



Problem Determination Tools Version 13 for z/OS

Taking It to the Next Level

Development Tools for Today and the Future!

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Agenda

- Why the IBM Problem Determination Tools?
- What are the Problem Determination Tools?
- What's in Version 13 of the Problem Determination Tools?
- Problem Determination Tools and Graphical User Interfaces
- CICS & PD Tools Solution Packs
- PD Tools Version 13 Examples
- PD Tools Multiplatform – Tech Preview
- Resources
- Summary

Top 3 Reasons Why Clients Turn to IBM's Problem Determination Tools

Business (Vendor Issues)

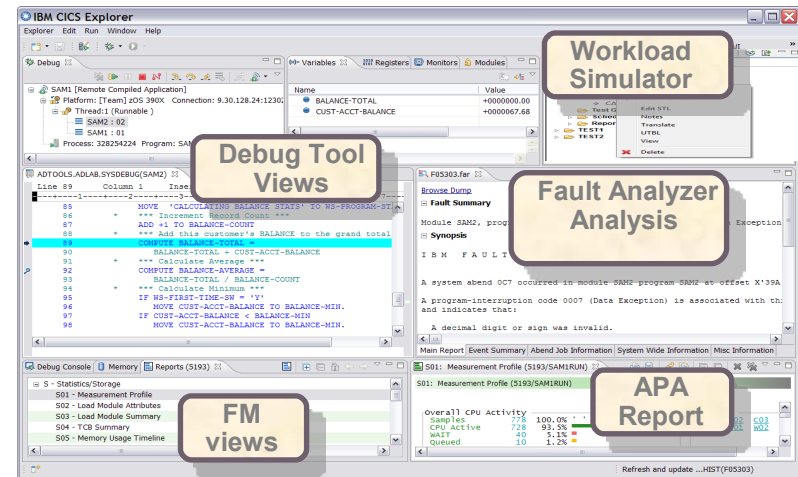
- Pricing Issues
 - Upgrade fees
 - Rising maintenance fees
 - Unplanned budget overages
 - Long term contracts

Technical (Product Issues)

- Ongoing enhancements
 - Integration with other products and hardware
 - Eclipse Plug-ins provide alternative/superior interface and integration capabilities
 - Subsystem and Language support simultaneous with subsystem/language delivery – all inclusive in IBM PD products
 - Product support
 - Administrative complexity

Application Development Environment

- Unable to deploy new applications on the platform that best meets business needs (z/OS)
- Reuse traditional assets in the Internet world
- Security and compliance - supports highest levels of security, enable audit trails

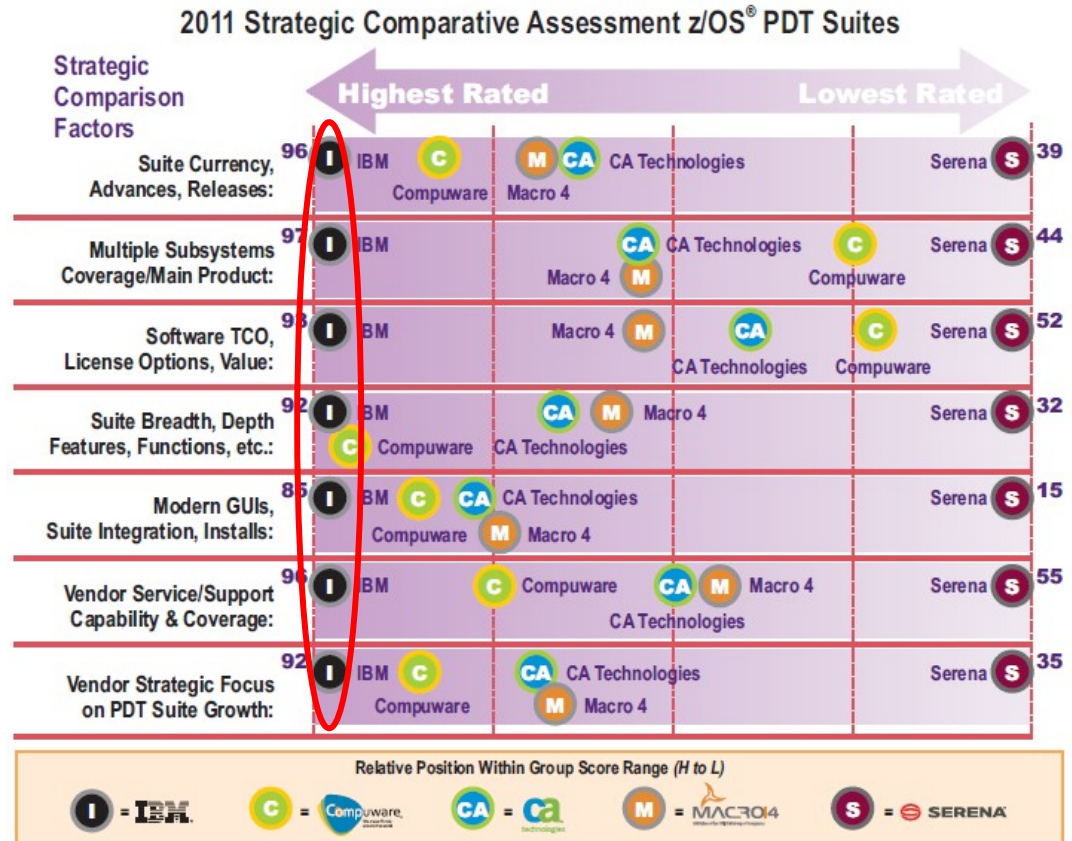


IBM Problem Determination Tools Wins Top Spot

Software Strategies Analyst Report, April 2011

IBM's PD Tools Suite Extends Technology Lead:

- IBM successfully challenged existing vendors in this segment since 2000
- Modern, well-featured, fully integrated, inclusive, and good-value
- The latest suite (V12) has now extended clear technology, feature and functional leadership over and above this reports findings



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Eliminate the Complexity, Gain Additional Functionality



Real Customer Example of Alternative Vendor Offerings Compared to IBM		
Edit and Browse	Abend Analysis	Debugging
EB Product 1	AA Product 1	Debug Product 1
EB Product 2	AA Product 2	Debug Product 2
EB Product 3	AA Product 3	Debug Product 3
EB Product 4		Debug Product 4
		Debug Product 5
		Debug Product 6
EB Product 5	AA Product 4	Debug Product 7
EB Product 6	AA Product 5	Debug Product 8
EB Product 7	AA Product 6	
EB Product 8	AA Product 7	
EB Product 9	AA Product 8	
	AA Product 9	
	AA Product 10	
	AA Product 11	
IBM File Manager	Fault Analyzer	DebugTool

Licensed Today →

Functionality Available to Purchase →

↑
Replace All That with





Customer references & surveys point to **IBM's Value** by providing a **better TCO** and **significant savings** over other ISVs

Type of Customer Industry	Savings	Why IBM ?
Automobile Industry	\$4.7M / 2 years	Competitive replacement for core functions. (FA,FM, DT, APA, WSIM)
Financial Company	\$5M / 3 years	Customer became current on z/OS, DB2, CICS and unable to utilize current ISV tools. Additional functionality in core tools and in new release has confirmed decision to move to IBM PD Tools. (FA, FM, APA, DT, IPT, RDz),
Major Energy Producer	\$2M	Multi-ISV replacement with PD Tools, DB2 Tools and Tivoli tools. Driven by TCO savings. (FA, FM)
Major Insurance Company	TCO	Replace competitive products on system with high CPU usage. TCO savings, quick conversion, quick training, liked high functionality.
Insurance Company	TCO	TCO savings, high function, competitive replacement. (APA, DT, FA)
Bank	50%	Entire portfolio replacement, need for platform currency. Chose IBM for multi-million dollar in savings, functional robustness, service and support. (FA,FM, DT, APA, WSIM)
Financial Services	TCO	Decrease # of tools, more flexible terms for capacity increases, and quick deployment (2 months). Achieved all objectives. (FA, FM, DT)



IBM Problem Determination Tools

KEY PD TOOLS and Functions:

- File Manager for z/OS Data management tool supporting key file structures like VSAM, DB2, CICS, IMS and MQ
- Debug Tool for z/OS Source code debugging to improve development productivity
- Fault Analyzer for z/OS Helps you rapidly pinpoint cause of failed application (program abend)
- Application Performance Analyzer for z/OS Monitor performance at the application level
- Workload Simulator for z/OS and OS/390 Regression and Load testing of interactive z/OS applications
- HourGlass – date time manipulation
- Data Set Commander – less key strokes for ISPF
- Migration Utility – converts CA-Easytrieve to standard IBM COBOL

The screenshot shows the IBM CICS Explorer interface. Callouts point to various components:

- Workload Simulator**: Located in the top right, showing a table with columns for Name and Value.
- Debug Tool Views**: Points to the main source code editor window showing COBOL code.
- Fault Analyzer**: Points to the 'Browse Dump' window showing a fault summary.
- FM views**: Points to the 'Debug Console' window showing system messages.

The screenshot shows the IBM CICS Explorer interface with a focus on the Application Performance Analyzer (APA) window. Callouts point to:

- Workload Simulator**: Located at the top left.
- Debug Tool**: Points to the source code editor.
- Fault Analyzer**: Points to the fault analysis window.
- Application Performance Analyzer**: Points to the APA window showing a table of system statistics.
- File Manager**: Points to the file management window.

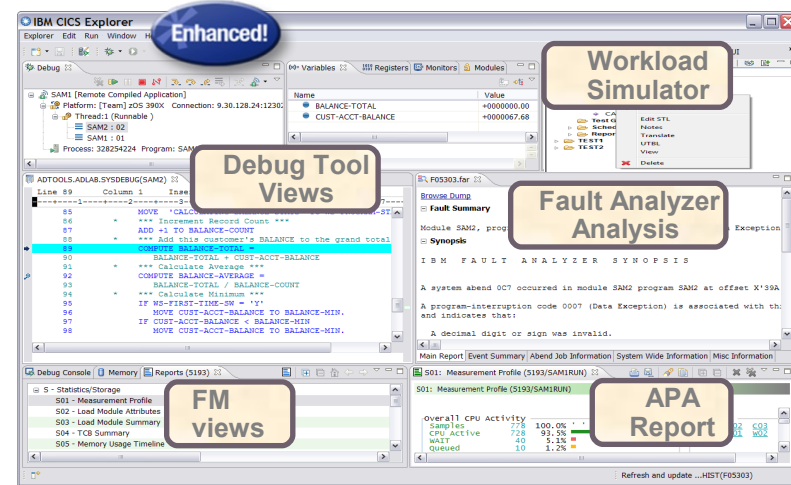
Ref	Field	Picture	Typ	Start	Len	Data
2	CUSTOMER-KEY	AN	1	5		
3	CUST-ID	X(5)	AN	1	5	02202
4	NAME	X(17)	AN	6	17	Major, Art
5	ACCT-BALANCE	S(7)V99 PD		23	5	1234.56
6	ORDERS-YTD	S(4)	BI	28	2	5
7	ADDR	X(20)	AN	30	20	1512 Pine Bluff
8	CITY	X(14)	AN	50	14	Harmon
9	STATE	X(02)	AN	64	2	MN
12	OCCUPATION	X(30)	AN	137	30	College student

I ♥ PD Tools



Smarter z/OS Problem Resolution! IBM Problem Determination Tools V13

- Key focus on **Optimization and Modernization**
- Decrease **TCO** with competitive pricing
- Latest support for **sub-systems and languages!**
- Decrease IT costs by **reducing overall application development time** while improving application performance by discovering/reducing performance bottlenecks
- Improves application reliability and **user diagnosis capabilities** - assists with fixing application logic
- Improves user ability to regulate and monitor application development activities while **simplifying quality process** and policy validation
- What's new:
 - ▶ Significant improvements to Debug Tool, Fault Analyzer, File Manager, Application Performance Analyzer, Workload Simulator, HourGlass , and Data Set Commander
 - ▶ Support for z/OS V2.1, DB2 V11., IMS V13, CICS TS 5.1, WASz 8.5, MQ 7.5, COBOL V5.1, Enterprise PLI V4.4, C/C++ for z/OS V2.1, Java V7, and RD/z V9.0
 - ▶ Java enhancements for APA, DT and FA allowing PD Tools to work in a “mixed mode” environments



Enhanced functional application performance analysis , code quality, and problem identification with Problem Determination Tools (PDT) V13

Several Key Focus Areas for PD Tools V13 Function In the Optimize and Modernize Realm



Optimize

- **Dynamic Debugging of IMS Region.** Benefits to User; 1) on demand - created only when a user needs to debug a transaction and it is gone when debug is completed (2) performance - the new region is for a specific user for his debugging only. It avoids the following problems in a normal setup where only a limited number of regions are available to service all transactions, (3) Without a permanent allocations of additional regions for debug, it saves the customer in resources (additional hardware, license..), 4) Resource contention eliminated.
- **Enhanced Code Coverage and reporting** – Improves coverage capabilities and management reporting – better quality code, rapid identification of problems
- **Performance & Storage Improvements** - Quicker, while using less resource
- **Sidefile checking and reporting enhancements** – Simplifies migration to PD Tools from others

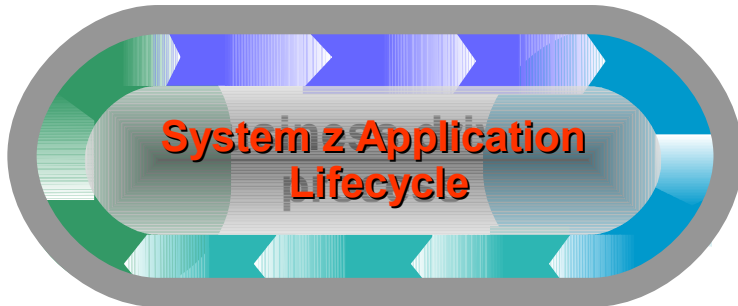
Modernize

- **Additional focus and emphasis on JAVA – APA, DT, and FA** - Provides problem determination tooling in “mixed mode” environments, allowing older applications to interact with leading edge applications.
- **Mobile/Cloud Access -Fault Analyzer web interface utilizing Dojo** – Easy client emergency access for abends on demand - easy access via cell phone, tablet, or any other device
- **Continuous enhancements to Eclipse based interfaces across PD portfolio** –
 - **File Manager Eclipse IMS GUI** – Provides ability to utilize IMS from GUI
- **Eclipse 4.2.2 platform support in alignment with IBM Explorer for z/OS and integration with RDz** – Increase in productivity when interacting between different tool products – faster ability to adapt to tools with GUI's as opposed to ISPF, additional productivity when PD Tools are used in conjunction with full blown development environment over ISPF (RDz).

Problem Determination Tools V13 GUIs To Meet Your Needs

- The GUIs are available with Rational Developer for z, for a full blown application development environment, or in conjunction in a systems environment as part of the PD Tools Studio, CICS Explorer, IMS Explorer on top of a z/OS Explorer base/technology
- Rational Developer for System z

CICS Explorer, IMS Explorer
or PD Tools Studio
with z/OS Explorer



IBM Explorer for z/OS® V2.1

Execution Tree,
Dependencies, Custom
Queries, Threadsafe,
Command Flow

CICS IA

Deployment,
Discovery,
Visualization, Cloning,
Automation & Control

CICS DA

Configuration,
Session and user
views, Broadcast,
User and Admin
commands

Session Mgr

Status
Situations
Topology

OM XE

CICS, IMS,DB2, z/OS
Application Debugging

Debug Tool

Threadsafe, File, CPU,
Response & Wait
analysis, Statistics,
Alerts, Graphical and
Sheet views

CICS PA

CRUD, Install, History,
Backout, Audit, Search,
Compare, Packaging

CICS CM

Configuration
Status
Control, Test

MQ

Manipulate, browse
z/OS data sets, z/FS,
VSAM, MQ, CICS, DB2


File Manager

Migrated file view

CICS VT

Daemon & Connection
Status & Test

CICS TG



IMS DB mgt

IMS Explorer

Source code control
Project & feature
mgt

**Rational Team
Concert**

CICS, IMS, DB2, z/OS
Abend Reporting &
Diagnosis

Fault Analyzer

CRUD, Install, Control, Filter, Sort, Topology, Events,
ATOM, Java, WLM, Txn Tracking, Copy/Paste, Cloud,
Web apps

CICS TS

DB2 mgt

Data Studio

Develop
Test

**Rational
Developer**

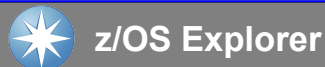
CICS, IMS, DB2, & z/OS
Observation Requests
& Reporting

App Perf Analyzer

3270 application
performance
testing

Workload Simulator

z/OS Connections, z/OS Datasets, zFS Files, JES jobs & output



CICS TS, IMS, DB2, MQ, z/OS

CICS Interdependency Analyzer for z/OS V5.1



Application insight

What's new in CICS IA V5.1...

- Support for CICS Transaction Server V5.1, including enhanced business application analysis
- New threadsafe analysis plug-in view and report
- Improved installation and configuration
- DB2 data lifecycle management
- Native SQL language stored procedures
- Graphical visualization view of resources

CICS IA enables you to...

- Identify threadsafe / non-threadsafe programs
- Isolate and remove affinities
- Speed CICSplex® SM workload management
- Advanced CICS command flow analysis
- Highlight CICS web service and mobile targets

Program	LIB Dataset Name	APIS	Concurrency	Ext.	Storage Prot.
IVDZ2518 (CICS TS 5.5)					
TST4CVDA	CICSIA.D.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE
TST4CVD1	CICSIA.D.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE
TST4CVD2	CICSIA.D.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE
TST4CVD3	CICSIA.D.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE
TST4CVD4	CICSIA.D.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE

Comm.	Function	Type	Object	Object Len.	Offset	Progr.	Use cou.	Thre.
MQ	CLOSE	QUEUE	CSQ4SAMP.	8	000063..	000073..	2	Y
CICS	IGNORE	CONDITL		0	000049..	000073..	2	Y
MQ	INQUIRE	QUEUE	CSQ4SAMP.	8	000063..	000073..	8	Y
CICS	LINK	PROGRA.	TST4CVD2	8	00005A..	000073..	2	I
CICS	LINK	PROGRA.	TST4CVD4	8	00005B..	000073..	2	I
MQ	OPEN	QUEUE	CSQ4SAMP.	8	000062..	000073..	2	Y
CICS	RECEIVE	MAP	CSQ4VDM	7	00004E..	000073..	2	N
CICS	RECEIVE	MAP	CSQ4VDM	7	00005C..	000073..	6	N
CICS	RECEIVE	MAPSET	CSQ4VDM	7	00004E..	000073..	2	N
CICS	RECEIVE	MAPSET	CSQ4VDM	7	00005C..	000073..	6	N
CICS	SEND	MAP	CSQ4VDM	7	00004E..	000073..	2	N
CICS	SEND	MAP	CSQ4VDM	7	00005B..	000073..	6	N
CICS	SEND	MAPSET	CSQ4VDM	7	00004E..	000073..	2	N
CICS	SEND	MAPSET	CSQ4VDM	7	00005B..	000073..	6	N
CICS	SEND	TEXT	SEND TEXT	10	00004D..	000073..	2	N

Solution Packs for CICS and z/OS – convenience and affordability

Four New Tools Solution Packs

CICS Optimization Solution Pack for z/OS V5.1

Quickly optimize performance of CICS systems and applications with CICS

Interdependency Analyzer, CICS Deployment Assistant, CICS Performance Analyzer, CICS Configuration Manager

CICS Modernization Solution Pack for z/OS V5.1

Understand deployed CICS application and system resources, connect from non-mainframe devices, and create CICS infrastructure to support the increased workload with CICS Interdependency Analyzer, CICS

Deployment Assistant, CICS Transaction Gateway for z/OS

IBM Problem Determination Solution Pack for z/OS V1.1

Cost effective problem analysis for z/OS sub-systems and languages with both GUI & 3270 interface with File Manager for z/OS, Fault

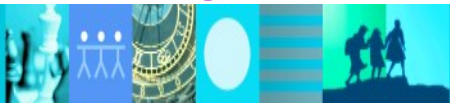
Analyzer for z/OS, Debug Tool for z/OS, Workload Simulator for z/OS and OS/390, Hour Glass, Data Set Commander

IBM Problem Determination Testing Solution Pack for z/OS V1.1

Reduce testing time, improve application reliability and user diagnosis capabilities, and improving user's ability to regulate and monitor testing activities with Debug Tool for z/OS , Workload

Simulator for z/OS and OS/390, Hour Glass

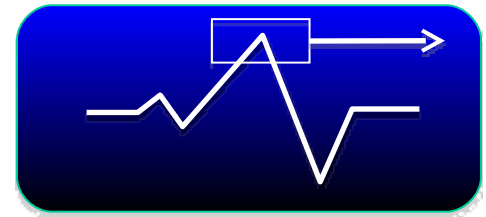
Upgrade from standalone products using trade-ups



IBM CICS Optimization Solution Pack for z/OS V5.1

Business Value?

An all “in-a-box” solution that includes key product offerings to quickly achieve ultra performance tuning of CICS systems and application yielding up to a 10%* reduction in CICS CPU MIPS consumption (based on IBM internal benchmarks)



What is it?

A market leading offering which speeds up the deployment of “performance optimized” CICS systems and applications. This solution pack provides a rich tooling set that can be used to optimize within CICS regions or across a complex topology that includes multiple regions. High end user productivity is achieved using a common eclipse based interface called the CICS Explorer.

What is included?

[CICS Interdependency Analyzer](#) – Collecting active information on deployed CICS resources

[CICS Deployment Assistant](#) – Visualization and provisioning of CICS regions

[CICS Performance Analyzer](#) – In depth tuning and capacity planning for CICS regions and applications

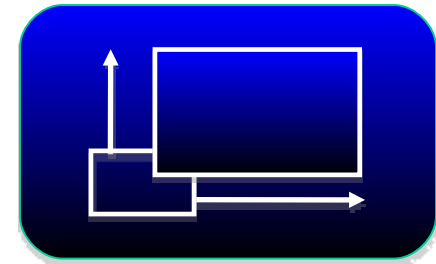
[CICS Configuration Manager](#) – Advanced management of CICS including auditing and deployment analysis



IBM CICS Modernization Solution Pack for z/OS, V5.1

Business Value?

An all “in-a-box” solution that includes key product offerings to quickly understand and visualize currently deployed CICS applications to enable successful modernization projects, including the ability to expand user access to key CICS resources with IBM’s most popular CICS connector technology.



What is it?

A market leading offering providing visualization, discovery and connectivity to key CICS resources to help address key CICS modernization requirements. High end user productivity is achieved using a common eclipse based interface called the CICS Explorer.

Included Offerings:

[CICS Interdependency Analyzer](#) – Collecting active information on deployed CICS resources

[CICS Deployment Assistant](#) – Visualization and provisioning of CICS regions

[CICS Transaction Gateway for z/OS](#) – Connecting non-CICS based application servers to CICS



IBM Problem Determination Solution Pack for z/OS V1.1

Business Value?

A money saving, ideal “all in one”, package which addresses and enhances client’s problem analysis needs. This is a offering of tools which assist with reducing IT costs by decreasing overall application development time, improving application reliability, and decreasing user diagnosis time. This solution pack is composed of key components ideal for takeout of alternative vendor offerings in the z/OS problem analysis space.



What is it?

This solution pack provides robust tooling which allows a client to utilize problem analysis capabilities for z/OS subsystems and languages in a cost effective manner using their choice of a GUI or 3270 interface.

Included Offerings:

[File Manager for z/OS](#) Data management tool supporting key file structures like VSAM, DB2, CICS, and IMS

[Fault Analyzer for z/OS](#) Helps you rapidly pinpoint cause of failed application (program abend)

[Debug Tool for z/OS](#) Source code debugging to improve development productivity

[Workload Simulator for z/OS and OS/390](#) Regression and Load testing of interactive z/OS applications

[Hour Glass](#) Date time manipulation

[Data Set Commander](#) Less key strokes for ISPF and boosts performance on common PDS functions



IBM Problem Determination Testing Solution Pack for z/OS V1.1

Business Value?

A money saving, ideal “all in one” testing package containing proven PD Tools to address all a client’s testing needs. This set of testing tools will assist the client with reducing overall testing time, improving application reliability and user diagnosis capabilities, and improving user’s ability to regulate and monitor testing activities.

The solution pack is composed of key components ideal for takeout of alternative vendor offerings in the z/OS problem analysis and testing space.



What is it?

This solution pack provides support for debugging, code coverage, simulating time changes, and generating and executing simulated workloads -all very important aspects of a robust z/OS based testing environment.

Included Offerings:

[Debug Tool for z/OS](#) - Source code debugging to improve development productivity. Code Coverage capabilities included.

[Workload Simulator for z/OS and OS/390](#) - Regression and Load testing of interactive z/OS applications

[Hour Glass](#) - Date time manipulation





More PD Tools V13 Content and Examples

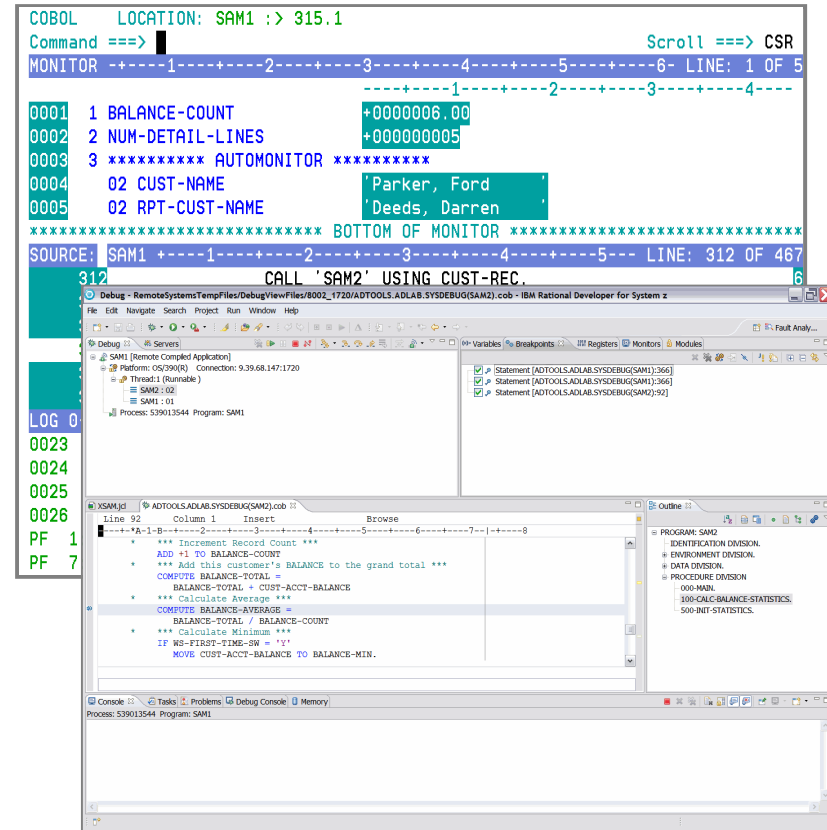
Debugging of enterprise applications

IBM Debug Version 13

- **IBM Debug Tool** can help you increase debugging efficiencies and reduce application development cycle times.
- Program testing and analysis aid that helps you examine, monitor, and control the execution of application programs on z/OS (CICS/DB2/IMS/COBOL/PLI/ASM,C/C++/ASM/JAVA w Toolkit)
- Proven 3270-based interface and free graphical user interface.

What's new?

- Smooth debugging mixed apps JAVA/COBOL/PLI
- Improved Code Coverage
- Automatic start IMS MPP regions, dynamic routing of transactions
- IMS Startup Cross Reference table for WASz and Web started transactions
- RDz Playback
- Support for DB2 V11, IMS V13, CICS TS 5.1, z/OS 2.1, WASz 8.5., COBOL V5.1, Enterprise PLI V4.4, C/C++ for z/OS 2.1, RDz 9.0
- A range of other enhancements to address key customer requirements



Source code debugging to improve development productivity



Pinpoint the cause of enterprise application failures

IBM Fault Analyzer Version 13

- **IBM Fault Analyzer** improves developer productivity and decreases deployment costs by helping to analyze and correct application failures quickly (CICS/DB2/IMS/MQ/COBOL/PLI/ASM/C/C++/ASM/JAVA).
- Develop and test new and existing applications more productively, helping to reduce costs along the way.
- Proven 3270-based interface and free graphical user interface.

What's new?

- Optimize
 - Sidefile checking and reporting
 - Customer specific module and abend descriptions
 - ISPF Virtual Relief
- Modernize
 - Enhanced web interface using Dojo
- Enhanced Java support
- Support for DB2 V11, IMS V13, CICS TS 5.1, z/OS 2.1, COBOL V5, PL/I V4.4, Java V7
- A range of key customer requirements

The screenshot displays the IBM Fault Analyzer interface. The top window shows a COBOL source code snippet with a system abend (0C7) and a fault summary. The bottom window shows a table of fault history.

```
File View Services Help
Synopsis Line 12 Col 1 80
Command ==>
JOBNAME: DNET246S SYSTEM ABEND: 0C7 DEMOMV5 2007/10/30 20:00:12
Source
Line #
000088 * *** Add this customer's BALANCE to the grand total ***
000089 COMPUTE BALANCE-TOTAL =
000090 BALANCE-TOTAL + CUST-ACCT-BALANCE

The COBOL source code for data fields involved in the failure:

Source
Line #
0000
0000
0000
Data f
BALA
CUST
*** Bc
```

IBM CICS Explorer

Explorer Edit Project Search Window Help

Fault Analyzer Artifacts

FA Artifacts

9:30:128-24-8000

DEMOMV5.DEMOPKG.IBM.COM

History Files

FAULTANL.V11R1.HST

F00047.far

Module SAM2, program SAM2, source line # 82: Abend 0C7 (Data Exception)

IBM FAULT ANALYZER SYNOPSIS

A system abend 0C7 occurred in module SAM2 program SAM2 at offset X'366'.

Main Report | Event Summary | Abend Job Information | System Wide Information | Misc Information

Default | Lookup

System Name DEMOMV5.DEMOPKG.IBM.COM:5124

Fault History File or View FAULTANL.V11R1.HST

Fault_ID	Job/Tran	User_ID	Sys/Job	Abend	1_Abend	Job
F00047	DNET47A	DNET47F	DEMOMV5	S0C7	S0C7	J080
F00046	DNET422	DNET422	DEMOMV5	S522	S522	ST00
F00045	DTCN	DS09001	CICSACR1	ATN1	ATN1	STCO
F00044	DS09001A	DS09001	DEMOMV5	S0C7	S0C7	J080
F00043	CICSCMJ	DS02006	DEMOMV5	S047	S047	J080
F00042	DS09485	DS09485	DEMOMV5	S0C7	S0C7	TSU0
F00041	RLN8B2C	DS01986	DEMOMV5	S0C1	S0C1	J080
F00040	DS09001A	DS09001	DEMOMV5	S0C7	S0C7	J080
F00039	RLN8B2C	DS01986	DEMOMV5	S0C1	S0C1	J080
F00038	TESTING	DS05280	DEMOMV5	S378	S378	J080
F00037	TESTING	DS05280	DEMOMV5	S378	S378	J080
F00036	TESTING	DS05280	DEMOMV5	S378	S378	J080

Helps to identify the cause, analyze the failure, and fix the problem

Fault Analyzer Java and Mixed Mode



Fault Analyzer - FaultAnalyzer/pthfael1/7797/SIMCOCK.HISTORY/F07351/F07351.fam1 - IBM Rational Developer for zEnterprise

File Edit Navigate Search Project Run Window Help

Database De... Java Debug Fault Analyzer Enterprise De...

Fault Analyzer O Navigator

pthfael1 : 7797 [pthfael1:7797]

- SIMCOC2.HISTORY
- SIMCOCK.HISTORY

pthfael1:7797/SIMCOCK.HISTORY(F07351)

```

5
6 The following events are presented in chronological order.
7
8 Event          Fail Module  Program  EP
9 #  Type        Point Name   Name     Name     Event Location (*) Description
10 -----
11 1  Call          BPXINLPA n/a      n/a      M+4D95A   From LPA
12 2  Call          n/a      n/a      n/a      n/a      From not determined
13 3  Call          CEEBINIT n/a      CEEOPCM E+96A    POSIX MiniMain routine; From LPA
14 4  >>> XPLink   CEEPLPKA n/a      CEEVRON E+1200   Run on down stack swap; From LPA
15 5  Call          java     n/a      JavaMain E+15BC   From /apc/javasdk601/31bit/SR5FP2/usr/lpp/java/J6.0.1/bin/
16 6  Java          n/a      n/a      n/a      n/a      Javatest1.main
17                               L#21    From not determined
18 7  Call          n/a      n/a      Java_com_ibm_faultanalyzer_Snap_SDump
19                               n/a    From not determined
20 8">8 <<< XPLink CEEPLPKA n/a      CEEVRON E+107E   CEL Common Runtime; From LPA
21 9  Call          IDISJLD n/a      FaultAnalyzerSnap_SDump
22                               E+940  From not determined
23 10 Call         IDISJLD n/a      n/a      M+13E06   From not determined
24 11 Call         ***** IDISJLD n/a      n/a      M+12EF2   From not determined
25 12 Call         IEFJSREQ n/a      n/a      M+E4      From LPA
26 13 Call         n/a      n/a      n/a      n/a      From CSA
27 14 Call         n/a      n/a      n/a      n/a      From not determined
28 15 IDISNAP      n/a      n/a      n/a      n/a      From not determined; All "n/a" due to not executing in home ASID
29
30 (*) One or more of the following abbreviations might appear in the "Event
31 Location" column:
32
33 F#n Source file number (refer to detailed event information for file
34 identification)
35 L#n Source file line number
36 S#n Listing file statement number (refer to detailed event information for
37 file identification)
38 M+x Offset from start of load module
39 P+x Offset from start of program
40 E+x Offset from start of entry point

```

Main Report Event Details Abend Information System-Wide Information Miscellaneous

pthfael1 : 7797/SIMCOCK.HISTORY Lookup Markers Progress

Manage configurations

FAULT_ID	JOB/TRAN	USER_ID	SYS/JOB	ABEND	I_ABEND	JOB_ID	JOBNAME	USERNAME	DUPS	LOCK
F07351	ALPOGA4	ALPOGA	FAE1 /ALPOGA4	n/a	n/a	STC30503	ALPOGA4			/

Outline

- Summary
- Synopsis
- Event summary
- Event details
- Abend job info
- System wide info
- Prolog
- Options in effect
- Epilog
- Minidump

Fault Analyzer Java



Fault Analyzer - FaultAnalyzer/PTHFAE1/7797/SIMCOCK.HISTORY/F07351/\$1712.JAVA - IBM Problem Determination Tools Studio

File Edit Source Refactor Navigate Search Project Run Window Help

File Manager Fault Analyzer z/OS Quick Access

Systems Inform... Navigator

Type here to search the tree (Ctrl+F)

- PTHFAE1:7797 - PTHFAE1:7797
 - Fault Analyzer for z/OS
 - Browse History Files
 - SIMCOCK.HISTORY
 - Action History
 - CICS
 - Data Sets
 - DB2
 - HFS
 - IMS
 - Message Queue Managers

Outline

- Javatest1
 - appxPublicStaticString : String
 - appxPrivateChar : char
 - main(String[]): void
- Account
 - name : String
 - days : int[]
 - inta : int[][]
 - phone : long
 - names7 : String[]
 - names : String[][]
 - tranArray : ArrayList<Transaction
 - Account(String, long, int)

```
@
import java.io.*;
//java -Xdump:system:events=throw,filter=*FAException* ,dsn=%uid.hello.dump2,op
//now trying with the FA Snap call
public class Javatest1 {
    public static String appxPublicStaticString;
    private char appxPrivateChar = 'U';

    public static void main( String [] args ) throws Exception {
        appxPublicStaticString = "appxStarted";
        System.out.println( "Path=" + System.getProperty( "java.library.path" ) );
        float appxFloat = 2.781f;
        int appxDepartment = 616;
        Account account = null;
        System.out.println( "Java Javatest1!" );
        Account[] accountHistoryArray = new Account[7];
        try {
            account = new Account("Fred Bear appx", 1800999888, 7000);
            account.addTran(account, 100.00);
            account.addTran(account, 250.00);
            account.addTran(account, -20.00);
        } catch( Exception e ) {
            System.out.println( "Java catch!" );
            double appxPi = 3.14159265358979;
            //com.ibm.faultanalyzer.Snap.Dump( "HELLO.IDISNAP" );
            throw e;
        }
        System.out.println(account.name + " " + account.tranArray.get(1).amount);
        System.out.println(accountHistoryArray[0]);
        //throw new FAException("cause final exception");
        //com.ibm.faultanalyzer.Snap.Dump("final call to fa snap Dump");
    }
}

class Account {
    String name;
    int[] days = {21,22,23,24,25};
    int[][] inta = new int[2][3][4];
    long phone;
    String[] names7 = new String[7];
}
```

PTHFAE1: 7797/SIMCOCK.HISTORY Lookup Markers

FAULT_ID	JOB/TRAN	USER_ID	SYS/JOB	ABEND	I_ABEND	JOB_ID	JOBNAME	USERNAME	
F77838	AS680F1 /ASTG	SIMCOC2	FAE1 /AS680F1	IDIS	IDIS	JOB35523	AS680F1		
F77837	AS680F1 /ASTG	SIMCOC2	FAE1 /AS680F1	IDIS	IDIS	JOB35523	AS680F1		
F77836	AS680F1 /ASTG	SIMCOC2	FAE1 /AS680F1	IDIS	IDIS	JOB35523	AS680F1		
F76523	AS680F1 /CFA	SIMCOCK	FAE1 /AS680F1	FLT1	FLT1	JOB27165	AS680F1		

Writable Smart Insert 21 : 1 Downloading mindump

Fault Analyzer Java via Web Interface



The screenshot displays the IBM Fault Analyzer web interface. The main window is titled "Fault Analyzer" and shows a list of events. The selected event, "Event 6", is expanded to show the source code of the Java application. The source code is displayed in a window titled "Source Code" and includes the following code:

```
Line #Statement #Source
1 1 @
2 2 import java.io.*;
3 3 import java.util.*;
4 4 //java -Xdump:system:events=throw,filter=FAException* ,dsn=%uid.hello.dump2,op
5 5 //now trying with the FA Snap call
6 6 public class Javatest1 {
7 7     public static String appxPublicStaticString;
8 8     private char appxPrivateChar = 'U';
9 9
10 10     public static void main( String [] args ) throws Exception {
11 11         appxPublicStaticString = "appxStarted";
12 12         System.out.println( "Path=" + System.getProperty( "java.library.path" ) );
13 13         float appxFloat = 2.781f;
14 14         int appxDepartment = 616;
15 15         Account account = null;
16 16         System.out.println( "Java Javatest1!" );
17 17         Account[] accountHistoryArray = new Account[7];
18 18         try {
19 19             account = new Account("Fred Bear appx", 1800999888, 7000);
20 20             account.addTran(account, 100.00);
21 21             account.addTran(account, 250.00);
22 22             account.addTran(account, -20.00);
23 23         }catch( Exception e ) {
24 24             System.out.println( "Java catch!" );
25 25             double appxPi = 3.14159265358979;
26 26             //com.ibm.faultanalyzer.Snap.Dump( "HELLO.IDISNAP" );
27 27             throw e;
28 28         }
29 29         System.out.println(account.name + " " + account.tranArray.get(1).amount);
30 30         System.out.println(accountHistoryArray[0]);
31 31         //throw new FAException("cause final exception");
32 32         //com.ibm.faultanalyzer.Snap.Dump("final call to fa snap Dump");
33 33     }
34 34 }
35 35
36 36 class Account {
37 37     String name;
38 38     int[] days =(21,22,23,24,25);
39 39     int[][][] inta = new int[2][3][4];
40 40     long phone;
41 41     String[] names7 = new String[7];
42 42     String[][] names;
43 43     ArrayList tranArray = null;
44 44
45 45     public Account(String name, long phone, int intaStart) { // constructor
```

The source code window also shows the following code:

```
System.out.println( "Java Javatest1!" );
Account[] accountHistoryArray = new Account[7];
try {
    account = new Account("Fred Bear appx", 1800999888, 7000);
    account.addTran(account, 100.00);
    account.addTran(account, 250.00);
    account.addTran(account, -20.00);
}catch( Exception e ) {
    System.out.println( "Java catch!" );
    double appxPi = 3.14159265358979;
    //com.ibm.faultanalyzer.Snap.Dump( "HELLO.IDISNAP" );
}
```

The interface also shows a table of events and a table of fault data.

Summary	Events	Job Info	System Info	Report Info	User notes	User bookmarks	Mir
No filter applied							
FAULT_ID	JOB/TRAN	USER_ID	SYSJOB				

Manage a variety of enterprise data file structures

IBM File Manager Version 13

- **IBM File Manager** allows you to manage production, test, and development data across multiple formats and storage media.
- Create, edit, copy, browse, extract, print, and compare enterprise data (VSAM/DB2/IMS,CICS/MQ)
- Proven 3270-based interface and free graphical user interface.

What's new?

- IMS GUI
- FM DB2 enhancements
- Batch template and update support
- UNICODE and various CCSIDs support
- Support for DB2 V11, IMS V13, CICS TS 5.1, MQ8.5, z/OS2.1, PL/I 4.4,
- DB2 Large Object (LOB) including XML columns
- A range of other enhancements to address key customer requirements

The screenshot displays the IBM File Manager interface. The top window shows a command prompt with the following text:

```
Process Options Help
Edit FI:TSS12CUS DS:TSS12.ADLAB.CUS + Rec 3
Command ==> Scroll CSR
Key 02202 Type KSDS Format SNGL
Top Line is 1 of 15
Length 331
```

The current record is displayed as follows:

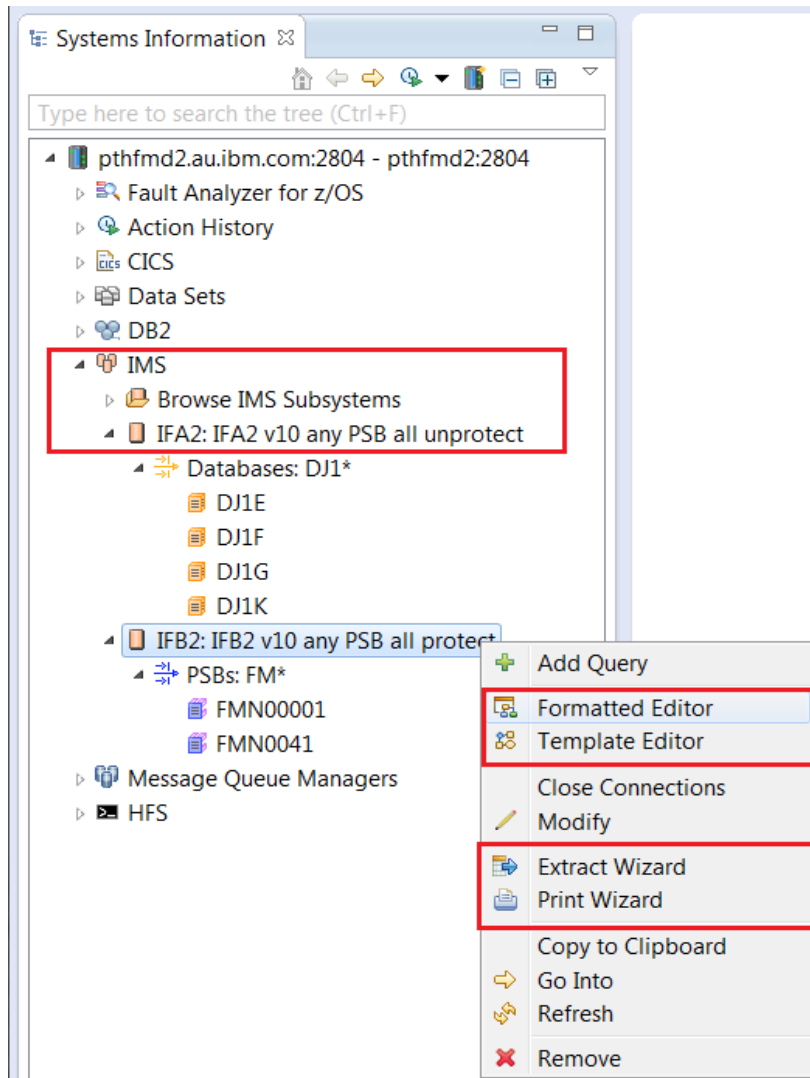
```
Current 01: CUST-REC
Ref Field Picture Typ Start Len Data
2 2 CUSTOMER-KEY
AN 1 5
3 3 CUST-ID
X(5) AN 1 5 02202
```

The bottom window shows a table of data with the following columns: PERSONID, FIRSTNAME, SURNAME, PHONE, POSTCODE, and COUNTRY.

PERSONID	FIRSTNAME	SURNAME	PHONE	POSTCODE	COUNTRY
1	100	Roanna Ryan	(581) 219-5666	45760	Colombia
2	101	Jocelyn Clayton	(471) 342-2303	98900	Bolivia
3	102	Alma Massey	(761) 407-1773	96909	Italy
4	103	Emily Ellis	(735) 824-8349	96010	Bermuda
5	104	Talon Dickerson	(865) 152-0625	52311	Nepal
6	105	Keelie Weiss	(998) 495-3164	83644	Cuba
7	106	Orlando Larsen	(800) 753-0647	46120	Bhutan

Data management tool supporting key file structures like VSAM, DB2, CICS, and IMS

Navigation to IMS Resources and Invoking FM Functions



- **Navigation to IMS resources (databases and PSBs) in the consistent approach with the rest of resource types supported by FM.**
 - Expand “*Browse IMS Subsystem*” node to browse IMS subsystems that are defined in the FM options.
 - Add queries for looking up specific databases and PSBs.
- **All FM functions accessible via context menu.**
 - Formatted edit of IMS databases using static or dynamic PSBs.
 - Invocation of FM utility functions: Extract and Print.
 - Accessing databases in BMP mode as well as DL/I mode.
 - Template editor for creating/modifying FM IMS templates and views.

FM IMS Editor Invocation

- Edit IMS databases in BMP mode as well as DL/I mode using static PSBs or dynamic PSBs.
- Specify database positioning values and start an edit/view session.



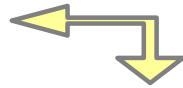
IMS Editor Options
Specify IMS editor options.

Subsystem information
Subsystem: IFA2: IFA2 v10 any PSB all unprotect
Region type: BMP DLI
 Edit Database Data Sets
IMS log: Keep Delete None

Database information
PSB type: Dynamic Static
Database name: SUBD
Secondary index:

File Manager editor options
View name:
 Use template
Encoding: cp037
GRAPHIC Encoding:

Edit View Cancel



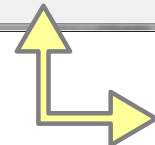
Database Positioning
Specify the starting position of the data.

Subsystem: IFA2: IFA2 v10 any PSB all unprotect Database name: SUBD

Level	Segment	Description	Key le...	Key value
<input checked="" type="checkbox"/> 1	SUBSUB		30	ABBA RIVER
<input checked="" type="checkbox"/> 2	SUBSTR		35
<input checked="" type="checkbox"/> 2	SUBNST		30
<input checked="" type="checkbox"/> 3	SUBSLT		10
<input checked="" type="checkbox"/> 2	SUBSYNFR		30
<input checked="" type="checkbox"/> 2	SUBSYNTO		30
<input checked="" type="checkbox"/> 2	SUBSHR		31
<input checked="" type="checkbox"/> 2	SUBMAIL		4

Key greater than or equal to

OK Cancel



Start edit session

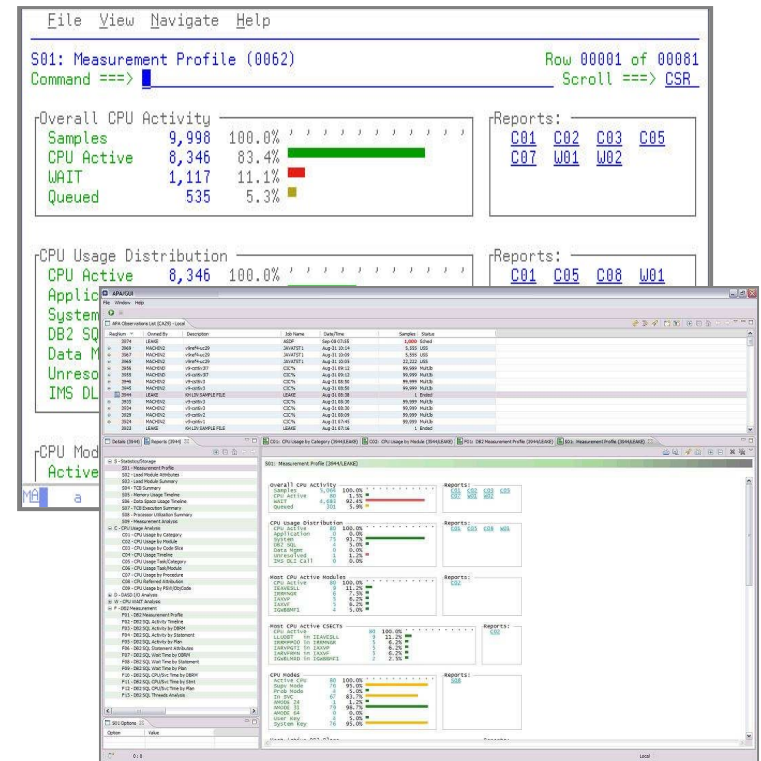
Pinpointing where application performance problems occur

IBM Application Performance Analyzer Version 13

- **IBM Application Performance Analyzer** helps maximize the performance of your applications and improve the response time of your online transactions and batch turnaround.
- Identify constraints and improve the entire application's performance no matter where the problem resides (CICS/ IMS/DB2/MQ/COBOL/PLI/ASM/JAVA)
- Proven 3270-based interface and free graphical user interface.

What new?

- Enhanced support for WebSphere and Java
- Sampling enhancements to improve accuracy of reports
- WAS Phase 2 to support simultaneous sampling of servant regions, CICS and DB2 activity
- Support for DB2 V11, IMS V13, CICS TS V5.1, z/OS 2.1, WASz V8.5, COBOL V5.1, PL/I V4.4, Java V7
- A range of key customer requirements



Monitor and optimize performance at the application level

APA Observation for WebSphere, Java, DB2, CICS RPC

ReqNum	Owned By	Description	Job Name	Date/Time	Samples	Status	Del Days
0017	AHM01	HFS ErrMsg	AIFHINSK	Oct-07 12:55	1,000	USS	Keep
0015	AHM01	VSAM MULTI-VOL	READFILE	Oct-07 12:52	45,124	Ended	Keep
0014	AHM01	BSAM MULTI-VOL	BSAMMVOL	Oct-07 12:50	1,336	Ended	Keep
0013	AHM01	CICS	CICS42A	Oct-07 12:16	10,000	Ended	Keep
0012	AHM01	COBOL v5 DWARF	COBTEST	Oct-07 11:33	1,615	Ended	Keep
0006	AHM01	WAS Java/DB2/CICS	BZSR00B	Oct-03 12:14	90	Ended	Keep
0009		0001 BPXBATSL BZ...		Oct-03 12:14	3,978	Ended	Keep
0007		0001 BPXBATSL BZ...		Oct-03 12:14	4,284	Ended	Keep
0011		0001 DSNX9WLM		Oct-03 12:14	3,022	Ended	Keep
0010		0001 DSNX9WLM		Oct-03 12:14	3,201	Ended	Keep
0008		0001 DSNX9WLM		Oct-03 12:14	1,200	Ended	Keep

Property	Value
DSNHLQ	BCAZ.CZAD
Job	FF#APADM
Started	2013-10-03 11...
Sysplex	CAZPLAD
Version	13.10A

Reports (0006)

- S - Statistics/Storage
 - S01 - Measurement Profile
- B - WebSphere Application Server
 - B01 - WAS Summary
 - B02 - WAS Activity
 - B03 - WAS Activity by Origin
 - B04 - WAS Activity by Servant
 - B05 - WAS EJB Activity
 - B06 - WAS EJB Activity by Origin
 - B07 - WAS EJB Activity by Servant
 - B08 - WAS Servlet/JSP Activity
 - B09 - WAS Servlet/JSP Activity by Origin
 - B10 - WAS Servlet/JSP Activity by Servant

IZE01001 Connected to 207.245.47.112:8213 - ahm01

CS#CZ13

APA observation for WebSphere, Java, DB2 & CICS RPC

- Observation 0006 reports WebSphere activity invoked from WAS controller in reports B01 to B10 (available since APA v12; unchanged in APA v13)
- APA creates a hierarchy of observations to report Java, DB2 and CICS RPC initiated from WAS servant regions (APA v12.10E APAR 73601)

APA Observation for WebSphere, Java, DB2, CICS RPC

APA - IBM Problem Determination Tools Studio

File Edit Navigate Search Project Run Window Help

Quick Access File Manager APA

STC View

(CZAD) - Local Host Connections

ReqNum	Owned By	Description	Job Name	Date/Time	Samples	Status	Del Days
0017	AHM01	HFS ErrMsg	AIFHINSK	Oct-07 12:55	1,000	USS	Keep
0015	AHM01	VSAM MULTI-VOL	READFEILA	Oct-07 12:52	45,124	Ended	Keep
0014	AHM01	BSAM MULTI-VOL	BSAMMVOL	Oct-07 12:50	1,336	Ended	Keep
0013	AHM01	CICS	CICS42A	Oct-07 12:16	10,000	Ended	Keep
0012	AHM01	COBOL v5 DWARF	COBTEST	Oct-07 11:33	1,615	Ended	Keep
0006	AHM01	WAS Java/DB2/CICS	BZSR00B	Oct-03 12:14	90	Ended	Keep
0009		0001 BPXBATSL BZSR00B5		Oct-03 12:14	3,978	Ended	Keep
0007		0001 BPXBATSL BZSR00B5		Oct-03 12:14	4,284	Ended	Keep
0011		0001 DSNX9WLM		Oct-03 12:14	3,022	Ended	Keep
0010		0001 DSNX9WLM		Oct-03 12:14	3,201	Ended	Keep
0008		0001 DSNX9WLM		Oct-03 12:14	4,208	Ended	Keep

Reports (0007)

- F - DB2 Measurement
- J - Java Measurement
- B - WebSphere Application Server
 - B01 - WAS Summary
 - B02 - WAS Activity
 - B03 - WAS Activity by Origin
 - B04 - WAS Activity by Servant
 - B05 - WAS EJB Activity
 - B06 - WAS EJB Activity by Origin
 - B07 - WAS EJB Activity by Servant
 - B08 - WAS Servlet/JSP Activity
 - B09 - WAS Servlet/JSP Activity by Origin
 - B10 - WAS Servlet/JSP Activity by Servant
 - B11 - WAS/CICS Calls
 - B12 - WAS/DB2 Calls

Property Value

DSNHLQ	BCAZ.CZAD
Job	FF#APADM
Started	2013-10-03 11:...
Sysplex	CAZPLAD
Version	13.10A

IE01001 Connected to 207.245.47.112:8213 - ahm01

CS#CZ13

APA observation for WebSphere, Java, DB2 & CICS RPC

- Observation 0007 reports Java activity, DB2 activity and CICS RPC calls from the WAS servant region (APA v12.10E APAR 73601)
- WebSphere controller reports B01 to B10 are carried into the child observation for user convenience

Enterprise COBOL V5

```
Load Module: COBTEST1 LIB: AGM01.CICS.LOADLIB CSECT: COBTEST2
Mapped by: AGM01.CICS.LOADLIB(COBTEST1) (COBOL)
Compiler: Enterprise COBOL V05.01.00 Compile Time: 2013/02/12 13:18:04
```

LineNo	offset	Count	Source Statement
<u>000001</u>			IDENTIFICATION DIVISION.
<u>000002</u>	000000	1	PROGRAM-ID. COBTEST2.
<u>000003</u>			DATE-COMPILED. TODAY.
<u>000004</u>			ENVIRONMENT DIVISION.

			21 line(s) not displayed
<u>000026</u>	0001D2		MOVE 0 TO RETURN-CODE.
<u>000027</u>	0001DA		MOVE 1 TO WS-SUB.
<u>000028</u>	0001E2	25	PERFORM LOOP 1000 TIMES.
<u>000029</u>	000216		GOBACK.
<u>000030</u>			LOOP.
<u>000031</u>	000280	12	EVALUATE WS-SUB
<u>000032</u>	000282	6	WHEN 1
<u>000033</u>	00028E	32	MOVE 'A' TO WS-ARRAY (WS-SUB)
<u>000034</u>	0002AE	23	WHEN 2
<u>000035</u>	0002BA	36	MOVE 'B' TO WS-ARRAY (WS-SUB)
<u>000036</u>	0002DA	32	WHEN 3
<u>000037</u>	0002E6	54	MOVE 'C' TO WS-ARRAY (WS-SUB)
<u>000038</u>	000306	25	WHEN 4
<u>000039</u>	000312	31	MOVE 'D' TO WS-ARRAY (WS-SUB)
<u>000040</u>	000332	80	WHEN 5
<u>000041</u>	00033E	30	MOVE 'E' TO WS-ARRAY (WS-SUB)
<u>000042</u>	00035E	13	WHEN 6
<u>000043</u>	00036A	35	MOVE 'F' TO WS-ARRAY (WS-SUB)
<u>000044</u>	00038A	40	WHEN 7

Enterprise COBOL v5 DWARF source mapping

- Enterprise COBOL v5 DWARF source is embedded in the COBOL v5 load module when the program is compiled with the TEST option.
- No source information files are necessary in the Mapping Repository (ISPF A04 and A05 equivalent)
- APA reads source directly from the load module.
- Alternative is to source map with compile listing. SYSDEBUG source mapping is not available.



Regression and load test interactive z/OS applications

IBM Workload Simulator

- **IBM Workload Simulator** helps eliminate the need for large amounts of terminal hardware and terminal operator time for testing.
- Ideal for stress, performance, regression, function, and capacity planning tests.
- Proven 3270-based interface and new free graphical user interface.

What's new?

- Graphical user interface (GUI) updates provides access to the power of the host product

The screenshot displays the WSim Test Manager interface. At the top, it says "WSim Test Manager" and "Select one of the following. Then press Enter." Below this is a table of commands and their actions:

Command	Action
1. CASE	Create and Process Testcases
2. GROUP	Create and Process Testgroups
3. CYCLE	Create and Process Testcycles
4. RUN	Create WSim networks and Schedule WSim Simulation Runs
D. DDC	Create Test Documentation
P. PROJECT	Add/Change Project or Alternate HLI
U. UTIL	Run WSim Test Manager Utilities
W. WII	Invoke WSim/ISPF Interface

Below the table, it says "Project:" and "Alternate HLI:". The main part of the screenshot shows a graphical user interface with a "Project View" pane on the left and a "Test case overview" pane on the right. The "Project View" pane shows a tree structure with "CASE3" selected, and a context menu is open over it. The "Test case overview" pane shows fields for "Name: CASE3" and "Description: V case1".

Simulates a network of terminals and the associated messages

Date and Time Simulation for z/OS applications

IBM HourGlass V7.1 (Announce: October 1, GA: December 6)

- **IBM HourGlass** allows testing of time-sensitive application programs without dedicated individual LPARs or costly IPLs
- Provides support for popular middleware elements such as DB2, IMS, CICS, and COBOL, on the z/OS platform.
- Proven 3270-based interface and batch interface options.

What's new?

- Support for SYSPLEX synchronization
- Additional CICS, IMS invocation command options supported
- Dynamic update of repository
- JES exit to ensure time options are valid

```
----- IBM HourGlass: Control Overview -----1 of 1000
Command ==>
```

Cmd	Sel/Stat/Disp	Type	Name	Owner	Job/name	User-ID	Date	Time
---	DISA	DB2	CEDB001	AGGUSR	PLAN1	USRDEV	2006-01-01	M0100
---	ENAB	DB2	CEDB002	AGGUSR	PLAN2	TSNAM	2006-02-01	M0100
---	ENAB	IMS	CEIM001	AGGUSR	REG1	USRDEV1	2006-01-01	P0100
---	DISA	IMS	CEIM002	AGGUSR	REG2	USRDEV2	2006-02-01	M0200
---	DISA	JSCD	CEJS001	AGGUSR			2006-01-01	M0400
---	DISA	JSCD	CEJS002	AGGUSR			2006-02-01	A1600
---	ENAB	MBAT	CEMB001	AGGUSR	USRJOB1		2007-01-01	M0100
---	ENAB	MBAT	CEMB002	AGGUSR	USRJOB2		2007-02-01	P0100
---	ENAB	MBAT	CEMB003	AGGUSR	USRJOB3		2007-03-01	M0300
---	ENAB	MBAT	CEMB004	AGGUSR	USRJOB4		2007-04-01	P0200
---	ENAB	MBAT	CEMB005	AGGUSR	USRJOB5		2007-05-01	M0500
---	ENAB	MBAT	CEMB006	AGGUSR	USRJOB6		2007-06-01	M0100
---	ENAB	TSOI	CETTI001	AGGUSR		USRDEV	2005-11-30	M0100
---	DISA	TSOI	CETTI002	AGGUSR		USRHRQ	2005-05-01	M0400

```
----- IBM
SPECIFY TO THE CURRENT

HGCC GLOBAL DATE ==> 2011-12-14
                                FORMAT IS ccyy-mm-dd, WHERE:
                                ccyy = FULL 4 DIGIT YEAR
                                mm = 2 DIGIT MONTH
                                dd = 2 DIGIT DAY

HGCC GLOBAL TIME ==> P3000
                                FORMAT IS dhmm, WHERE:
                                d = "P" OR "E" FOR PLUS OFFSET
                                d = "M" OR "W" FOR MINUS OFFSET
                                d = "A" FOR ABSOLUTE TIME VALUE
                                hh = HOURS (00-23)
                                mm = MINUTES (00-59)
                                ASS=H,

//STEPLIB DD DISP=SHR,DSN=&SYSUID.,ADLAB.LOAD
// DD DISP=SHR,DSN=HRGLASS.CEE.SCEERUN
//CUSTFILE DD DSN=&SYSUID.,ADLAB.FILES(CUST2FA),DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//CUSTRPT DD SYSOUT=*
```

Simulates date and time for future and past dates, time zone shifting, etc.

Take command of your data sets to improve IT productivity

Data Set Commander V8.1 (Announce: October 1, GA: December 6)

- **IBM Data Set Commander** provides efficient tools and shortcuts to improve handling of PDS and PDSE.
- Fully automated facility to manage caching of PDS and PDSE members.
- Fully compatible replacement for IEBCOPY, enhancing capability to manage and manipulate PDS and PDSE.
- Manage PDSE member generations (versions)
- Integrated front end to ISPF. It enhances ISPF functions, including browse, edit, TSO shell, and DSLIST, UNDELETE, and provides many additional capabilities

What's new?

- Automated PDS/PDSE caching (LLA)
- Manage PDSE member generations (versions)

```
-DSC-                               LLA Monitored Libraries                               Row 1 to 14 of 59
Command ==>                               Scroll ==> CSR

Monitor State: ACTIVE
Authorization: FULL

Main commands: S Sort list  X Exit to main menu
Line commands: A Activate  D Deactivate  R Refresh  M Members  B Browse

-DSC-                               LLA Monitor Options Menu                               emNum
Command ==>                               10
Monitor State: ACTIVE  Timer: UNIT=1s DELAY=2s AUTO=10m POLL=5m PAUSE=0s  13
Authorization: FULL  21
  7
  5
3574
1208
  9
247
10

==> _ Enter selected option as follows:
  1 Display defined LLA library groups
  2 Display monitored LLA libraries
  3 Display monitored load modules
  4 Display SYSPLEX LLA Monitors
  5 LLA Monitor started task control
  X Exit LLA Monitor control application

Press ENTER key to select or point and shoot at option number
Press END key to exit

000006 //STEPLIB DD DSN=IPT.V7R1.SIQILOAD,DISP=SHR
000007 //SYSPRINT DD SYSOUT=*
000008 //MYLIB DD DISP=OLD,DSN=DNET187.JCL.DEMO
000009 //SYSIN DD *
000010 EMPTY O=MYLIB
***** Bottom of Data *****
```

Provides useful, cost-saving capability in daily handling of data sets.

PD Tools Multi-Platform Technical Preview

•**Disclaimer** : IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchase decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Why PD Tools for Multiplatforms?

- For clients using the z platform and beyond - AIX and Linux users
 - Provide a consistent user experience for customers running application on z, AIX and Linux
 - Clients using WebSphere MQ, Java/WAS/Liberty Profile, and TXSeries/WXTR
 - Above and beyond function and capability of any others in the market
-
- **Watch the PD Tools Website for more details on how to register and download:**
 - <http://www.ibm.com/software/awdtools/deployment/>

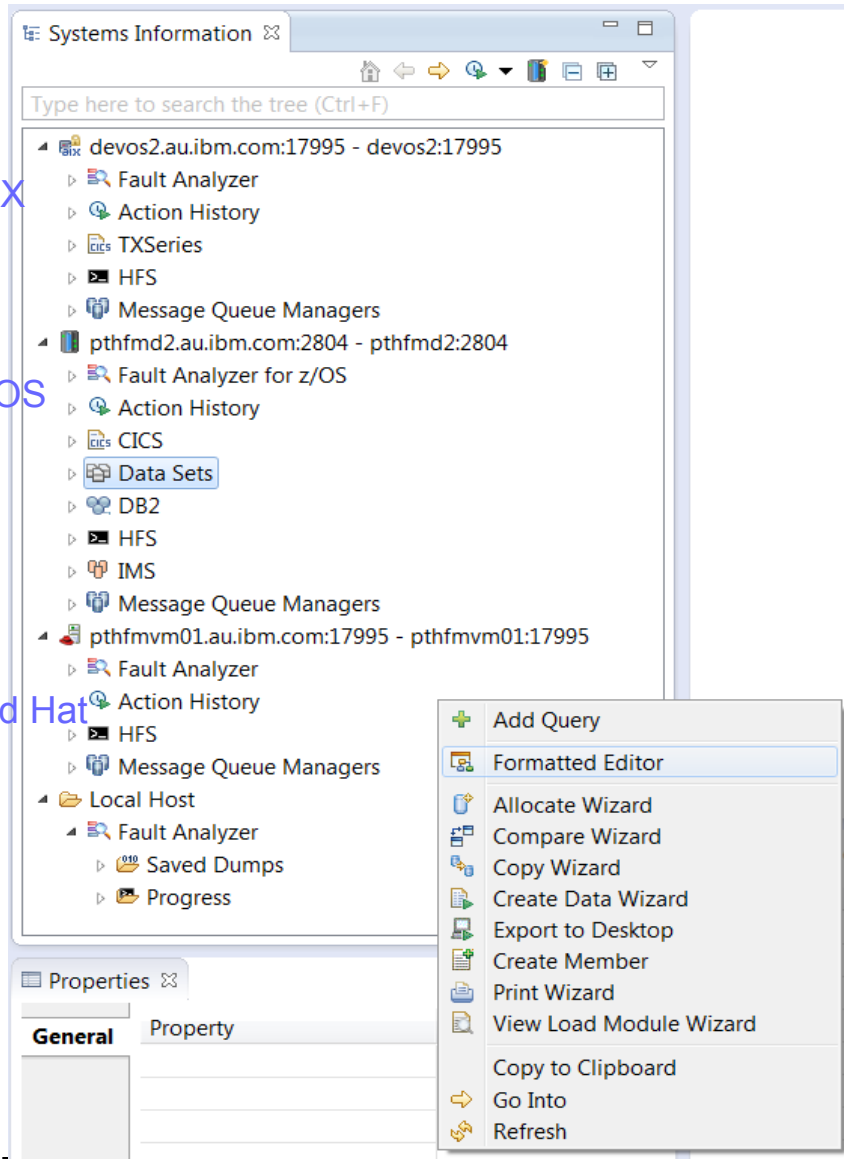
File Manager for Multiplatforms Features Technical Preview

File Manager for Multiplatforms Overview

AIX

z/OS

Red Hat



- Supports AIX and Red Hat operating systems on System p.
- Editing of hierarchical file system files, WebSphere MQ queues, and TXSeries resources (on AIX platform only).
- Formatted editing enabled using dynamic templates.
- Use the same navigation and look & feel of FM plug-in functions from z/OS platform.

Familiar FM functionality provided for distributed platforms

Multipatform Interoperability Across Platforms



File Manager - Eclipse SDK

File Edit Navigate Search Project File Manager Run Window Help

Quick Access z/OS File Manager Fault Analyzer Java Debug DTFJ

System...

Type here to search

- devos2.au.ibn
- Fault Analy
- Action His
- TXSeries
- HFS
- Message C
- pthfmd2.au.it
- Fault Analy
- Action His
- CICS
- Data Sets
- DB2
- HFS
- Browse
- IMS
- Browse
- IFA2: IFA
- Data
- D.
- D.
- D.
- D.

Prop...

Property

z/OS edit session

Navigation Cursor Current

	REC-TYPE	NAME	EMPLOYEE-NO	AGE	SALARY
1	01	Grant Smith	1111	35	75000
2	01	ANDREW APPLE	6645	53	78500
3	01	Graham Prestcott	5583	28	48000
4	01	Bill Somers	4418	33	68000
5	01	Ted Dexter	19275	1...	****
6	01	John Brown	19275	1...	****
7	01	cliff roberts	19417	1...	****
8	01	James Browne	19293	1...	****

Layout REC-TYPE01 Template NICH1.TEMPLATE(FMNMCTMPL)

FORMATTED

AIX edit session

Navigation Cursor Current

	Recno	Alphas
1	1	IJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
2	2	JKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
3	3	LMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
4	4	LMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
5	5	MNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
6	6	NOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
7	7	OPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
8	8	PQRSTUVWXYZ0123456789ABCDEFGHIJKLMN

Layout DYN01 Template /nichi/templates/template.xml

FORMATTED

Red Hat edit session

Navigation Cursor Current

	Recno	Alphas
1	1	IJKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
2	2	JKLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
3	3	KLMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
4	4	LMNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
5	5	MNOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
6	6	NOPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
7	7	OPQRSTUVWXYZ0123456789ABCDEFGHIJKLMN
8	8	PQRSTUVWXYZ0123456789ABCDEFGHIJKLMN

Layout DYN01 Template /demo/templates/template.xml

FORMATTED

IMS edit session

Navigation BOT Edit type FULL

Level	Segment	Concatenated key value		Addi
1	SHIRE			
1	SHIRE	BROOME		
2	SHIRENP	BROOME		
2	LINKSUB	BROOME		
2	LINKSUB	BROOME	BROOME	
2	LINKSUB	BROOME	EXMOUTH	
1	SHIRE	ESPERANCE		
2	SHIRENP	ESPERANCE		
2	LINKSUB	ESPERANCE	CASCADE	
?	LINKSUB	ESPERANCE	CASCADE	

Layout SHIRE Template/View FM Generated Template

KENICHI.FMDATA IMS:IFA2:DB:DJ1E Lookup Console Fault Entry list Host Connections

Insert Mode Insert

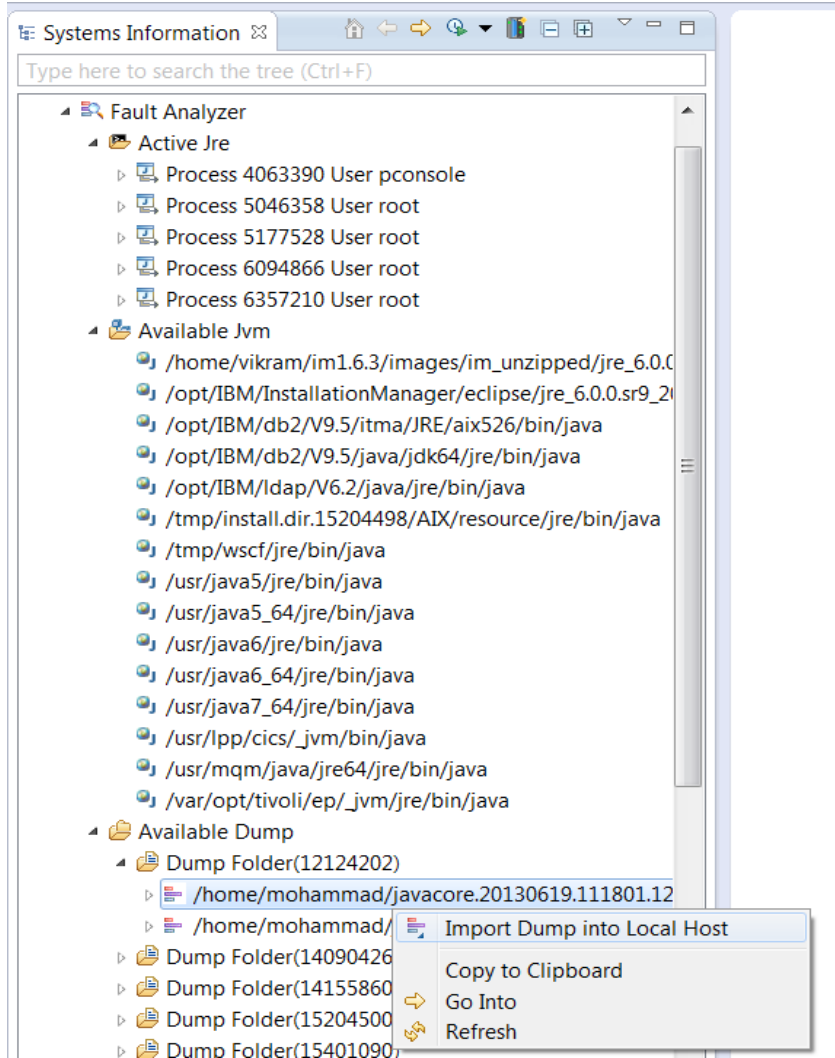
pthfmd2:2804

Fault Analyzer for Multiplatforms Features Technical Preview

Fault Analyzer for Multiplatforms Overview (Java Dump Analysis)

- Support AIX and Red Hat operating systems on System p.
- Analysis of Java dump files on a local file system.
- Supports analysis of Java dumps from IBM's Java virtual machines. While we only provide support for AIX and Red Hat, Java dumps from any supported platforms should work. Just import Java dumps to your local system.
- Some key features:
 - Importing Java dumps to your local workspace for analysis.
 - Display of Java threads in the dump and stack trace of executing program in each thread.
 - Display of general information about Java dumps (command to start the Java program, environmental values, and system information).
 - Source line display.
 - Discovery of Java run-time environments installed on your system.
 - Discovery of Java dumps on your system.
 - Discovery of Java processes running on your system and instructing to take a dump.

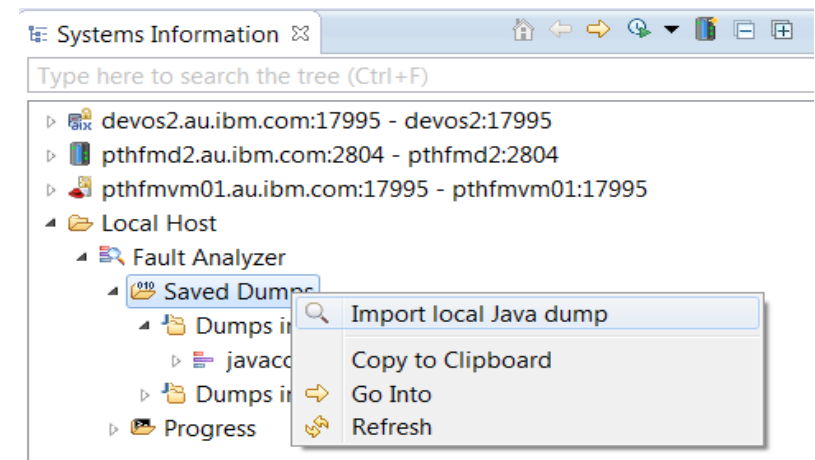
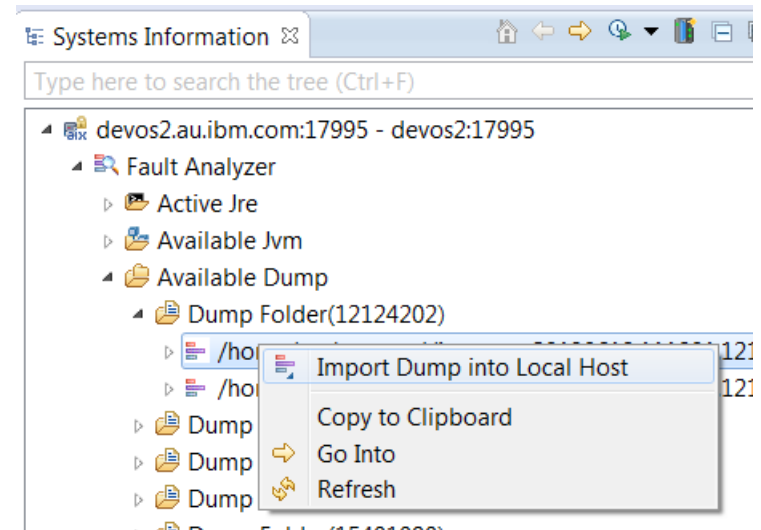
Fault Analyzer for Multiplatforms Overview



- Discovers running Java processes on your machine:
 - Instruct to take a dump.
 - Browse JAR files associated with the process and let you browse classes.
- Discover JVMs available on your system.
- Discover Java dumps on your machine.
 - Allows you to import Java dumps to your desktop for analysis.

Java Dump Analysis Overview

- Java projects in Eclipse knows everything about your Java applications:
 - Source files.
 - JAR files for dependent libraries.
 - Dependencies on other Java projects.
- We place Java dumps into your local Java project and utilize the information available during the analysis process (eg. Source display).
- The plug-in provides method for importing dumps from a remote system (AIX and Red Hat) to your Java project.
- The plug-in provides method for importing a local dump into your Java project.
- Once imported, you can kick off the analysis of Java dumps.



Summary

- z/OS Problem Determination and Deployment Tools that:
 - Exploits IBM's latest technology
 - Offer wide array of key features and functions
 - Provide opportunity for increased user productivity
 - Are affordably priced
 - Have flexible terms and conditions
 - Various training options (Class, Web/online - free, etc...)
- The PD Tools GUIs reduce the effort needed to learn and perform tasks
 - Interfaces for Fault Analyzer, File Manager, Debug Tool and Application Performance Analyzer and Workload Simulator
 - Add flexibility, while retaining the proven functionality of the PD Tools
 - Navigate quickly between multiple product's functionality
 - Perform complex tasks with the aid of menus and toolbars
 - Reduce the learning curve - gain maximum leverage of IT staff with minimal training expense
- PD Tools interfaces are available no additional charge once mainframe license obtained
- The traditional 3270 interfaces are also available to leverage traditional application development and maintenance skills
- Integrated Application Development, System/Sub System Environments






Questions





Thank You

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PD Tools V13 and Solution Pack Resources

- **Announcement letters**
 - PD Tools Solution Packs'
 - CICS Solution Packs

- **Redbooks/Redpapers**
 - [IBM Problem Determination Tools for z/OS \(November 2012\)](#)
 - Modernize Your Application Infrastructure with CICS Tools V5.1

- **Analyst reports**
 - [Whitepaper: PD Tools Competitive Analysis Executive Summary \(March 2011\)](#)
 - IBM CICS Tools: Discovery and Optimization for the Next Generation

- **Web Page**
 - IBM Problem Determination Tools - <http://www.ibm.com/software/awdtools/deployment/>

HSBC Bank Argentina S.A. - An International Bank in Argentina

Business Challenge

- Needed to reduce mainframe application development costs and quickly identify and fix root-cause issues impacting application performance and reliability

Solution

Using IBM Problem Determination Tools, the bank's development team modernized its processes for developing back-end IBM CICS applications with Rational Developer for z.

-IBM Debug Tool for z/OS

-IBM Fault Analyzer for z/OS

-IBM File Manager for z/OS

Benefits

- Increased programmer productivity by **10%**
- Significantly decreased abend-resolution time
- Decreased application development costs
- Improved application performance

Client Quote

“We’ve increased programmer productivity by 10 percent and cut development costs. Not only that, but we’ve experienced significant decreases in the number of transaction failures within our applications.”

CICS Interdependency Analyzer for z/OS V5.1



Application insight

What's new in CICS IA V5.1...

- Support for CICS Transaction Server V5.1, including enhanced business application analysis
- New threadsafe analysis plug-in view and report
- Improved installation and configuration
- DB2 data lifecycle management
- Native SQL language stored procedures
- Graphical visualization view of resources

CICS IA enables you to...

- Identify threadsafe / non-threadsafe programs
- Isolate and remove affinities
- Speed CICSplex® SM workload management
- Advanced CICS command flow analysis
- Highlight CICS web service and mobile targets

The screenshot displays the IBM CICS Explorer interface. The main window shows a table of resources for region ID0ZZ518. The table has columns for Program, LIB Dataset Name, APIS, Concurrency, and User. A context menu is open over the resource ID0ZZ518, listing options such as Show Resources, Show Maps, Show Files, Show Temporary Storage, Show Transient Data, Threadsafe Report, Show Affinity Type, Transactions Used, Programs Used, Web Services Used, Collector, and Open visualisation.

Program	LIB Dataset Name	APIS	Concurrency	Ext.	Storage Prot.
IVDZZ518 (CICS TS 5.5)					
TST4CVDA	CICSIAD.TEST.LOADLIB	CICSAP	QUASIRENT	USER	INACTIVE
TST4CVD1	CICSIAD.TEST.LOADLIB	CICSAP	QUASIRENT	USER	INACTIVE
TST4CVD2	CICSIAD.TEST.LOADLIB	CICSAP	QUASIRENT	USER	INACTIVE
TST4CVD3	CICSIAD.TEST.LOADLIB	CICSAP	QUASIRENT	USER	INACTIVE
TST4CVD4	CICSIAD.TEST.LOADLIB	CICSAP	QUASIRENT	USER	INACTIVE

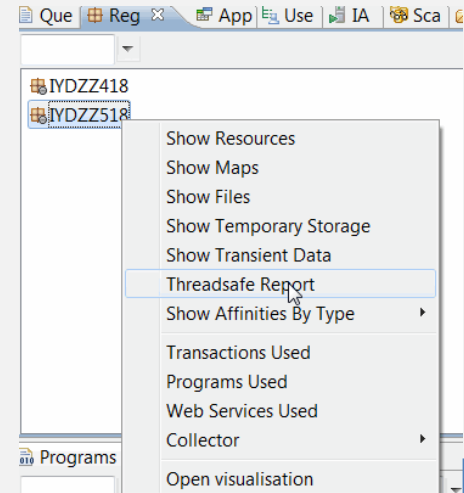
Comm.	Function	Type	Object	Object Len.	Offset	Progra...	Use cou...	Thre...
MQ	CLOSE	QUEUE	CSQ4SAMP.	8	000063...	000073...	2	Y
CICS	IGNORE	CONDITL		0	000049...	000073...	2	Y
MQ	INQUIRE	QUEUE	CSQ4SAMP.	8	000063...	000073...	8	Y
CICS	LINK	PROGRA.	TST4CVD2	8	00005A...	000073...	2	I
CICS	LINK	PROGRA.	TST4CVD4	8	00005B...	000073...	2	I
MQ	OPEN	QUEUE	CSQ4SAMP.	8	000062...	000073...	2	Y
CICS	RECEIVE	MAP	CSQ4VDM	7	00004E...	000073...	2	N
CICS	RECEIVE	MAP	CSQ4VDM	7	00005C...	000073...	6	N
CICS	RECEIVE	MAPSET	CSQ4VDM	7	00004E...	000073...	2	N
CICS	RECEIVE	MAPSET	CSQ4VDM	7	00005C...	000073...	6	N
CICS	SEND	MAP	CSQ4VDM	7	00004E...	000073...	2	N
CICS	SEND	MAP	CSQ4VDM	7	00005B...	000073...	6	N
CICS	SEND	MAPSET	CSQ4VDM	7	00004E...	000073...	2	N
CICS	SEND	MAPSET	CSQ4VDM	7	00005B...	000073...	6	N
CICS	SEND	TEXT	SEND TEXT	10	00004D...	000073...	2	N

Drive a threadsafe report from the CICS IA plug-in

Benefits

- Understand threadsafe issues by program
- Run the report against the latest level of CICS

Run threadsafe report by region



Save as HTML report

Comma...	Function	Type	Object	Offset	Use cou...	Threadsafe	Inhibitor
	MQ	CLOSE	QUEUE	CSQ4SAMP.MAILMGRJAM...	000063...	2	Y
	CICS	IGNORE	CONDITION		000049...	2	Y
	MQ	INQUIRE	QUEUE	CSQ4SAMP.MAILMGRJAM...	000065...	7	Y
	CICS	LINK	PROGRAM	TST4CVD2	00005A...	2	I
	CICS	LINK	PROGRAM	TST4CVD4	00005B...	1	I
	MQ	OPEN	QUEUE	CSQ4SAMP.MAILMGRJAM...	000062...	2	Y
	CICS	RECEIVE	MAP	CSQ4VD0	00004E...	2	N
	CICS	RECEIVE	MAP	CSQ4VD1	00005C...	5	N
	CICS	RECEIVE	MAPSET	CSQ4VDM	00004E...	2	N
	CICS	RECEIVE	MAPSET	CSQ4VDM	00005C...	5	N
	CICS	SEND	MAP	CSQ4VD0	00004E...	2	N
	CICS	SEND	MAP	CSQ4VD1	00005B...	5	N
	CICS	SEND	MAPSET	CSQ4VDM	00004E...	2	N
	CICS	SEND	MAPSET	CSQ4VDM	00005B...	5	N
	CICS	SEND	TEXT	SEND TEXT	00004D...	2	N

View Summary

The screenshot shows a summary report for region 'YDZZ518 (CICS TS 5.1)'. The report is organized by program (TST4CVD0, TST4CVD1, TST4CVD2, TST4CVD3, TST4CVD4). Each program entry shows metrics for Total CICS Calls, Indeterminate Threadsafes, Total IMS Calls, and Threadsafes. The 'TST4CVD1' program shows a high number of threadsafes (0680).

Program	CICSAD.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE	Threadsafes
TST4CVD0	CICSAD.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE	0680
TST4CVD1	CICSAD.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE	0680
TST4CVD2	CICSAD.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE	0680
TST4CVD3	CICSAD.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE	0680
TST4CVD4	CICSAD.TEST.LOADLIB	CICSAPI	QUASIRENT	USER	INACTIVE	0680

View detail by program