVM reset time (JVMRTIME) from the JVM elapsed time (JVMTIME).

JVMRTIME. CMF ID: JVMRTIME DFHTASK S275. Performance field used with the FIELDS and SELECT operands; contains the elapsed time the user task spent resetting or destroying the CICS Java Virtual Machine (JVM) environment. It is a component of the task JVM elapsed time field, JVMTIME. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JVMSUSP . CMF ID: JVMSUSP DFHTASK S254. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task was suspended by the CICS dispatcher while running in the CICS Java Virtual Machine (JVM). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JVMTIME. CMF ID: JVMTIME DFHTASK S253. Performance field used with the FIELDS and SELECT operands; contains the elapsed time that the user task spent in the CICS Java Virtual Machine (JVM). This field has two parts, a time value and a count. Specify

the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

J8CPU. CMF ID: J8CPUT DFHTASK S260. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS J8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

J9CPU. CMF ID: J9CPUT DFHTASK S267. Performance field used with the FIELDS and SELECT operands; contains the processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS J9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

K

KY8CPU. CMF ID: KY8CPUT DFHTASK S263. Performance field used with the FIELDS and SELECT operands; contains the total processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS Key 8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

KY8DISPT. CMF ID: KY8DISPT DFHTASK S262. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher domain on a CICS Key 8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

KY9CPU. CMF ID: KY9CPUT DFHTASK S265. Performance field used with the FIELDS and SELECT operands; contains the processor time during which the user task was dispatched by the CICS dispatcher on a CICS Key 9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

KY9DISPT. CMF ID: KY9DISPT DFHTASK S264. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on a CICS Key 9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to

request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

L

LABELS.   Suboperand used with the EXPORT operand; requests that the first record written to the Exported Performance Extract data set is to be the field headings.

LENGTH.   Suboperand used with character user fields on the CROSS operand for the Cross-System Work Extract; specifies the length of the user character field to be written to the extract data set. The length is between 1 and 256.

LIMIT.   Suboperand used with the LISTX operand. The format is LIMIT(fieldname(proclim)) where proclim is a number between 1 and 99999999. Applies to one of the sort fields specified in the BY operand to limit the number of records processed at that level in the sort sequence.

LINECount.   Control operand (global or report-level); specifies the number of lines per page to print on the reports.

LIST.   Report operand used to request the Performance List Report. Report operand used to request an Export Extract formatted by using a LIST or LISTX (sort ignored) Report Form (the DDNAME suboperand identifies that this is an extract, not a report). Suboperand of the DB2 report operand to request the DB2 List report.Suboperand of the MQ report operand to request the WebSphere MQ List report.

LISTEXCeption.   Report operand used to request the Exception List Report.

LISTX.   Report operand used to request the Performance List Extended Report. Report operand used to request the Cross-System Work Extended Report. This is where the Cross-System Work Report is tailored using a LISTX Report Form. BY(UOWID) identifies that this is the Cross-System Work Extended Report, not the Performance List Extended Report.

LOCKDLAY.   CMF ID: LMDELAY DFHTASK S128. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to acquire a lock on a resource. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

LOGGER.   Report operand used to request the System Logger Report.

LOGWRITE.   CMF ID: LOGWRTCT DFHJOUR A172. Performance field used with the FIELDS and SELECT operands; contains the number of Logger write requests issued.

LONGSUM.   Suboperand of DB2 report operand to request the DB2 Long Summary report

LUNAME.   CMF ID: LUNAME DFHTERM C111. Field used with the FIELDS, SELECT(PERFORMANCE and SELECT(EXCEPTION operands; contains the VTAM logical unit name of the terminal ID associated with the transaction.

LU61WAIT.   CMF ID: LU61WTT DFHTERM S133. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for I/O on a LUTYPE6.1 connection or session. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

LU62WAIT.   CMF ID: LU62WTT DFHTERM S134. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for I/O on a LUTYPE6.2 connection or session. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

L8CPU.   CMF ID: L8CPUT DFHTASK S259. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS L8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

L9CPU.   CMF ID: DFHTASK S266 L9CPUT. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS L9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

M

MAX.   Suboperand used with SUMMARY(FIELDS; requests the maximum value of a count or clock field.

MAXHTDLY.   CMF ID: MAXHTDLY DFHTASK S278. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to obtain a CICS Hot-Pooling TCB (H8 mode), because the CICS system had reached the limit set by the system parameter, MAXHPTCBS. The H8 mode open TCBs are used exclusively by HPJ-compiled

Java programs defined with HOTPOOL(YES). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences. This field is not available in CICS Transaction Server for z/OS Version 3.1 or later.

MAXJTDLY. CMF ID: MAXJTDLY DFHTASK S277. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to obtain a CICS JVM TCB (J8 mode), because the CICS system had reached the limit set by the system parameter, MAXJVMTCBS. The J8 mode open TCBs are used exclusively by Java programs defined with JVM(YES). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MAXOTDLY. CMF ID: MXTOTDLY DFHTASK S250. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to obtain a CICS open TCB (J8 or L8 mode) because the CICS system had reached the limit set by the system parameter MAXOPENTCBS. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MAXSTDLY. CMF ID: DFHTASK S281 MAXSTDLY. Performance field used with the FIELDS and SELECT operands; contains the maximum SSL TCB delay time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MAXXTDLY. CMF ID: DFHTASK S282 MAXXTDLY. Performance field used with the FIELDS and SELECT operands; contains the maximum XPLink TCB delay time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MIN. Suboperand used with SUMMARY(FIELDS; requests the minimum value of a count or clock field.

MQ. Report operand used to request the WebSphere MQ Report.

MSCPU. CMF ID: MSCPUT DFHTASK S258. Performance field used with the FIELDS and SELECT operands; contains the total CPU time during which the user task was dispatched by the CICS dispatcher on each CICS TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MSDISPT. CMF ID: MSDISPT DFHTASK S257. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on each CICS TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MSGIN1. CMF ID: TCMSGIN1 DFHTERM A034. Performance field used with the FIELDS and SELECT operands; contains the number of input messages from a principal terminal facility.

MSGIN2. CMF ID: TCMSGIN2 DFHTERM A067. Performance field used with the FIELDS and SELECT operands; contains the number of output messages from a principal terminal facility.

MSGOUT1. CMF ID: TCMSGOU1 DFHTERM A035. Performance field used with the FIELDS and SELECT operands; contains the number of input messages from a secondary terminal facility.

MSGOUT2. CMF ID: TCMSGOU2 DFHTERM A068. Performance field used with the FIELDS and SELECT operands; contains the number of output messages from a secondary terminal facility.

MVSID. CICS PA ID: MVSID CICSPA C904. Performance field used with the FIELDS operand; contains the SMF system ID.

MXTDELAY. CMF ID: MXTDELAY DFHTASK S127. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for first dispatch which was delayed because of the limits set by the MXT system parameter being reached. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

N

NATURE. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains an interpretation of the transaction's principal facility (if applicable) as a terminal ID or session ID.

NETID. CMF ID: NETID DFHTERM C197. Performance field used with the FIELDS and SELECT operands; contains the network qualified name (NQNAME) for CICS terminal resources using any VTAM LUALIAS (defined or dynamic).

NETNAME. CMF ID: NETUOWPX DFHTASK C097. Performance field used with the FIELDS and SELECT operands; contains the fully qualified name by which the originating system is known to the VTAM network.

NOAPPLID. Control operand (report-level); specifies that you want to report on all APPLIDs in the SMF input file.

NOFLOAT. Suboperand used with the HDB(EXTRACT operand; specifies that numeric fields will be written to the extract file in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool. NOFLOAT is in contrast to the FLOAT operand.

NOLABELS. Suboperand used with the EXPORT operand; indicates that a field headings record is not to be written to the Exported Performance Extract data set.

NOPRINT. Suboperand used on the CROSS operand. It specifies that the Cross-System Work Report is not to be produced. It is used to request only the Extract.

NOPRINTMultiple. Suboperand used on the CROSS operand. It specifies that the performance class records contained in a unit-of-work that includes multiple tasks are not printed.

NOTOTALS. Suboperand used with the SUMMARY operand when requesting the Performance Summary report, or with the HDB(REPORT operand when requesting HDB Summary reports; specifies to exclude total lines from the report. The default is to include totals.

NOWRITE. Suboperand used on the CROSS operand. It specifies that the Cross-System Work Extract data set is not to be created. It is used to request only the Report.

NOWRITEMultiple. Suboperand used on the CROSS operand. It specifies that the performance class records contained in a unit-of-work that includes multiple tasks are not written to the output data set.

NUMBER. Suboperand for user fields used with FIELDS or SELECT(PERFORMANCE operands; specifies the number of the user field within the owner as specified in the Monitoring Control Table (MCT).

O

ORIGIN. CMF ID: TRANFLAG DFHTASK C164. Performance field used with the FIELDS operand; contains an interpretation of the transaction origin type from byte 4 of the transaction flags field.

OSOWAIT. CMF ID: SOOIOWTT DFHSOCK S299. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for outbound socket I/O. (The inbound socket I/O wait time is contained in SOWAIT.) This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

OTSINDWT. CMF ID: OTSINDWT DFHSYNC S199. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task was dispatched or suspended indoubt whilst processing a syncpoint for an Object Transaction Service (OTS) Syncpoint request. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

OTSTID. CMF ID: OTSTID DFHTASK C194. Performance field used with the FIELDS and SELECT operands; contains the OTS Tid, the Object Transaction Service Transaction ID which can be used to correlate all the transactions that are part of the same Object Transaction.

Note: OTSTID is supported by CICS PA but is not available from the CICS PA dialog.

OUTput. Suboperand used to specify the DDname for the report output.

OWNER. Suboperand for user fields used with the FIELDS, SELECT(PERFORMANCE, or CROSSsystem operands; specifies the owner ID for the user field as specified in the Monitoring Control Table (MCT).

P

PCDLCRDL. CMF ID: PCDLCRDL DFHPROG A287. Performance field used with the FIELDS and SELECT operands; contains the total length, in bytes, of the data in the containers of all distributed program link (DPL) RETURN CHANNEL commands issued by the user task. This total includes the length of any headers to the data.

PCDLCSDL. CMF ID: PCDLCSDL DFHPROG A286. Performance field used with the FIELDS and SELECT operands; contains the total length, in bytes, of the data in the containers of all the distributed program link (DPL) requests issued with the CHANNEL option by the user task. This total includes the length of any headers to the data.

PCDPL. CMF ID: PCDPLCT DFHPROG A073. Performance field used with the FIELDS and SELECT operands; contains the number of distributed program link (DPL) requests.

PCDPLCCT. CMF ID: PCDPLCCT DFHPROG A308. Performance field used with the FIELDS and SELECT operands; contains the number of program distributed program link (DPL) requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the distributed program link requests field, PCDPL (073).

PCLINK. CMF ID: PCLINKCT DFHPROG A055. Performance field used with the FIELDS and SELECT operands; contains the number of program control LINK requests.

PCLNKCCT.   CMF ID: PCLNKCCT DFHPROG A306.
Performance field used with the FIELDS and SELECT
operands; contains the number of local program LINK
requests, with the CHANNEL option, issued by the user
task. Note: This field is a subset of the program LINK
requests field, PCLINK (055).

PCLOAD.   CMF ID: PCLOADCT DFHPROG A057.
Performance field used with the FIELDS and SELECT
operands; contains the number of program control
LOAD requests.

PCLOADTM.   CMF ID: PCLOADTM DFHPROG S115.
Performance field used with the FIELDS and SELECT
operands; contains the elapsed time in which the user
task waited for program fetches from the DFHRPL
program library. This field has two parts, a time value
and a count. Specify the TIME parameter to request the
elapsed time. Specify the COUNT parameter to request
the number of occurrences.

PCLURM.   CMF ID: PCLURMCT DFHPROG A072.
Performance field used with the FIELDS and SELECT
operands; contains the number of program link LINK
URM requests.

PCRTNCCT.   CMF ID: PCRTNCCT DFHPROG A309.
Performance field used with the FIELDS and SELECT
operands; contains the number of program RETURN
requests, with the CHANNEL option, issued by the user
task.

PCRTNCDL.   CMF ID: PCRTNCDL DFHPROG A310.
Performance field used with the FIELDS and SELECT
operands; contains the total length, in bytes, of the data
in the containers of all the program RETURN requests,
with the CHANNEL option, issued by the user task.

PCSTGHWM.   CMF ID: PCSTGHWM DFHSTOR A087.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task.

PCXCLCCT.   CMF ID: PCXCLCCT DFHPROG A307.
Performance field used with the FIELDS and SELECT
operands; contains the number of program XCTL
requests, with the CHANNEL option, issued by the user
task. Note: This field is a subset of the program XCTL
requests field, PCXCTL (056).

PCXCTL.   CMF ID: PCXCTLCT DFHPROG A056.
Performance field used with the FIELDS and SELECT
operands; contains the number of program control
XCTL requests.

PC24BHWM.   CMF ID: PC24BHWM DFHSTOR A108.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task below the 16MB line.

PC24CHWM.   CMF ID: PC24CHWM DFHSTOR A143.
Performance field used with the FIELDS and SELECT

operands; contains the high-water mark of program
storage in user by the user task below the 16MB line, in
the CDSA.

PC24RHWM.   CMF ID: PC24RHWM DFHSTOR A162.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task below the 16MB line, in
the RDSA.

PC24SHWM.   CMF ID: PC24SHWM DFHSTOR A160.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task below the 16MB line, in
the SDSA.

PC31AHWM.   CMF ID: PC31AHWM DFHSTOR A139.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task above the 16MB line.

PC31CHWM.   CMF ID: PC31CHWM DFHSTOR A142.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task above the 16MB line, in
the ECDSA.

PC31RHWM.   CMF ID: PC31RHWM DFHSTOR A122.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task above the 16MB line, in
the ERDSA.

PC31SHWM.   CMF ID: PC31SHWM DFHSTOR A161.
Performance field used with the FIELDS and SELECT
operands; contains the high-water mark of program
storage in user by the user task above the 16MB line, in
the ESDSA.

PERFORMANCE.   Suboperand used with the SELECT
operand; specifies that the selection criteria applies to
performance class data records. Selection criteria for
exception class data must be specified in a separate
SELECT statement.

PGBRWCCT.   CMF ID: DFHCHNL A322 PGBRWCCT.
Performance field used with the FIELDS and SELECT
operands; contains the number of BROWSE CHANNEL
CONTAINER requests.

PGCRECCT.   CMF ID: DFHCHNL A328 PGCRECCT.
Performance field used with the FIELDS and SELECT
operands; contains the number of containers created.

PGGETCCT.   CMF ID: DFHCHNL A323 PGGETCCT.
Performance field used with the FIELDS and SELECT
operands; contains the number of GET CHANNEL
CONTAINER requests.

PGGETCDL.   CMF ID: DFHCHNL A326 PGGETCDL.
Performance field used with the FIELDS and SELECT
operands; contains the GET CHANNEL CONTAINER
data length.

PGMOVCCT.   CMF ID: DFHCHNL A325 PGMOVCCT. Performance field used with the FIELDS and SELECT operands; contains the number of MOVE CHANNEL CONTAINER requests.

PGPUTCCT.   CMF ID: DFHCHNL A324 PGPUTCCT. Performance field used with the FIELDS and SELECT operands; contains the number of PUT CHANNEL CONTAINER requests.

PGPUTCDL.   CMF ID: DFHCHNL A327 PGPUTCDL. Performance field used with the FIELDS and SELECT operands; contains the PUT CHANNEL CONTAINER data length.

PGTOTCCT.   CMF ID: DFHCHNL A321 PGTOTCCT. Performance field used with the FIELDS and SELECT operands; contains the total number of CHANNEL CONTAINER requests.

PORT.   CMF ID: PORTNUM DFHSOCK A246. Performance field used with the FIELDS and SELECT operands; contains the port number of the installed TCP/IP service resource definition from which the transaction was initiated.

PRCSNAME.   CMF ID: PRCSNAME DFHCBTS C200. Performance field used with the FIELDS operand; contains the name of the CICS BTS process.

PRCSTYPE.   CMF ID: PRCSTYPE DFHCBTS C201. Performance field used with the FIELDS operand; contains the CICS BTS process type.

PRECISION.   Control operand (global); specifies the precision of numeric fields for reporting. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is 4.

PRINTMultiple.   Suboperand used on the CROSS and TRANGROUP operands. It specifies that the performance records that are contained in a network unit-of-work that includes multiple records are to be printed.

PRINTSingle.   Suboperand used on the CROSS and TRANGROUP operands. It specifies that the performance records that are contained in a network unit-of-work that includes a single record only are to be printed.

PROGRAM.   CMF ID: PGMNAME DFHPROG C071. Performance field used with the FIELDS and SELECT operands; contains the initial program name for the task.

PRTY.   Exception field used with the SELECT operand; contains the transaction priority when monitoring of the task was initialized.

PTPWAIT.   CMF ID: PTPWAIT DFHTASK S285. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user

task waited for the 3270 bridge partner transaction to complete. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

Q

QNAME.   Suboperand of MQ report operand to filter on WebSphere MQ queue name.

QRCPU.   CMF ID: QRCPUT DFHTASK S256. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on the CICS QR mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

QRDISPT.   CMF ID: QRDISPT DFHTASK S255. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task was dispatched by the CICS dispatcher on the CICS QR mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

QRMODDLY.   CMF ID: QRMODDLY DFHTASK S249. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for redispatch on the CICS QR mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

R

RANGE1(number).   Suboperand used with the GRAPH(TRANRATE and GRAPH(RESPONSE operands; specifies the high-end (in seconds) of the Average Response Time graph for the Transaction Rate and Transaction Response Time graph reports.

RANGE2(number).   Suboperand used with the GRAPH(TRANRATE operand for the Transaction Rate graph report; RANGE2(number) specifies the high-end of the graph of Number of Transactions Completed. Suboperand used with the GRAPH(RESPONSE operand for the Transaction Response Time graph report; RANGE2(number) specifies the high-end (in seconds) of the Maximum Response Time graph.

RECCOUNT.   CMF ID: PERRECNT DFHCICS A131. Performance field used with the FIELDS and SELECT operands; contains the number of performance class records written for a user task.

RECORDSELECTION. Alias for RECSEL report operand.

RECSEL. Report operand used to request the Record Selection Extract.

RELEASE. CICS PA ID: RELEASE CICSPA C909. Performance field used with the FIELDS operand; contains the CICS release of the performance class data.

RESOURCE. Exception field used with the SELECT operand; contains the type of resource that caused the wait exception. Exception resource types are: CFDTLRSW, CFDTPOOL, STORAGE, TEMPSTOR, LSRPOOL, FILE.

RESPONSE. CICS PA ID: RESP CICSPA D901. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the CICS response time for the transaction. It is calculated as the difference between the Start and Stop times. Also, suboperand of the GRAPH report operand; requests the Transaction Response Time graph report.

RESUSAGE. Report operand used to request the Transaction Resource Usage List report.

RLSCPU. CMF ID: RLSCPUT DFHFILE S175. Performance field used with the FIELDS and SELECT operands. The RLS File Request CPU (SRB) time field; contains the SRB CPU time the transaction spent processing RLS file requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RLSWAIT. CMF ID: RLSWAIT DFHFILE S174. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for RLS file I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RLUNAME. CMF ID: RLUNAME DFHTERM C198. Performance field used with the FIELDS and SELECT operands; contains the real VTAM logical unit name of the terminal ID associated with the transaction.

RMICPSM. CMF ID: RMICPSM DFHRMI S007. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for CICSPlex SM requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIDB2. CMF ID: RMIDB2 DFHRMI S003. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for DB2 requests. This field has two parts, a

time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIDBCTL. CMF ID: RMIDBCTL DFHRMI S004. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for DBCTL requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIEXDLI. CMF ID: RMIEXDLI DFHRMI S005. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for EXEC DLI requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIMQM. CMF ID: RMIMQM DFHRMI S006. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for MQSeries requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIOTHER. CMF ID: RMIOTHER DFHRMI S002. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for resource manager requests other than DB2, DBCTL, EXEC DLI, WebSphere MQ, CICSPlex SM, and CICS socket requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIOTIME. CICS PA ID: RMIOTIME CICSPA D911. Performance field used with the FIELDS and SELECT operands; contains the amount of elapsed time the task was suspended by the dispatcher while in the Resource Manager Interface (RMI), excluding time waiting for DB2 and IMS. The value is calculated by subtracting the sum of the IMS wait time (IMSWAIT), the DB2 readyq wait time (DB2RDYQW), the DB2 connection wait time (DB2CONWT), and the DB2 wait time (DB2WAIT) from the RMI suspend time (RMISUSP). In releases prior to CICS PA V 1R3, the name of this field was RMIOTHER.

RMISUSP. CMF ID: RMISUSP DFHTASK S171. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task was suspended by the CICS dispatcher whilst in the Resource Manager Interface (RMI). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMITCPIP. CMF ID: RMITCPIP DFHRMI S008. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for CICS TCP/IP socket requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMITIME. CMF ID: RMITIME DFHTASK S170. Performance field used with the FIELDS and SELECT operands; contains the elapsed time the user task spent in the Resource Manager Interface (RMI). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMITOTAL. CMF ID: RMITOTAL DFHRMI S001. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS Resource Manager Interface (RMI).

ROCPU. CMF ID: ROCPUT DFHTASK S270. Performance field used with the FIELDS and SELECT operands; contains the total processor (CPU) time during which the user task was dispatched by the CICS dispatcher on the CICS RO mode TCB. The CICS RO mode TCB is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RODISPT. CMF ID: RODISPT DFHTASK S269. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on the CICS RO mode TCB. The CICS RO mode TCB is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RPTCLASS. CMF ID: RPTCLASS DFHCICS C168. Performance field used with the FIELDS and SELECT operands; contains the MVS Workload Manager (WLM) service class for this transaction.

RQPWAIT. CMF ID: RQPWAIT DFHTASK S193. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the request processor user task CIRP waited for any outstanding replies to be satisfied. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RQRWAIT. CMF ID: RQRWAIT DFHTASK S192. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the request receiver user task CIRR (or user specified transaction ID) waited for any outstanding replies to be satisfied. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RRMSWAIT. CMF ID: RRMSWAIT DFHTASK S191. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited indoubt using the MVS resource recovery services (RRS) for transactional EXCI. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RSYSID. CMF ID: RSYSID DFHCICS C130. Performance field used with the FIELDS and SELECT operands; contains the connection name (sysid) of the remote system to which the transaction was routed.

RTYPE. CMF ID: RTYPE DFHCICS C112. Performance field used with the FIELDS and SELECT operands; indicates the reason for a performance class record to be written for a user task.

RUNTRWTT. CMF ID: RUNTRWTT DFHTASK S195. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for completion of a transaction that executed as a result of the user task issuing a CICS BTS run ACQPROCESS or run activity request to execute a process or activity synchronously. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

S

SC24CGET. CMF ID: SCCGETCT DFHSTOR A117. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the CDSA.

SC24CHWM. CMF ID: SC24CHWM DFHSTOR A116. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the CDSA.

SC24COCC. CMF ID: SC24COCC DFHSTOR A118. Performance field used with the FIELDS and SELECT operands; contains the CDSA storage "occupancy" of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is "1K byte-units", where the "unit" is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K

SC24FSHR • SMFSTART

byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SC24FSHR. CMF ID: SC24FSHR DFHSTOR A146. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage FREEMAINed in the CDSA and SDSA.

SC24GSHR. CMF ID: SC24GSHR DFHSTOR A145. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage GETMAINed in the CDSA and SDSA.

SC24SGET. CMF ID: SC24SGCT DFHSTOR A144. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for shared storage in the CDSA and SDSA.

SC24UGET. CMF ID: SCUGETCT DFHSTOR A054. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the UDSA.

SC24UHWM. CMF ID: SCUSRHWM DFHSTOR A033. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the UDSA.

SC24UOCC. CMF ID: SCUSRSTG DFHSTOR A095. Performance field used with the FIELDS and SELECT operands; contains the UDSA storage "occupancy" of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is "1K byte-units", where the "unit" is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SC31CGET. CMF ID: SCCGETCT DFHSTOR A120. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the ECDSA.

SC31CHWM. CMF ID: SC31CHWM DFHSTOR A119. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the ECDSA.

SC31COCC. CMF ID: SC31COCC DFHSTOR A121. Performance field used with the FIELDS and SELECT operands; contains the ECDSA storage "occupancy" of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is "1K byte-units", where the "unit" is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SC31FSHR. CMF ID: SC31FSHR DFHSTOR A149. Performance field used with the FIELDS and SELECT

operands; contains the number of bytes of shared storage FREEMAINed in the ECDSA and ESDSA.

SC31GSHR. CMF ID: SC31GSHR DFHSTOR A148. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage GETMAINed in the ECDSA and ESDSA.

SC31SGET. CMF ID: SC31SGCT DFHSTOR A147. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for shared storage in the ECDSA and ESDSA.

SC31UGET. CMF ID: SCUGETCT DFHSTOR A105. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the EUDSA.

SC31UHWM. CMF ID: SCUSRHWM DFHSTOR A106. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the EUDSA.

SC31UOCC. CMF ID: SCUCRSTG DFHSTOR A107. Performance field used with the FIELDS and SELECT operands; contains the EUDSA storage "occupancy" of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is "1K byte-units", where the "unit" is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SELECT. Control operand (global or report-level) used to select records for reporting based on field values.

SELUOW. Report operand used to select records for the Cross-System report or extract based on units-of-work. If a task in the UOW matches the selection criteria, the entire UOW is reported. It can be used in conjunction with SELECT to first filter out those tasks that you know are of no interest and thereby optimize the record sort process.

SELECT2. Report operand used to select records for reporting based on field values. Generated when Selection Criteria are specified in Report Forms. When used in conjunction with SELECT, the record is selected if it matches the Selection Criteria in *both* SELECT and SELECT2.

SESSTYPE. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains an interpretation of the type of session for the session ID in the TERM field (owner: DFHTERM, field ID: 002).

SHORTSUM. Suboperand of DB2 report operand to request the DB2 Short Summary report.

SMFSTART. Control operand (global); specifies the start of a time period to restrict the SMF input data

processed based on the SMF record time stamp. The format is SMFSTART(date,time),SMFSTOP(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

SMFSTOP. Control operand (global); specifies the end of a time period to restrict the SMF input data processed based on the SMF record time stamp. The format is SMFSTART(date,time),SMFSTOP(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

SOBYDECT. CMF ID: SOBYDECT DFHSOCK A243. Performance field used with the FIELDS and SELECT operands; contains the number of bytes decrypted by the secure sockets layer (SSL).

SOBYENCT. CMF ID: SOBYENCT DFHSOCK A242. Performance field used with the FIELDS and SELECT operands; contains the number of bytes encrypted by the secure sockets layer (SSL).

SOCHRIN. CMF ID: SOCHRIN DFHSOCK A295. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from outbound sockets.

SOCHRIN1. CMF ID: SOCHRIN1 DFHSOCK A302. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from inbound sockets.

SOCHROUT. CMF ID: SOCHROUT DFHSOCK A297. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to outbound sockets.

SOCHROU1. CMF ID: SOCHROU1 DFHSOCK A304. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to inbound sockets.

SOCNPSCT. CMF ID: SOCNPSCT DFHSOCK A290. Performance field used with the FIELDS and SELECT operands; contains the number of create non-persistent socket requests issued by the user task.

SOCPSCT. CMF ID: SOCPSCT DFHSOCK A291. Performance field used with the FIELDS and SELECT operands; contains the number of create persistent socket requests issued by the user task.

SOEXTRCT. CMF ID: SOEXTRCT DFHSOCK A289. Performance field used with the FIELDS and SELECT operands; contains the number of EXTRACT TCP/IP and EXTRACT CERTIFICATE requests issued by the user task.

SOMSGIN1. CMF ID: SOMSGIN1 DFHSOCK A301. Performance field used with the FIELDS and SELECT operands; contains the number of RECEIVE requests from inbound sockets.

SOMSGOU1. CMF ID: SOMSGOU1 DFHSOCK A303. Performance field used with the FIELDS and SELECT operands; contains the number of inbound socket SEND requests issued.

SONPSHWM. CMF ID: SONPSHWM DFHSOCK A292. Performance field used with the FIELDS and SELECT operands; contains the peak number (high-water mark) of non-persistent outbound sockets established by the user task.

SOPSHWM. CMF ID: SOPSHWM DFHSOCK A293. Performance field used with the FIELDS and SELECT operands; contains the peak number (high-water mark) of persistent outbound sockets established by the user task.

SORCV. CMF ID: SORCVCT DFHSOCK A294. Performance field used with the FIELDS and SELECT operands; contains the number of socket RECEIVE requests issued.

SORT. Suboperand of MQ report operand to specify sort sequence of WebSphere MQ Summary report.

SOSEND. CMF ID: SOSENDCT DFHSOCK A296. Performance field used with the FIELDS and SELECT operands; contains the total number of outbound socket SEND requests issued.

SOTOTAL. CMF ID: SOTOTCT DFHSOCK A298. Performance field used with the FIELDS and SELECT operands; contains the total number of socket requests issued.

SOWAIT. CMF ID: SOIOWTT DFHSOCK S241. Performance field used with the FIELDS and SELECT operands; contains the inbound socket I/O wait time, the elapsed time in which the user task waited for socket I/O. (The outbound socket I/O wait time is contained in OSOWAIT.) This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SRVCLASS. CMF ID: SRVCLASS DFHCICS C167. Performance field used with the FIELDS and SELECT operands; contains the MVS Workload Manager (WLM) service class for this transaction.

SSID. Suboperand of DB2, MQ and RECSEL report operands to specify DB2 and MQ Subsystem ID.

START. CMF ID: START DFHCICS T005. Time stamp field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the task start time. With FIELDS, a date or time format is required: either DATE, DATEISO, DATEM, DATEYR, TIMET (default), TIMEM, or TIMES. For SELECT, a report interval must be specified using FROM and TO.

STOP. CMF ID: STOP DFHCICS T006. Time stamp field used with the FIELDS, SELECT(PERFORMANCE,

and SELECT(EXCEPTION operands; contains the task stop time. With FIELDS, a date or time format is required: either DATE, DATEISO, DATEM, DATEYR, TIMET (default), TIMEM, or TIMES. For SELECT, a report interval must be specified using FROM and TO.

STORAGEW. Exception field used with the SELECT operand. This is a character field containing the name of a CICS dynamic storage area (DSA) that incurred a wait for storage. Candidates are: CDSA, RDSA, SDSA, UDSA, ECDSA, ERDSA, ESDSA, or EUDSA.

STYPE. CMF ID: TTYPE DFHTASK C004. Performance field used with the FIELDS and SELECT operands; a 2-character field that indicates the transaction start type.

SUBSTR . Suboperand for user character fields used with FIELDS or SELECT(PERFORMANCE operands; specifies that only part of the field is to be considered. The format is SUBSTR(offset,length). For example, SUBSTR(1,8) identifies the first eight bytes of the character field.

SUMEXCeption. Report operand used to specify the Exception Summary Report.

SUMMARY. Report operand used to specify the Performance Summary Report. Report operand used to request an Export Extract formatted by using a SUMMARY Report Form. Suboperand of MQ report operand to request WebSphere MQ Summary report.

SUSPEND. CMF ID: SUSPTIME DFHTASK S014. Performance field used with the FIELDS and SELECT operands; contains the total elapsed wait time for which the user task was suspended by the CICS dispatcher. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SYNCDLY. CMF ID: SYNCDLY DFHSYNC S196. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for a syncpoint request to be issued by its parent transaction. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SYNCPT. CMF ID: SPSYNCCT DFHSYNC A060. Performance field used with the FIELDS and SELECT operands; contains the number of syncpoint requests issued by the user task.

SYNCTIME. CMF ID: SYNCTIME DFHSYNC S173. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task was dispatched or suspended processing Syncpoint requests. This field has two parts, a time value and a count. Specify the TIME parameter to

request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SYSID. Suboperand used with the CROSS operand for the Cross-System Work Extract. SYSID(applid,mvsid) specifies the APPLID and MVS (SMF) ID to be written in each record of the extract data set. The defaults are respectively MULTIPLE and CICS.

SZALLCTO. CMF ID: SZALLCTO DFHFEPI A157. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI ALLOCATE requests that timed out.

SZALLOC. CMF ID: SZALLOCT DFHFEPI A150. Performance field used with the FIELDS and SELECT operands; contains the FEPI ALLOCATE requests issued by the user task.

SZCHRIN. CMF ID: SZCHRIN DFHFEPI A155. Performance field used with the FIELDS and SELECT operands; contains the number of characters received through FEPI.

SZCHROUT. CMF ID: SZCHROUT DFHFEPI A154. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent through FEPI.

SZRCV. CMF ID: SZRCVCT DFHFEPI A151. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI RECEIVE requests.

SZRCVTO. CMF ID: SZRCVTO DFHFEPI A158. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI RECEIVE data requests that timed out.

SZSEND. CMF ID: SZSENDCT DFHFEPI A152. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI SEND requests issued by the user task.

SZSTART. CMF ID: SZSTRTCT DFHFEPI A153. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI START requests issued by the user task.

SZTOTAL. CMF ID: SZTOTCT DFHFEPI A159. Performance field used with the FIELDS and SELECT operands; contains the total number of FEPI requests issued.

SZWAIT. CMF ID: SZWAIT DFHFEPI S156. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for FEPI services. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

S8CPU. CMF ID: S8CPUT DFHTASK S261. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS S8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

T

TASKCNT. CICS PA ID: TASKCNT CICSPA X902. Special field used with the SUMMARY(FIELDS operand; This special field is generated by CICS PA during processing of the Performance Summary Report or Summary HDB. It gives the total number of CMF records processed. Specify whether to use TASKCNT or TASKTCNT for the summary statistical calculations.

TASKNO. CMF ID: TRANNUM DFHTASK P031. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the transaction number assigned by CICS and has a value between 1 and 99999.

TASKTCNT. CICS PA ID: TASKTCNT CICSPA X914. Special field used with the SUMMARY(FIELDS operand; This special field is generated by CICS PA during processing of the Performance Summary Report or Summary HDB. It gives the total number of CMF task termination records processed. Specify whether to use TASKCNT or TASKTCNT for the summary statistical calculations.

TCALLOC. CMF ID: TCALLOCT DFHTERM A069. Performance field used with the FIELDS and SELECT operands; contains the terminal facility ALLOCATE count.

TCB Modes. TCB Mode codes and their descriptions:
QR	The quasi-reentrant mode TCB
RO	The resource-owning mode TCB
CO	The concurrent mode TCB
SZ	The FEPI mode TCB
RP	The ONC/RPC mode TCB
FO	The file-owning mode TCB
SL	The sockets listener mode TCB
SO	The sockets mode TCB
S8	The secure sockets layer mode TCB
D2	The CICS-DB2 housekeeping mode TCB
L8	An open mode TCB
H8	A Java hotpooling mode TCB
J8	The J8 open TCB, used for JVMs that are in CICS key
J9	The J9 open TCB, used for JVMs that are in user key
JM	The JM open TCB, used for the master JVM that initializes the shared class cache

TCBATTCT. CMF ID: TCBATTCT DFHTASK A251. Performance field used with the FIELDS and SELECT operands; contains the number of CICS TCB attaches.

TCC62IN2. CMF ID: TCC62IN2 DFHTERM A137. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from the alternate facility LUTYPE6.2 (APPC) sessions.

TCC62OU2. CMF ID: TCC62OU2 DFHTERM A138. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to the alternate facility LUTYPE6.2 (APPC) sessions.

TCLASSNM. CMF ID: TCLSNAME DFHTASK C166. Performance field used with the FIELDS and SELECT operands; contains the name of the transaction class.

TCLASS. Exception field used with the SELECT operand; contains the name of the transaction class.

TCLDELAY. CMF ID: TCLDELAY DFHTASK S126. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for first dispatch which was delayed because of the limits set for this transaction's transaction class. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TCM62IN2. CMF ID: TCM62IN2 DFHTERM A135. Performance field used with the FIELDS and SELECT operands; contains the number of messages received from the alternate facility LUTYPE6.2 (APPC) sessions.

TCM62OU2. CMF ID: TCC62OU2 DFHTERM A138. Performance field used with the FIELDS and SELECT operands; contains the number of messages sent to the alternate facility LUTYPE6.2 (APPC) sessions.

TCPSRVCE. CMF ID: TCPSRVCE DFHSOCK C245. Performance field used with the FIELDS and SELECT operands; contains the TCP/IP service name which attached the user task.

TCWAIT. CMF ID: TCIOWTT DFHTERM S009. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for input from the terminal user, after issuing an EXEC CICS RECEIVE request. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TDGET. CMF ID: TDGETCT DFHDEST A041. Performance field used with the FIELDS and SELECT operands; contains the number of Transient data GET requests.

TDPURGE. CMF ID: TDPURCT DFHDEST A043. Performance field used with the FIELDS and SELECT operands; contains the number of Transient data PURGE requests.

TDPUT. CMF ID: TDPUTCT DFHDEST A042. Performance field used with the FIELDS and SELECT operands; contains the number of Transient data PUT requests.

TDTOTAL. CMF ID: TDTOTCT DFHDEST A091. Performance field used with the FIELDS and SELECT operands; contains the total number of transient data requests issued by the user task.

TDWAIT. CMF ID: TDIOWTT DFHDEST S101. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for VSAM transient data I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TEMPSTOR. Suboperand of the RESUSAGE(TRANSUMM report operand to request the Transaction Temporary Storage Usage Summary report. Suboperand of the RESUSAGE(TRANLIST report operand to request Temporary Storage activity in the Transaction Resource Usage List report.

TEMPSTORSUMMARY. Report operand to request the Temporary Storage Usage Summary report.

TERM. CMF ID: TERM DFHTERM C002. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the 4-character terminal ID.

TERMCNNM. CMF ID: TERMCNNM DFHTERM C169. Performance field used with the FIELDS and SELECT operands; contains the name of the owning connection (sysid) for those transactions associated with a session terminal facility.

TERMCODE. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains an interpretation of the terminal device type for the terminal ID, or session type for the session ID, in the TERM field (owner: DFHTERM, field ID: 002).

TERMINFO. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains a hexadecimal interpretation of the terminal information field, TERMINFO (owner: DFHTERM, field ID: 165).

TIME. Field qualifier used with the FIELDS and SELECT operands to identify the elapsed time component of a CMF clock field (count is the other component). For example, CPU(TIME),FCWAIT(TIME,COUNT). With the SELECT operand, TIME or COUNT must be specified (there is

no default). TIME is the default for the FIELDS operand. The time is shown in seconds to four decimal places. If it is a very large value, the field shows as + + + + + +.

TIMEM. Qualifier for time stamp fields such as START or STOP; specifies that the time is to be reported in the format *hh:mm.*

TIMES. Qualifier for time stamp fields such as START or STOP; specifies that the time is to be reported in the format *hh:mm:ss.*

TIMESEQ. Suboperand used with LOGGER(LIST when requesting the System Logger List report; specifies that the report is to be sorted on time (interval expiry period) then logstream or structure name sequence within time. If not specified, the report is sorted on logstream or structure name.

TIMET. Qualifier for time stamp fields such as START or STOP; specifies that the time is to be reported in the format *hh:mm:ss.thm.*

TITLE1. Control operand (report-level); specifies up to 64 characters as the first half of a report title which prints at the top of each page below the report heading.

TITLE2. Control operand (report-level); specifies up to 64 characters as the second half of a report title which prints at the top of each page below the report heading.

TO. Suboperand used with the SELECT operand and ACTIVE, START, or STOP; specifies the end of a report interval to restrict the data reported based on transaction Start or Stop times. The format is FROM(date,time),TO(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

TOT. Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests the total value of the values of a count or clock field.

TOTAL. Report operand used to request the Performance Totals Report. Suboperand of the RESUSAGE(FILESUMM and RESUSAGE(TEMPSTORSUMM report operands to include total transaction statistics.

TOTRECS. CICS PA ID: TOTRECS CICSPA A001. Performance field used with the FIELDS operand; contains the total number of CMF performance records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

TRAN. CMF ID: TRAN DFHTASK C001. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the 4-character transaction ID.

TRANFLAG. CMF ID: TRANFLAG DFHTASK A164. This 8-byte field is used on the FIELDS suboperand. It contains the transaction flags in hexadecimal notation.

TRANGROUP. Report operand used to request the Transaction Group Report.

TRANLIST. RESUSAGE report operand used to request the Transaction Resource Usage List report.

TRANPRTY. CMF ID: TRANPRI DFHTASK A109. Performance field used with the FIELDS and SELECT operands; contains the priority of the transaction.

TRANRATE. Suboperand of the GRAPH report operand; requests the Transaction Rate graph report.

TRANROUT. CICS PA ID: TRANROUT CICSPA A003. Performance field used with the FIELDS operand; contains the number of Transaction Routing records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

TRANSUMMARY. RESUSAGE report operand to request the Transaction File Usage Summary report and the Transaction Temporary Storage Usage Summary report.

TRANTYPE. CMF ID: TRANFLAG DFHTASK A164. Performance field used with the FIELDS operand; contains an interpretation of the type of transaction from byte 1 of the transaction flags field.

TSBUFFER. Exception field used with the SELECT operand; contains the name of the temporary storage queue that waited for a buffer.

TSGET. CMF ID: TSGETCT DFHTEMP A044. Performance field used with the FIELDS and SELECT operands; contains the number of temporary storage PUT to auxiliary storage requests.

TSPUTAUX. CMF ID: TSPUTACT DFHTEMP A046. Performance field used with the FIELDS and SELECT operands; contains the number of temporary storage PUT to main storage requests.

TSPUTMCT. CMF ID: TSPUTMCT DFHTEMP A047. Performance field used with the FIELDS and SELECT operands; contains the number of temporary storage GET requests.

TSQNAME. CICS PA ID: TSQNAME CICSPA C917. Transaction resource class data field used with the SELECT operand; contains the Temporary Storage Queue name. Applicable to the Transaction Resource Usage reports and ignored by all others.

TSSHWAIT. CMF ID: TSSHWAIT DFHTEMP S178. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for an asynchronous shared temporary storage request to a temporary storage data server to complete. This field has two parts, a time value and a

count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TSSTRING. Exception field used with the SELECT operand; contains the name of the temporary storage queue that waited for a string.

TSTOTAL. CMF ID: TSTOTCT DFHTEMP A092. Performance field used with the FIELDS and SELECT operands; contains the total number of temporary storage requests issued by the user task.

TSWAIT. CMF ID: TSIOWTT DFHTEMP S011. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for VSAM temporary storage I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

U

UOWID. CICS PA ID: UOWID CICSPA C912. Performance field used with the FIELDS operand for the LIST and LISTX reports; contains the network unit-of-work ID.

UOWSEQ. CICS PA ID: UOWSEQ CICSPA C913. Performance field used with the FIELDS operand for the LIST and LISTX reports; contains the network unit-of-work ID sequence number.

USERID. CMF ID: USERID DFHCICS C089. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; an 8-byte character field that contains the User ID.

V

VALUE. Suboperand used when specifying user fields in the SELECT operand.

VBUFFERW. Exception field used with the SELECT operand; contains the 8-byte name of a file that incurred a wait for a VSAM buffer.

VSTRINGW. Exception field used with the SELECT operand; contains the 8-byte name of a file that incurred a wait for a VSAM string.

W

WAITANALYSIS. Report operand to request the Wait Analysis report.

WAITCICS. CMF ID: WTCEWAIT DFHTASK S182. This field is a component of the task suspend time, SUSPTIME S014. Performance field used with the FIELDS and SELECT operands; contains the elapsed

time the user task waited for one or more ECBs, passed to CICS by the user task using the EXEC CICS WAITCICS ECBLIST command, to be MVS POSTed. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

WAITEXT. CMF ID: WTEXWAIT DFHTASK S181. This field is a component of the task suspend time, SUSPTIME S014. Performance field used with the FIELDS and SELECT operands; contains the elapsed time that the user task waited for one or more ECBs, passed to CICS by the user task using the EXEC CICS WAIT EXTERNAL ECBLIST command, to be MVS POSTed. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

WBBROWSE. CMF ID: WBBRWCT DFHWEBB A239. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Interface (CWI) browse requests issued by the user task.

WBBRWOCT. CMF ID: DFHWEBB A338 WBBRWOCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support BROWSE HTTPHEADER requests.

WBCHRIN. CMF ID: WBCHRIN DFHWEBB A232. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from the CICS Web Interface (CWI).

WBCHRIN1. CMF ID: DFHWEBB A334 WBCHRIN1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support RECEIVE and CONVERSE characters.

WBCHROUT. CMF ID: WBCHROUT DFHWEBB A234. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to the CICS Web Interface (CWI).

WBCHROU1. CMF ID: DFHWEBB A336 WBCHROU1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support SEND and CONVERSE characters.

WBEXTRCT. CMF ID: WBEXTRCT DFHWEBB A238. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Interface (CWI) extract Web requests issued by the user task.

WBIWBSCT. CMF ID: DFHWEBB A340 WBIWBSCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS INVOKE WEBSERVICE requests.

WBPARSCT. CMF ID: DFHWEBB A337 WBPARSCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support PARSE URL requests.

WBRCV. CMF ID: WBRCVCT DFHWEBB A231. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Interface (CWI) RECEIVE requests issued by the user task.

WBRCVIN1. CMF ID: DFHWEBB A333 WBRCVIN1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support RECEIVE and CONVERSE requests.

WBREAD. CMF ID: WBREADCT DFHWEBB A224. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web support READ HTTPHEADER and FORMFIELD requests issued by the user task.

WBREDOCT. CMF ID: DFHWEBB A331 WBREDOCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support READ HTTPHEADER requests.

WBREPRCT. CMF ID: WBREPRCT DFHWEBB A236. Performance field used with the FIELDS and SELECT operands; contains the number of reads from the repository in shared temporary storage.

WBREPRDL. CMF ID: DFHWEBB A341 WBREPRDL. Performance field used with the FIELDS and SELECT operands; contains the repository read data length.

WBREPWCT. CMF ID: WBREPWCT DFHWEBB A237. Performance field used with the FIELDS and SELECT operands; contains the number of writes to the repository in shared temporary storage.

WBREPWDL. CMF ID: DFHWEBB A342 WBREPWDL. Performance field used with the FIELDS and SELECT operands; contains the repository write data length.

WBSEND. CMF ID: WBSENDCT DFHWEBB A233. Performance field used with the FIELDS and SELECT operands; contains the total number of Web SEND requests issued by the user task.

WBSNDOU1. CMF ID: DFHWEBB A335 WBSNDOU1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support SEND and CONVERSE requests.

WBTOTAL. CMF ID: WBTOTWCT DFHWEBB A235. Performance field used with the FIELDS and SELECT operands; contains the total number of Web requests issued.

WBWRITE. CMF ID: WBWRITCT DFHWEBB A225. Performance field used with the FIELDS and SELECT

operands; contains the number of CICS Web support WRITE HTTPHEADER requests issued by the user task.

WBWRTOCT. CMF ID: DFHWEBB A332 WBWRTOCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support WRITE HTTPHEADER requests.

WLM. Alias for WORKLOAD report operand.

WORKLOAD. Report operand used to request the Workload Manager Activity Report.

WRITEMultiple. Suboperand used on the CROSS operand. It specifies that the performance class records contained in a network unit-of-work that includes multiple records are to be written to an output data set.

WRITESingle. Suboperand used on the CROSS operand. It specifies that the performance class records that are contained in a network unit-of-work that includes a single record only are to be written to an output data set.

X

X8CPU. CMF ID: DFHTASK S271 X8CPUT. Performance field used with the FIELDS and SELECT operands; contains the CICS X8 TCB CPU time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

X9CPU. CMF ID: DFHTASK S272 X9CPUT. Performance field used with the FIELDS and SELECT operands; contains the user task X9 Mode CPU time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

Z

ZONE. Control operand (global); specifies the time zone to use for reporting. The format is ZONE(time zone). The time zone is an integer from -12 to +12 representing the number of hours that local time is west or east of GMT. If specified, it overrides your local CPU time zone setting. It is only useful if the SMF data comes from a system with a different time zone setting. Indeed, if this is the case, ZONE *must* be specified for the DB2, MQ, and System Logger reports to show correct times.

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