

LANDP® Family



Problem Determination

Version 5.0

LANDP® Family



Problem Determination

Version 5.0

Note

Before using this information and the product it supports, be sure to read the general information under Appendix A, "Notices" on page 395.

First Edition (April 2000)

This book is based on the previous edition, *LANDP Family Problem Determination Version 4.0*, GC33-1964-00, which remains applicable and current for users of LANDP® Version 4.0.

This edition applies to LANDP Family Version 5 (part number 0781197 in the United States of America, program number 5639-190 in Europe, the Middle East, and Africa) and to all subsequent releases and modifications, until otherwise indicated in new editions. Make sure you are using the correct edition for the level of product.

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About this book

This book provides information about the following IBM® LAN Distributed Platform (LANDP®) Family products:

- LANDP Family Version 5.0
with its components:
 - LANDP for DOS
 - LANDP for OS/2®
 - LANDP for Windows NT
- IBM LANDP for AIX®, Version 2 Release 1.0 (LANDP for AIX)

This book describes how to use trace tools, diagnostic programs, alerts, and return code information and messages to:

- Debug code while developing LANDP application programs and user servers
- Resolve problems that occur while using LANDP family components
- Record, display, and interpret trace information
- Look up and interpret LANDP return codes and alerts
- Work with IBM support representatives
- Maintain program versions and fix levels
- Install LANDP program fixes

Who should read this book

This book is for application programmers, system programmers, and system administrators who do the following:

Application programmers

Design, develop, test, and debug application programs

System programmers

Adapt host applications and communication software

System administrators

Manage and monitor database systems, host systems, branch networks, and LANDP workgroups

What you need to know

Before you use this book, you should be familiar with:

- The operating system environments in which you use LANDP
- The programming languages used with LANDP
- The concepts and operation of the communications, databases, system management, and I/O devices you use

About this book

If you work with wide-area communication servers, then you should be familiar with System Network Architecture (SNA) protocols, and with Synchronous Data Link Control (SDLC), Token-Ring Data Link Control, or X.25 Data Link Control.

If you work with LANDP internal communication servers, then you should be familiar with either Network Basic Input/Output System (NetBIOS), or with Transmission Control Protocol/Internet Protocol (TCP/IP).

If you work with alert notifications, then you should be familiar with the NetView® program and SNA networks.

How this book is organized

This book has two parts:

Part 1, Problem Determination Information describes how to use LANDP diagnostic tools, programs, and information.

Part 2, Return Codes, Messages, and Alerts contains lists of return codes, messages, and alerts, grouped by platform, program, and server.

Conventions used in this book

The following conventions are used in this book.

A term that is used for the first time, or whose meaning is important for you to understand, is shown like this: *term*. A definition of the term usually follows. It might also appear in “Glossary” on page 401.

An online element, such as a check box, field name, menu choice, or push button, is shown like this: **Return code**.

A value that either you or the system must supply is shown like this:

Open the file EHCTRCxx.DAT, where xx is the value of the workstation identifier.

A hexadecimal value is shown like this: X'00000421'.

DB2 Universal Database®

In this book, all references to DB2® or DB2/2 apply to IBM DB2 for OS/2 and to IBM DB2 Universal Database®.

Windows 2000

In this book, all references to Windows NT apply to Microsoft Windows NT and to Microsoft Windows 2000.

Related information

The LANDP family is supported by the following books. In this book, references to other LANDP books use the shortened title shown here. For the full title, order number of these publications, and a comprehensive list of LANDP-related literature, refer to “Bibliography” on page 423.

LANDP Introduction and Planning

This book provides a brief description of the components and features of the LANDP family, and gives information about planning a LANDP system.

LANDP Installation and Customization

This book provides information about installing, customizing, and distributing the LANDP family.

LANDP Programming Reference

This book describes the application programming interfaces that are used to develop user servers and client applications.

LANDP Programming Guide

This book gives guidance on writing application programs to use the interfaces described in the *LANDP Programming Reference*.

LANDP Problem Determination

This book describes how to use trace tools, diagnostic programs, alerts, and return codes to debug code while developing LANDP applications and user servers, or resolve problems while using LANDP family components.

LANDP Servers and System Management

This book provides detailed information on the LANDP servers, and describes how to manage and administer a LANDP system.

Web site

For more information about LANDP please visit our web site at:
<http://www.ibm.com/software/ts/landp/>

About this book

Summary of Changes

This manual has been updated to reflect enhancements made to LANDP in Version 5. The major changes in this version are:

- The LANDP MQSeries Link server enables LANDP applications to access the Message Queueing Interface of MQSeries®
- The LANDP TCP/IP wide area communications server enables existing SNA wide area communication networks to be replaced with TCP/IP networks without impact to LANDP applications interfacing to the LANDP SNA or PPC servers. The TCP/IP wide area communications server also supports LANDP's 3270 emulator over the TELNET protocol.
- The LANDP ODBC query server on Windows NT supports access to various relational databases through the LANDP API using industry standard ODBC drivers.
- The External Logging Replication (XLR) feature of the Shared File server, when used with the Service Availability Manager, provides improved performance and availability of replicated Shared File databases.
- The enhanced Java support enables access to LANDP services from devices not running LANDP code, for example, browser-based applications.
- Support for the IBM 9069 transaction printer has been added.
- The range of servers supported by LANDP on the Windows NT platform has been extended to be more comparable to the function available on OS/2. The additional servers available on Windows NT include Electronic Journal, Store for Forwarding/forwarding, System Manager, PPC and the 4748 DBCS printer servers.
- In addition to the new function which LANDP V5 delivers, the levels of operating systems and other system software with which LANDP operates have been updated.

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Chapter 1. Introduction

This chapter introduces the tools, programs, and information that are used to diagnose LANDP problems.

The LANDP family includes the following diagnostic aids:

- Tools for error logging and event tracing
- Utility programs for checking the version and program fix levels of LANDP programs and components
- Utility programs for installing program fixes
- Codes for loading errors, initialization errors, and run-time errors returned by LANDP programs and servers
- System services for alert notification, resolution notification, and messages

These tools, programs, and information are designed to support non-defect problem determination. If you cannot determine the cause of a problem, or you believe the problem is caused by a LANDP program defect, then contact an IBM® support representative. For guidelines about working with support representatives and information required to diagnose problems, see Chapter 6, “Support” on page 61.

Trace tools

LANDP trace tools provide services for:

- Testing and debugging LANDP application programs
- Diagnosing problems occurring at the production site
- Obtaining information about resource usage

You do not use trace tools in daily operations, but they are essential if a problem occurs—you or an IBM support representative can use information from trace tools to determine the problem's cause.

Trace tool functions are generally provided by a trace server and a display trace program.

- The trace server records events that occur while LANDP programs are running.
- The display trace program provides a way to display and work with trace conditions, status settings, and other data.

The trace server and display program work together to detect errors or abnormal situations, and to provide information about LANDP program operations.

Trace tools operate in each LANDP environment.

introduction

The trace server

The trace server is notified about events through special calls from other servers and application programs. Each call provides the address of the *trace control block* that contains the trace or log information. The trace control block is a data block. If it is valid, then the trace server writes a new trace or log record.

The display trace program

The display trace program has a menu interface that you can use to see trace and log data from various sources. Depending on the LANDP environment, the program might display:

- Trace data from the trace server memory buffer
- Data from other trace areas, such as data link control (DLC)
- Screens saved in separate files
- Trace and log files
- Current conditions and status settings

Trace data is displayed in the order it was stored. You can use the display trace program to change the conditions and status settings.

Loading trace tools

Load the trace tools into memory using the LOADER program or the LOADERE program. For information about the loading programs and loading statements, see the *LANDP Installation and Customization* book. This book also provides you with information about loading parameters, specifying values, and using trace tools, in the following chapters:

- Chapter 2, “LANDP for DOS trace tools” on page 9
- Chapter 3, “LANDP for OS/2 trace tools” on page 37
- Chapter 4, “LANDP for Windows NT trace tools” on page 47
- Chapter 5, “LANDP for AIX trace tools” on page 55

Utility programs

LANDP includes the utility programs VERSION and APPLYFIX to help with maintenance.

VERSION

The VERSION utility program checks the version and last-installed Authorized Program Analysis Report (APAR) or Program Temporary Fix (PTF) of LANDP program components. Information about a component and its version and APAR or PTF level can be displayed, or written to a file. This information is useful when diagnosing problems or working with IBM support representatives.

VERSION runs on LANDP for DOS, OS/2, and Windows NT and LANDP for AIX® workstations. For information about using it, see “VERSION utility” on page 65.

APPLYFIX

The APPLYFIX utility program installs program fixes on LANDP program components, and keeps a record of the installed changes. It runs on your LANDP customization workstation. For information about using it, see the *LANDP Installation and Customization* book.

Return codes

A *return code* is a value returned to a program to indicate the result of an operation. A LANDP return code is a value returned by a server to indicate the result of a function or service request made by an application program.

There are two types of LANDP return code: *router* and *server*. Router and server return codes are stored at different offsets in the Connectivity Programming Request Block (CPRB).

An operation is successful only if the router and server return codes are both zero.

If a return code is nonzero, then it is in the form: X'0100nnnn', where *nnnn* may represent two ASCII characters.

This book contains return code listings grouped by environment, for example DOS or OS/2. The listings include the hexadecimal return code and, if appropriate, the corresponding ASCII character.

Router return codes

A router return code is stored at offset 4 in the CPRB:

- Zero** The request reached the server.
Nonzero The request did not reach the server.

Server return codes

A server return code is stored at offset 40 in the CPRB:

- Zero** The server processing is error-free.
Nonzero Server processing error.

Return code classes

The first character in the ASCII return code denotes the class of the return code:

I *Intervention required.*

These return codes are returned when the error (or fault) is of a type that can be corrected by workstation operators or technical service personnel.

L *LAN services error.*

These return codes can occur as a result of any function request to any server.

introduction

P *Programming error.*

These return codes can occur while developing or debugging application programs. They should not occur in daily operation with error-free programs.

U *Device error (Unable to access equipment).*

These return codes occur when LANDP software cannot carry out a request. The most likely cause is a hardware error (or fault).

Examples of return code listings

This is a typical listing resulting from a programming error:

X'01005032' (P2)

Causing functions: CL, OP

Explanation: Length error. The request DATA length specified does not correspond to that specified in the OP or CL command.

Action: Check the program.

This is a typical listing resulting from an intervention-required error:

X'01004932' (I2)

Causing functions: CL, CN, OP, RH, SH

Explanation: The communication adapter or cabling are malfunctioning.

Action: Restart the Communications Server or check the equipment.

For a complete list of return code listings, see:

- Chapter 7, "Loading return codes" on page 87
- Chapter 8, "LANDP for DOS return codes" on page 115
- Chapter 9, "LANDP for OS/2 return codes" on page 171
- Chapter 10, "LANDP for Windows NT return codes" on page 239
- Chapter 11, "LANDP for AIX return codes" on page 289

Messages

On some platforms, LANDP displays messages in addition to, or instead of, generating return codes—for example:

- In response to an unexpected event
- When something undesirable could occur
- To convey information about an operation

For a list of LANDP messages, see Chapter 12, "LANDP family messages" on page 329.

Alerts

An *alert* is generally a message sent to a management services focal point or to a network operator, to identify a problem or an impending problem.

In the NetView environment, an alert is a high-priority event that warrants immediate attention.

In the LANDP environment, an alert is an unsolicited record sent to the network operator by a network component that has detected a problem. An alert provides:

- 32-bit alert ID number
- Problem severity indicator and problem description
- List of probable causes, (including user, install, or failure)
- List of recommended actions for the operator
- Additional subvectors (SVs) with subfields (SFs)

It also provides further subvectors.

The LANDP system manager server provides alert notification, resolution notification, and messages to the NetView operator based on the *generic alert architecture*.

LANDP program components and applications in the LANDP workgroup send alert information to the network operator, in the same way as SNA nodes do. The NetView program on the host acts as the alert receiver. The LANDP system manager server does not check alert codes—they are understood only by the NetView program.

References to further information on alerts

For information about managing alerts and using the alert functions, see the *LANDP Servers and System Management* book.

For information about programming and the alert functions, see the *LANDP Programming Reference* book.

For information about subvectors and alert codes, see the *SNA Formats* book.

For lists of alerts, see:

- Chapter 13, “LANDP for DOS alerts” on page 339
- Chapter 14, “LANDP for OS/2 alerts” on page 365
- Chapter 15, “LANDP for Windows NT alerts” on page 377

The information in alert listings is for users who are familiar with NetView programs and SNA networks. For information on these, see the *SNA Formats* book.

For the full titles and order numbers of these books, see “Bibliography” on page 423.

Chapter 2. LANDP for DOS trace tools

This chapter describes how to use the LANDP for DOS trace tools. Use these tools to debug LANDP application programs and diagnose problems on LANDP for DOS workstations at the production site.

LANDP for DOS trace functions are provided by the diagnostic and debugging tool (DDT) server. Although the DDT server does not accept double-byte character set (DBCS) data as input, it can display DBCS data entered through the parameter area. The last character can get lost so you should check the data in hexadecimal format.

Functions for displaying trace screens or information in the trace buffer are provided by the LANDP for DOS trace display programs.

For extra information and worked examples on the traces that LANDP produces, take a look at the file called GG243842.BOO that is shipped with LANDP Version 5. Use one of the IBM BookManager® READ products to view this file.

This file contains information from the *FBSS Problem Determination Guidelines* “Red Book”, GG24-3842, that was produced by the IBM International Technical Support Center (ITSC). The information describes FBSS traces but is equally relevant to traces for LANDP for DOS and OS/2.

Note: Part 2 of *LANDP Problem Determination* (this manual) contains up-to-date information on return codes—so do *not* use the information in the appendixes of the *FBSS Problem Determination Guidelines* “Red Book”.

Starting the trace tool server

Start the DDT server by pressing a hot-key combination. The hot-key is defined at customization time. The default hot-key is Alt+NumLock.

When the server starts, you see either the:

- LANDP for DOS Debugging Tools screen if access to the trace tools through the system manager server was not selected
- A screen requesting user identification and a password by the DTP server

The authorization level required to work with trace tools is security level S. The authorization level is verified in one of the two following ways:

- When no user is signed on, you see a screen requesting user identification:

trace tool screens, DOS

```
LAN DISTRIBUTED PLATFORM/DOS
Trace Tools User Identification
-----

User identification.....:

Password.....:

-----
Enter=Process                               Esc/F3=Exit
```

The data you enter is sent to the system manager server for verification. After it is verified, you see the LANDP for DOS Debugging Tools screen.

Note: If you attempt to start the trace tools without proper authorization, or if you enter more than three incorrect passwords, the system revokes access.

- If a user is already signed on, the server verifies that this user has authorization level S.

Using the trace tool screens

The LANDP for DOS trace tool screens are as follows:

```
L A N D P / D O S   D e b u g g i n g   T o o l s

  1. - Communications

      2. - Supervisor

Enter option:

Esc/F3=Return
```

```

Supervisor Debugging Tools

1. - Functions trace
2. - Routines trace
3. - EHCLIP trace
4. - Display routines trace active/inactive
5. - Remote requests included/Excluded
6. - Stop/start tracing

Enter option:

Esc/F3=Return
    
```

```

Communications

1. - SDLC Trace                6. - DCA DLC Trace
2. - X.25 Network Errors      7. - DCA DLC Information
3. - X.25 Adapter Trace       8. - Token Ring DLC Trace
4. - SNA Trace                A. - Start X.25 Adapter Trace
5. - Native X.25 Trace        B. - Stop X.25 Adapter Trace

Enter option:

Esc/F3=Return
    
```

1. After the LANDP for DOS Debugging Tools screen, go to the next level in the hierarchy by typing the number or letter of a menu choice.
2. Return to the previous level in the hierarchy by pressing the Esc or F3 key.
3. Exit the trace tools by pressing the Esc or F3 key from the LANDP for DOS Debugging Tools screen.
4. Communication screens are not displayed on non-gateway workstations.
5. The DCA DLC Information choice is available only when the IBM Financial Branch System Integrator (PC/Integrator) is installed. See the *IBM Financial Branch System Integrator, Version 1.0: Programmer's Reference Manual* for more information.

trace tool screens, DOS

6. The Start X.25 Adapter Trace and Stop X.25 Adapter Trace choices are used only when working with the IBM X.25 Interface Coprocessor/2 adapter.

Saving screen contents

When the contents of a screen can be saved,

F2 = Save

is displayed in the lower left corner of the screen. Pressing the F2 key instructs the program to save the current screen in a file named TR\$xxxxn.DAT.

This file is used by IBM support representatives when diagnosing problems. "GETTRACE program" on page 13 describes how to see the contents of the TR\$xxxxn.DAT file.

The value of xxxx depends on the choice selected on the LANDP for DOS Debugging Tools screen:

Value	Selected Choice
LIPT	EHCLIP Trace
FUNC	Functions Trace
ROUT	Routines Trace
SDLC	SDLC Trace
X25E	X.25 Network Errors
X25T	X.25 Adapter Trace
SNAT	SNA Trace
NATT	Native X.25 Trace
DCAT	DCA DLC Trace
DCAI	DCA DLC Information
TRDL	Token-Ring DLC Trace

The value of n is a letter from A to Z that is assigned dynamically by the trace tool, and wraps around from Z back to A.

Saving trace buffer contents

When the contents of the trace buffer can be saved, F5 = SaveAll is displayed in the lower part of the screen. Pressing the F5 key saves the entire DDT buffer in a file named TR\$xxxAn.DAT.

The number of trace pages available is set by the \P:n PCn parameter on the DDT.EXE loading statement.

This file is used by IBM support representatives when diagnosing problems. "EHCTRALL program" on page 13 describes how to see the contents of the TR\$xxxAn.DAT. file.

The value of xxxA depends on the choice selected on the LANDP for DOS Debugging Tools screen:

Value	Selected choice
SNAA	SNA Trace

FUNA Functions Trace
LIPA EHCLIP Trace

The value of *n* is a letter from A to Z that is assigned dynamically by the trace tool, and wraps around from Z back to A.

Displaying trace files

To view trace files that contain saved screen data or a trace tool buffer, use the trace tool programs GETTRACE and EHCTRALL.

These programs do not accept DBCS data as input. If you loaded LANDP for DOS in SBCS mode, then you must display the trace files in SBCS mode. If you loaded LANDP for DOS in DBCS mode, then you must display the trace files in DBCS mode.

GETTRACE program

The GETTRACE program displays the contents of a TR\$xxxxn.DAT file created by saving a screen with the F2 key. Use GETTRACE to:

- Display a file
- Change a file format to standard DOS ASCII

The GETTRACE program resides in the LANDP customization directory. You can run the program without loading LANDP for DOS.

EHCTRALL program

The EHCTRALL program displays the contents of the trace buffer saved as TR\$xxxAn.DAT files created by saving the trace buffer with the F5 key. Use EHCTRALL to:

- Display a file
- Change the display format from standard DOS ASCII or hexadecimal

The EHCTRALL program resides in the LANDP subdirectory under the customization directory. You can run the program without loading LANDP for DOS.

Trace choices

The following topics describe the trace tool menu choices: **Communication Traces** and **Supervisor Traces**.

Communication traces

LANDP for DOS trace tools support the following communication traces:

- Synchronous data link control (SDLC) trace
- X.25 network errors
- X.25 adapter trace
- Systems network architecture (SNA) trace
- Native X.25 trace
- Direct communication adapter (DCA) data link control (DLC) trace
- DCA DLC information
- Token-ring DLC trace
- Start X.25 adapter trace
- Stop X.25 adapter trace

SDLC trace

```
SDLC Trace

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

vvvvv uuuuu yyyyy zzzzz wwwww

F2 = Save  Esc/F3 = Return
```

The displayed values are as follows:

xx... A message up to 240 bytes long. This is useful for support representatives when diagnosing SDLC problems.

The xx... message entries have the following meanings:

Entry	Meaning
o	Open received from SNA.

0	Information frame received (code passed to SNA).
2	Second SNRM received from primary (disconnection).
6	Inactivity code passed to SNA.
A	Modem active.
C	Reset and restart SDLC and SNA.
E	Information frame sent to primary.
F	Modem transition to off.
G	Modem transition to on.
I	Interrupt from adapter.
M	Interrupt from modem.
0	CTS error.
P	Transmit error.
T	Timer interrupt.
Z	Adapter missing.
n1	SDLC adapter error.
n2	SDLC adapter error.
n3	SDLC adapter error.
n4	SDLC adapter error.
n5	SDLC adapter error.
n6	SDLC adapter error.
p	Invalid supervisory frame received.
q	Invalid information frame received.
r	Frame received is too long.
s	Invalid NR count received.
t	CD error.
u	DSR error.
v	CTS error.
w	Transmit timer error.
x	DSR fails to drop.
z	DMA error.
ITx	Timer elapsed:
ITa	Inactive timer ending.
ITb	Inactive timer receiving.
ITc	DSR drop error timer.
ITd	CTS drop error timer.
ITe	DCE disconnect error timer.
ITf	Wait transmit timer.
ITg	DSR drop timer (switched).
ITh	DCE disconnect timer.
ITi	Interrupt not defined.
ITj	SNRM send timer.
ITk	Line inactivity timer (10 to 65 seconds).
ITl	Transmit error timer.
IMx	Modem malfunction.

trace choices, DOS

Notes:

1. ITx (x = timer interrupt) should appear when the timer expires.
 2. IMx (x = line changed) should appear when the SDLC adapter detects a modem malfunction.
 3. The characters following ITx and IMx depend on the SDLC program function.
 4. Normal line activity will appear as 000EE0E0EEEE0000000.
 5. Interrupt messages show line trouble. Two examples follow:

...00EE00ITk	shows	interrupt timer inactivity
...00EE00IMTF	shows	interrupt modem transition off
 6. The sequence of characters matches SDLC adapter status and lines.
- vv... The number of SDLC buffers. This includes the buffers defined by the user, plus two buffers reserved by the SNA server.
- uu... The number of buffers that are used.
- yy... The maximum number of buffers used in the session.
- zz... The number of *no more buffers* conditions detected by the SNA server. This is reset when a buffer becomes available.
- ww... The total number of *no more buffers* conditions detected by the SNA server. These conditions can cause host computer message retries, low performance, and disconnections. The effects depend on the line definition.
- Note:** If the values for zz and ww are often greater than zero, specify more buffers and customize the SNA server again.

X.25 network errors

```

X.2 5   N e t w o r k   E r r o r s
      x x x x x       y y y y y       z z z z z       v v v v v       w w w w w

a a   b b b b   c c c c c c c c c c   d d d d d
a a   b b b b   c c c c c c c c c c   d d d d d
a a   b b b b   c c c c c c c c c c   d d d d d
a a   b b b b   c c c c c c c c c c c c   e e e e
a a   b b b b   c c c c   e e e e   c c c c c c c c c c c c

a a   b b b b   c c c c c c c c c c   d d d d d
a a   b b b b   c c c c c c c c c c   d d d d d
F2 = Save   Esc/F3 = Return

```

The displayed values are as follows:

- xx... The number of X.25 buffers.
- yy... The memory pool size. This is only significant when working with the X.25 coprocessor.
- zz... The maximum number of buffers that can be used in the session.
- vv... The number of buffers that are used.
- ww... The number of *no more buffers* conditions detected by the communication server.
- aa One of the following values:
 - 01 Request control block with nonzero return code.
 - 02 Adapter reply with nonzero return code.
 - 03 Incoming packet (clear).
 - 04 Incoming packet (reset).
- bb... Length.
- cc... Header for the adapter. This is internal information, and does not appear for the X.25 coprocessor.
- dd... X.25 packet.
- ee... Reply different from zero.

The X.25 Network Error Trace menu displays only exception condition information traces. See the "Bibliography" on page 423 for a list of books about X.25 and wide area communication.

X.25 adapter trace

```

X.2 5  A d a p t e r  T r a c e                               p

aa bbbb cccccccccccccccccccc dddddd ddddddddddddd ddddddddddddd
aa bbbb dddddddddddddddddddddd
aa bbbb cccccccccccccccccccc dddddd ddddddddddddd ddddddddddddd
aa bbbb dddddddddddddddddddddd
aa bbbb cccccccccccccccccccc dddddd ddddddddddddd ddddddddddddd
aa bbbb dddddddddddddddddddddd

aa bbbb cccccccccccccccccccc dddddd ddddddddddddd ddddddddddddd
aa bbbb dddddddddddddddddddddd
F2 = Save   Esc/F3 = Return   PgUp/PgDn = Page

```

The displayed values are as follows:

- p The number of this screen or page.
- aa One of the following values:
 - 01 Outgoing packet.
 - 02 Reply.
 - 03 Incoming packet.
 - 04 Incoming packet but truncated.
 - 05 Unspecified.
- bb... Length.
- cc... The header for the adapter. This is internal information.
- dd... X.25 packet.

The X.25 Adapter Trace menu displays a trace of the X.25 messages most recently sent or received while working with the X.25 adapter. The displayed information shows frames and packets that have been sent to or received from the network.

There are three pages of information. Up to 20 messages can be displayed on a page. Use the PgUp and PgDn keys to scroll from one page to another.

If working with the X.25 coprocessor, see "X.25 adapter trace (coprocessor)" on page 18. For books on X.25 and wide area communication topics, see "Bibliography" on page 423. For detailed information on X.25 packets, refer to the PTT specifications for your country.

SNA trace, DOS

Start X.25 adapter trace

This choice activates the X.25 adapter trace. Select this choice only when working with the IBM X.25 Interface Coprocessor/2 adapter.

The Start X.25 Adapter Trace choice only *activates* the collection of X.25 communication data. To *display* collected data, select the X.25 Adapter Trace choice. See "X.25 adapter trace" on page 19 for more information.

Stop X.25 adapter trace

The Stop X.25 Adapter Trace choice deactivates the collection of X.25 communication data.

SNA trace

```
S N A   T r a c e
00:00:00          aaaa bbbb p
xxxxy zzzzzz tttttttttt rrrrrr iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii
xxxxy zzzzzz tttttttttt rrrrrr iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii
xxxxy zzzzzz tttttttttt rrrrrr iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii

xxxxy zzzzzz tttttttttt rrrrrr iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii
xxxxy zzzzzz tttttttttt rrrrrr iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii
F2 = Save   Esc/F3 = Return   F5 = SaveAll   PgUp/PgDn = Page
```

The displayed values are as follows:

- 00:00:00 The time stamp of the latest SNA data trace.
- aa... The number of records sent, in hexadecimal.
- bb... The number of records received, in hexadecimal.
- p The number of this screen or page.
- xx... The entry sequence number, in hexadecimal.
- y The direction of the message: S denotes sent, and R denotes received.
- zz... The protocol status. This is internal information.
- tt... The transmission header (TH), in hexadecimal.

- rr... The request/response header (RH), in hexadecimal. If RH is not used, this field contains the information bytes.
- ii... Information bytes (RU), in hexadecimal. The maximum number of bytes that fit on a line is displayed.

The SNA Trace choice displays a trace of the SNA messages most recently sent and received. The received messages are highlighted.

You can select the number (3 through 70) of SNA trace pages with the `LOADER SNA## \P:nn` statement (where *nn* is the number of pages). Up to 22 messages can be displayed on a page. Use the PgUp and PgDn keys to scroll from one page to another.

Native X.25 trace

```

N A T I V E   X . 2 5   T r a c e                               p

a bb cc ddddddddddddddddddddddddddddddddddddddddddddddddddd
a bb cc ddddddddddddddddddddddddddddddddddddddddddddddddddd
a bb cc ddddddddddddddddddddddddddddddddddddddddddddddddddd

a bb cc ddddddddddddddddddddddddddddddddddddddddddddddddddd
a bb cc ddddddddddddddddddddddddddddddddddddddddddddddddddd
F2 = Save   Esc/F3 = Return   PgUp/PgDn = Page
    
```

The displayed values are as follows:

- a One of the following values:
 - I** Input message.
 - O** Output message.
- bb The workstation identifier.
- cc The session identifier.
- dd... Message.

The Native X.25 Trace choice displays a trace of the native X.25 messages most recently sent and received.

DCA DLC trace, DOS

There are three pages of information. Up to 22 messages can be displayed on a page. Use the PgUp and PgDn keys to scroll from one page to another.

DCA DLC trace

The screen displayed by the direct communication adapter (DCA) data link control (DLC) trace looks like this:

```
D C A   D L C   T r a c e

xxx xxx
xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx
xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx
xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx
xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx

F2 = Save   Esc/F3 = Return
```

Figure 1. LANDP for DOS Trace Tools: DCA DLC trace screen

The displayed 3-character *xxx* strings are all the functions performed. The functions are grouped as follows:

- Input through the device cluster adapter
- Output through the device cluster adapter
- Input to the SNA server or the INT X'6B' handler
- Output to the SNA server or the INT X'6B' handler

The values are as follows:

Input through the device cluster adapter:

- Dnn* A data frame has been received. *nn* is the session identifier, with the following possible values:
- 80** DCA virtual session.
This session is used to send and receive virtual volume data for a personal computer system DCA-attached to a 4700 processor.

82 DCA virtual session.

This session is used for all the SNA traffic, including virtual volume data for a personal computer system attached to a gateway.

UFF A null frame has been received.

Output through the device cluster adapter:

omm An **80**-scan code has been sent, meaning DCA initialized notification. *mm* is the status value.

smm An **81**-scan code has been sent, meaning attention. *mm* is the status value.

amm A **98**-scan code has been sent, meaning positive acknowledgment. *mm* is the status value.

nmm An **A3**-scan code has been sent, meaning negative acknowledgment. *mm* is the status value.

wmm A **98**-scan code has been sent, meaning stop sending. *mm* is the status value.

tmm An **A3**-scan code has been sent, meaning restart sending. *mm* is the status value.

The following are possible values for the status value:

00 Scan code successfully sent.

01 Scan code not sent. Scan code queue full.

Input to the SNA server or to the INT X'6B' handler:

S00 Initialization call received from the supervisor.

E00 Disconnection call received from the supervisor.

0nn Output a buffer to the line call received from the SNA server or from the INT X'6B' handler. *nn* is the session identifier.

Inn Input a buffer to the line call received from the SNA server or from the INT X'6B' handler. *nn* is the session identifier.

Gnn Get a free buffer to the buffer pool call received from the SNA server or from the INT X'6B' handler. *nn* is the session identifier.

Fnn Release a buffer to the buffer pool call received from the SNA server or from the INT X'6B' handler. *nn* is the session identifier.

The following are possible values for the session identifier:

80 DCA virtual session. This session is used to send and receive virtual volume data for a personal computer system DCA-attached to a 4700 processor.

82 DCA virtual session. This session is used for all the SNA traffic, including virtual volume data for a personal computer system attached to a gateway or to a token-ring network.

DCA DLC trace, DOS

Output to the SNA server or to the INT X'6b' handler:

- Rnn A message has been received. *nn* is the session identifier, with the same possible values as for input to the SNA server or to the INT X'6B' handler.
- A06 DCA reset in process. No link established.
- A07 DCA reset successfully ended. Link established.

DCA DLC information

D C A D L C I n f o r m a t i o n

```
# buffers in buffer pool ..... nnnnn
# buffers in use..... nnnnn
Min. free buffers..... nnnnn
Total times buffer pool was empty..... nnnnn
4700 Indicator (online = 1)..... 0000n
# consecutive NACK's ..... nnnnn
Total # max . NACK's ..... nnnnn
# of resets..... nnnnn
# of time-outs..... nnnnn
# times 4700 has no buffers..... nnnnn
# elements in queue to be sent..... nnnnn
# elements in queue receive..... nnnnn
```

F2 = Save Esc/F3 = Return

token ring DLC trace, DOS

ww... The total number of *no more buffers* conditions detected by the SNA server. These conditions can cause host computer message retries, low performance, and disconnections.

COMD The IEEE 802.2 token-ring command or asynchronous entry point.

ST The status.

Note: If the values for zz and ww are often greater than zero, then specify more buffers and customize the SNA server again.

The Token-Ring DLC Trace menu displays a trace of the token-ring data link control flow. The trace description is as follows:

```
INTR ST ES:BX  aaaa bbbb cccc dddd
  Dir.Interrupt
    ST      Return code
    ES:BX   CCB address
```

```
INIT ST ES:BX  aaaa bbbb cccc dddd
  Dir.Initialize
    ST      Return code
    ES:BX   CCB address
    dddd    Bring-up return code
```

```
OADP ST ES:BX  aaaa bbbb cccc dddd
  Dir.Open.Adapter
    ST      Return code
    ES:BX   CCB address
    dddd    Open return code
```

```
OSAP ST ES:BX  aaaa bbbb cccc dddd
  Dlc.Open.Sap
    ST      Return code
    ES:BX   CCB address
    aa      SAP value
    bbbb    SAP station ID
```

```
RSAP ST ES:BX  aaaa bbbb cccc dddd
  Receive (for SAP)
    ST      Return code
    ES:BX   CCB address
    aa      Receive options
    bbbb    Station ID
```

```
TEST ST ES:BX  aaaa bbbb cccc dddd
  Transmit.Test.Cmd
    ST      Return code
    ES:BX   CCB address
    aa      Stripped FS field
    bb      Remote SAP value
    ccccdddd Four last bytes of remote address
```

```

OSTA ST  ES:BX  aaaa bbbb cccc dddd
Dlc.Open.Station
  ST      Return code
  ES:BX   CCB address
  aa     Remote SAP value
  bbbb   Link station ID
  cccc   Local SAP

UA  ST  ES:BX  aaaa bbbb cccc dddd
Dlc.Connect.Station
  ST      Return code
  ES:BX   CCB address
  bbbb   Station ID

RSTA ST  ES:BX  aaaa bbbb cccc dddd
Receive (for Link Station)
  ST      Return code
  ES:BX   CCB address
  aa     Receive options
  bbbb   Station ID

XMIT ST  ES:BX  aaaa bbbb cccc dddd
Transmit.I.Frame
  ST      Return code
  ES:BX   CCB address
  aa     Stripped FS field (High byte)
  aa     Remote SAP          (Low byte)
  bbbb   Station ID
  cccc   Data length

ASAP 00  ES:BX  aaaa bbbb cccc dddd
Receive SAP appendage
  ES:BX   Buffer address
  aa     Message type

ARCV 00  ES:BX  aaaa bbbb cccc dddd
Receive data appendage
  ES:BX   Buffer address
  aa     Message type
  bbbb   Station ID
  cccc   Received data length

CSTA ST  ES:BX  aaaa bbbb cccc dddd
Dlc.Close.Station
  ST      Return code
  ES:BX   CCB address
  bbbb   Station ID

```

token ring DLC trace, DOS

D LCS 00 ES:BX *aaaa bbbb cccc dddd*
DLC status appendage
aaaa DLC status
bb Remote SAP value
ccccddd Remote node address

C SAP ST ES:BX *aaaa bbbb cccc dddd*
Dlc.Close.Sap
ST Return code
ES:BX CCB address
bbbb Station ID

S TAT ST ES:BX *aaaa bbbb cccc dddd*
Statistics
ST Return code
ES:BX CCB address
aaaa Options
bbbb Station ID
ccccddd Log buffer address

F L O W ST ES:BX *aaaa bbbb cccc dddd*
Dlc.Flow.Control
ST Return code
ES:BX CCB address
aaaa Options
bbbb Station ID

B U F F ST ES:BX *aaaa bbbb cccc dddd*
Buffer.Free
ST Return code
ES:BX CCB address
bbbb Station ID
cccc Buffers left in pool

S T A U ST ES:BX *aaaa bbbb cccc dddd*
Dir.Status
ST Return code
ES:BX CCB address
aaaa Options
bbbb Station ID

A A C H 00 ES:BX *aaaa bbbb cccc dddd*
Appendage Adapter Check
ES:BX Appendage entry point
aaaa Status

A R S T 00 ES:BX *aaaa bbbb cccc dddd*
Appendage Ring Status
ES:BX Appendage entry point
aaaa Status

A P C E 00 ES:BX *aaaa bbbb cccc dddd*

```

Appendage PC Error
  ES:BX  Appendage entry point
  aaaa   Status

AV  00  ES:BX  aaaa bbbb cccc dddd
AV  SNA Function Call
  ES:BX  Appendage entry point
  --aa   Advise type

RLOG ST  ES:BX  aaaa bbbb cccc dddd
Dir.Read.Log
  ST      Return code
  ES:BX  Appendage entry point
  bbbb   Log length
  ccccddd Log buffer address

```

Supervisor traces

LANDP for DOS trace tools support the following supervisor traces:

- Functions trace
- Routines trace
- EHCLIP trace
- Display routines trace active or inactive
- Remote requests included or excluded
- Stop or start tracing

These choices are described under the following topics.

Functions trace

```

FUNCTIONS TRACE vv ww/ww/ww xx:xx:xx yy% (internal functions included) z
LAN_Suffix=
aaaaaa b cc dddddddd eeeeeeee ff gggg hhhh iii jjjj kkkk zzzz 1111111111
mm.mmm n ooooooooo pp qqqqqqqq rr ssssssss tttt uuuu vvvv wwww yyyyyyyyyy
aaaaaa b cc dddddddd eeeeeeee ff gggg hhhh iii jjjj kkkk zzzz 1111111111
mm.mmm n ooooooooo pp qqqqqqqq rr ssssssss tttt uuuu vvvv wwww yyyyyyyyyy

aaaaaa b cc dddddddd eeeeeeee ff gggg hhhh iii jjjj kkkk zzzz 1111111111
mm.mmm n ooooooooo pp qqqqqqqq rr ssssssss tttt uuuu vvvv wwww yyyyyyyyyy

F2=Save Esc/F3=Return F4=Inc/Excl F5=SaveAll PgUp/PgDn=Page F9=Hex/Char
    
```

The displayed heading values are as follows:

Values	Description
vv	The local workstation ID.
ww...	The current date when selecting the menu choice.
xx...	The current time (hh:mm:ss) when selecting the menu choice.
yy%	The maximum percentage of supervisor (max % SPV) buffer pool expense. This helps decide whether to use a smaller buffer pool to save memory, or a larger buffer pool. When loading the supervisor, specify the required buffer pool with the /K:mmm parameter. See the <i>LANDP Installation and Customization</i> book for information about the supervisor loading statement.
z	The page number.

Only 15 parameters are displayed. For the Zn function, data parameters are displayed to show the required information for each specific situation.

The Functions Trace choice displays a trace of the last application program calls to the supervisor. It displays the CPRB and the PARMLIST fields (on-request and on-completion) that correspond to the called function. The on-completion information is highlighted.

on-Request	
aa..	Time at request (hhmmss)
b	Event (request=1)(Z=3) (RMTREQ NoWait=4) (GETRPLY=5)
cc	Function ID
dd..	Resource origin
ee..	Server name
ff	Origin workstation ID
gg..	Request PARMLIST length
hh..	Request DATA length
ii..	Reply PARMLIST length
jj..	Reply DATA length
kk..	Origin process ID
zz..	Time out for the request
ll..	Input PARMLIST content
on-Completion	
mm..	Elapsed time (ss.mmm)
n	Event (reply=2)(Z=3)
oo..	Supervisor/Server return code
pp	Function ID
qq..	Server name
rr	Server workstation ID
ss..	Resource origin
tt..	Replied PARMLIST length
uu..	Replied DATA length
vv..	Destination process ID
ww	Internal flags
xx	Internal counter
yy..	Output PARMLIST content values

Select the number of functions trace pages to be displayed with the loading parameter **/P**. If loading the server into workstation memory, the number of pages can range from 3 to 40. If loading the server into expanded memory, the number of pages can range from 3 to 30. Up to 22 messages can be displayed on a page. Use the PgUp and PgDn keys to scroll from one page to another.

Pressing the F4 key includes or excludes the calls and displays or does not display the calls between servers. Press the F9 key to display the supervisor and server return codes, function code, and PARMLIST fields in hexadecimal format.

EHCLIP trace, DOS

nn... Data associated to the error returned by EHCLIP or statistics data. The following are displayed:

- Error code
- Data associated with the error
- Remote workstation ID if the error is related to a single session

See "EHCLIP program" on page 120 for a list of error codes returned by the EHCLIP program.

Statistics return codes start with the characters CS. They are issued when a session is established or interrupted, or when you request them by pressing the F6 key. This information can be useful when tracking network problems or diagnosing errors. See "EHCLIP program" on page 120 for a list of statistics codes returned by the EHCLIP program.

- Information line

This line displays the message TRACE DATA LOST when you stop or start the traces by pressing the F10 key.

EHCLIP program and TCP/IP tools: You can also use TCP/IP tools to diagnose external communication errors that effect the EHCLIP program. For example, TCP/IP tools might be helpful for these error conditions:

Error Condition	TCP/IP Tools
Unable to contact a remote workstation	Use the TCP/IP ping program to test contacting the workstation. The program sends an echo request and waits for a reply from the workstation.
Frequent loss and retransmission of datagrams, which results in poor performance	Use TCP/IP statistics operator commands to diagnose the following: <ul style="list-style-type: none">• Lack of space in the TCP/IP input buffers on the destination workstation. This can be caused by overload conditions.• Corruption of datagrams. This can be caused by unreliable communication circuits.
TCP/IP communication errors	Use TCP/IP internal trace tools, if available, to diagnose these errors.

Refer to TCP/IP documentation for more information about diagnosing communication problems.

Display routines trace Active or Inactive

Use the Display Routines Trace Active and Display Routines Trace Inactive choices to start and stop the display of supervisor and LAN or EHCLIP traces on the screen.

Routines traces are useful for IBM support representatives when diagnosing network problems.

Note: The data that appears on the screen can overlap data from LANDP applications or other programs.

When workstation operation is suspended, the routines trace can be used to determine the cause. This trace tool operates in a similar way to a data-scope analyzer that displays network activity on the screen.

If the DDT server is not active, the routines trace can be started and deactivated by pressing Ctrl+Tab+Backspace. This hot-key combination is controlled by the supervisor.

The display routines trace choices are not available when working in DBCS mode.

Remote requests Included or Excluded

Use the Remote Requests Included and Remote Requests Excluded choices to include or exclude the remote incoming requests in the function trace.

Stop or start tracing

Use the Stop Tracing choice to stop tracing SNA, supervisor functions, and EHCLIP. When you stop tracing, you can save the buffer contents to track any specific problem you want to solve.

Use the Start Tracing choice to start the traces.

Chapter 3. LANDP for OS/2 trace tools

This chapter describes how to use the LANDP for OS/2 trace tools. Use these tools to debug LANDP application programs or to diagnose problems on LANDP for OS/2 workstations.

LANDP for OS/2 trace tool functions are provided by the following:

EHCTRACW server

This server records in memory or on disk the trace events and errors that occur while LANDP programs are running.

EHCPDT program

This program displays, prints, or records on disk, trace and error log data from various sources. The program runs in an OS/2® window.

The EHCTRACW server and EHCPDT program work together to detect errors or abnormal situations, and to provide information about LANDP program operations.

For extra information ...

... and worked examples on the traces that LANDP produces, take a look at the file called GG243842.BOO that is shipped with LANDP Version 5. Use one of the IBM BookManager READ products to view this file.

This file contains information from the *FBSS Problem Determination Guidelines* "Red Book", GG24-3842, that was produced by the IBM International Technical Support Center (ITSC). The information describes FBSS traces but is equally relevant to traces for LANDP for DOS and OS/2.

Note: Part 2 of *LANDP Problem Determination* (this manual) contains up-to-date information on return codes—so do *not* use the information in the appendixes of the *FBSS Problem Determination Guidelines* "Red Book".

Loading the EHCTRACW server

The EHCTRACW server can be loaded at LANDP for OS/2 initialization time, immediately after the supervisor, or at any other time. The preferred loading method is during initialization because any errors that occur while initializing the server are written to the error log file. You can check the trace and log files for any problems occurring during the loading process.

If the trace server is not loaded, the system creates two ASCII files with the filename extensions .LGD and .TRP. You can check these files for information about errors. The files are also created if a trap or an OS/2 SYS3175 message occurs at any time.

Using the EHCTRACW server

The EHCTRACW server does the following:

- Writes to a file errors that occur at LANDP program run time. This is called *error logging*.
- Records the sequence in which a series of events occur. This is called *event tracing*.

If the EHCTRACW server is running, error logging to disk is always active. Event tracing is optional and depends on the setting of the EHCTRACW loading parameter.

Note: If servers are loaded in background mode using the DETACH command, loading errors cannot be displayed. To see the errors, you must consult the error log file.

Error logging

The trace tool writes to the log file errors that might cause LANDP or a specific server to stop running. The tool logs the following errors, for example:

- Errors that occur while initializing LANDP for OS/2 or a LANDP for OS/2 server
- Errors that occur while running LANDP for OS/2 or a LANDP for OS/2 server
- Internal software and hardware errors that occur while running LANDP for OS/2

Return codes

Return codes correspond either to errors that a LANDP program component detects during its loading process or internal errors the component detects at run time. Return codes are displayed in the **return code** field of the error log file. You can change the format of the displayed return codes, for example, from hexadecimal to decimal.

LANDP program components detect system internal software errors and errors that occur while processing a request. The errors have a corresponding LANDP program server return code in the CPRB the requester receives. An entry in the error log file contains the detected system error.

Most system internal errors are generated by the OS/2 operating system. OS/2 errors are documented in OS/2 product manuals. See “Bibliography” on page 423 for a list of OS/2 books.

Log entries

Item	Description
No.	The entry sequence number
Date	The date when the logged event occurs
Time	The time when the logged event occurs
Product ID	The LANDP for OS/2 component identifier
Level ID	The LANDP product release level
Bucket	A reserved field
Component PC	The workstation ID of the workstation where the calling program runs
Component	The name of the calling program
Function	A reserved field
Event	A reserved field
Return code	Either a LANDP for OS/2 return code or an internal software or hardware error code
Record class	The error class, with one of the following values: F Fatal W Warning or Attention E Error
Format number	An unused field, reserved for future use
Data	An item containing the following fields: <ul style="list-style-type: none"> The name of the system component where the error was found. For LANDP for OS/2 return codes, the content of this field is LANDP for OS/2. Information reserved for an IBM support representative

Figure 2. LANDP for OS/2 Trace Tools: Contents of error log entries

Event tracing

The EHCTRACW server operates under the following status settings:

Setting	Status
Memory	Store event traces and log records in memory. This is the default setting.
File	Copy event traces and log records to a data file.
No	Load the trace server, but do not activate event tracing.

Notes:

- If you specify the Memory setting, trace information is available only while LANDP for OS/2 is running.
- If you specify the File setting, trace information is always available. You can consult the file whether LANDP for OS/2 programs are running or not.

Although this setting has lower performance than the other options, it is a good choice when you are determining the cause of a problem that is difficult to reproduce.

- If trace conditions do not exist and trace status is set to a status other than No, all trace records are stored.

event tracing, OS/2

Set the trace status when loading the EHCTRACW server by specifying a parameter and one of the previously listed status settings. Include in the loading statement the parameter **/T**, followed by one of these settings:

- MEMORY
- FILE
- NO

For example:

```
LOADER EHCTRACW /T:FILE
```

The **/MT** parameter specifies the maximum number of trace entries. For example, **/MT:7500** gives approximately a 3MB trace, which “packs” (using PKZIP or LOADRAM) down to approximately 1.4MB (fitting on one diskette). **/MT:50000** packs down to approximately 20MB.

By default, the active status setting is Memory. See the *LANDP Installation and Customization* book for information about loading statements, parameters, and default values.

The EHCTRACW server traces all supervisor functions on the workstation where EHCTRACW is loaded. It logs any errors in a file. The log and trace files have the following file-name format:

<i>Trace file</i>	EHCTRCxx.DAT
<i>Log file</i>	EHCLOGxx.DAT

where **xx** is the workstation identifier.

The items contained in each trace event entry are:

Item	Description
No.	The entry sequence number
Date	The date when the logged event occurred
Time	The time when the logged event occurred
Product ID	The LANDP for OS/2 component identifier
Level ID	The LANDP product release level
Bucket	A reserved field
Component PC	The workstation ID of the workstation where the calling program runs
Component	The name of the calling program
Function	The CPRB function field
Event	The CPRB verb type field
Return code	Either the supervisor return code or the server return code fields defined in the CPRB.
Record class	T for a normal trace entry F, W, or E for logged errors (see "Error logging" on page 38)
Format number	An unused field, reserved for future use
Data	An item containing the following fields:
	Origin data
	Origin workstation ID
	Process origin
	Instance ID origin
	Destination data
	Destination workstation ID
	Process destination
	Instance ID destination
	Request parameter length
	Qp:
	Request data length
	Qd:
	Reply parameter length
	Pp:
	Reply data length
	Pd:
	Replied parameter length
	Dp:
	Replied data length
	Dd:
	Request parameter area
	QpA
	Request data area
	QdA
	Reply parameter area
	PpA
	Reply data area
	PdA

Figure 3. LANDP for OS/2 Trace Tools: Contents of trace event entries

EHCTRAF program

Using the EHCPDT program

The EHCPDT program displays, prints, and saves error log and event trace information. It is a stand-alone program that runs in an OS/2 window.

You can start the EHCPDT program at any time, whether or not LANDP programs are running. Start the program from an OS/2 command prompt or by double-clicking on the EHCPDT program object.

If the supervisor and EHCTRAF server are loaded when the EHCPDT program starts, it automatically displays in a window trace area the contents of the trace in memory.

To display the contents of an event trace or error log file from the OS/2 command prompt, enter EHCPDT *filename*.

To display the contents of an event trace or error log file from an OS/2 window, use one of the following methods:

- Drag the trace or log file object, and drop it onto the EHCPDT program object.
- Open the trace or log file by double-clicking on the object.

Note: This method requires association settings, which you specify in the Settings (or Properties) notebook of the EHCPDT object.

Traces that are generated while the EHCPDT program is running do not display until you refresh the window, using the vertical scroll bar. This prevents traces from displaying continuously and allows you to control when you want to display new trace information.

Using the EHCTRAF program

The EHCTRAF program formats the contents of an event trace file into an ASCII file. The event trace file may have been produced by loading EHCTRAF with the /T:FILE parameter, or by using the **Save** option in EHCPDT. The output file contains four heading lines followed by one line for each trace (or log) record.

To use EHCTRAF, enter the following:

```
EHCTRAF tracefile [/O:outputfile] [/H]
```

where:

tracefile Is the name of the LANDP for OS/2 trace file to be formatted.

outputfile Is the name of the file to contain the formatted trace. If the /O: parameter is not specified, the output file defaults to the path name and file name of the trace file with extension FMT.

/H specifies that the Parameter and Data areas are to be formatted in hexadecimal.

EHCLIP program services

:

The following topics contain information about internal and communication data traces and error logs that are generated by LANDP for OS/2 trace tools and the EHCLIP program.

Internal and communication traces

EHCLIP, the LANDP Internet Protocol program, can trace internal and communication data. To request internal routines or communication traces, specify the parameters */T* or */C*, respectively, in the EHCLIP.EXE loading statement.

If EHCLIP is started in the foreground, trace output is directed to the screen, which is the default. To direct the trace output to an ASCII file or the EHCTRACW server, specify the parameter */O* and a value on the loading statement. See the *LANDP Installation and Customization* book for information about loading programs, loading statements, and parameter values.

Communication traces contain the following items:

- COMM, which is the communication trace identifier
- Datagram length
- Remote workstation identifier
- Time, in the format *hh.mm.ss.mmm*
- Trace line type identifier, which can take the following values:
 - I Input datagram
 - O Output datagram

Other entries that appear on the communication trace line are used by IBM support representatives.

Logging errors and statistics

EHCLIP uses the EHCTRACW server to log information about external and internal errors and statistics. This information can be helpful when diagnosing errors or tracking communication problems.

The format of EHCLIP log entries is:

Field	Entry
Component field	EHCLIP
Return code	'1'
Data	Error code Data associated with the error Remote workstation ID if the error is related to a single session

Figure 4. LANDP for OS/2 Trace Tools: Format of EHCLIP log entries

EHCLIP traces, OS/2

See "EHCLIP program" on page 179 for a list of error codes and statistics returned by the EHCLIP program.

EHCLIP program and TCP/IP tools

You can also use TCP/IP tools to diagnose external communication errors that effect the EHCLIP program. For example, TCP/IP tools might be helpful for these error conditions:

Error Condition	TCP/IP Tools
Unable to contact a remote workstation	Use the TCP/IP ping program to test contacting the workstation. The program sends an echo request and waits for a reply from the workstation.
Frequent loss and retransmission of datagrams, which results in poor performance	Use TCP/IP statistics operator commands to diagnose the following: <ul style="list-style-type: none"> • Lack of space in the TCP/IP input buffers on the destination workstation. This can be caused by overload conditions. • Corruption of datagrams. This can be caused by unreliable communication circuits.
TCP/IP communication errors	Use TCP/IP internal trace tools, if available, to diagnose these errors.

Figure 5. TCP/IP Tools: Communication errors and EHCLIP program

Refer to TCP/IP documentation for more information about diagnosing communication problems.

Chapter 4. LANDP for Windows NT trace tools

This chapter describes how to use the LANDP for Windows NT trace tools. Use these tools to debug LANDP application programs or to diagnose problems on LANDP for Windows NT workstations.

LANDP for Windows NT trace tool functions are provided by the following:

EHCTRACW server

This server records in memory or on disk the trace events and errors that occur while LANDP programs are running.

EHCPDT program

This program displays, prints, or records on disk, trace and error log data from various sources. The program runs in a Windows NT window.

The EHCTRACW server and EHCPDT program work together to detect errors or abnormal situations, and to provide information about LANDP program operations.

You should also check the Windows NT event log.

Loading the EHCTRACW server

The EHCTRACW server can be loaded at LANDP for Windows NT initialization time, immediately after the supervisor, or at any other time. The preferred loading method is during initialization because any errors that occur while initializing the server are written to the error log file. You can check the trace and log files for any problems occurring during the loading process.

If the trace server is not loaded, the system creates two ASCII files with the filename extensions .LGD and .TRP. You can check these files for information about errors. The files are also created if a trap occurs at any time.

Using the EHCTRACW server

The EHCTRACW server does the following:

- Writes to a file errors that occur at LANDP program run time. This is called *error logging*.
- Records the sequence in which a series of events occur. This is called *event tracing*.

If the EHCTRACW server is running, error logging to disk is always active. Event tracing is optional and depends on the setting of the EHCTRACW loading parameter.

Note: If servers are loaded in background mode using the START command, loading errors cannot be displayed. To see the errors, you must consult the error log file.

Error logging

The trace tool writes to the log file errors that might cause LANDP for Windows NT or a specific server to stop running. The tool logs the following errors, for example:

- Errors that occur while initializing LANDP for Windows NT or a LANDP for Windows NT server
- Errors that occur while running LANDP for Windows NT or a LANDP for Windows NT server
- Internal software and hardware errors that occur while running LANDP for Windows NT

Return codes

Return codes correspond either to errors that a LANDP program component detects during its loading process or internal errors the component detects at run time. Return codes are displayed in the **return code** field of the error log file. You can change the format of the displayed return codes, for example, from hexadecimal to decimal.

LANDP program components detect system internal software errors and errors that occur while processing a request. The errors have a corresponding LANDP program server return code in the CPRB the requester receives. An entry in the error log file contains the detected system error.

Most system internal errors are generated by the Windows NT operating system.

Log entries

Item	Description
No	The entry sequence number
Date	The date when the logged event occurs
Time	The time when the logged event occurs
Product ID	The LANDP for Windows NT component identifier
Level ID	The LANDP product release level
Bucket	A reserved field
Component PC	The workstation ID of the workstation where the calling program runs
Component	The name of the calling program
Function	A reserved field
Event	A reserved field
Return code	Either a LANDP for Windows NT return code or an internal software or hardware error code
Record class	The error class, with one of the following values: F Fatal W Warning or Attention E Error
Format number	An unused field, reserved for future use
Data	An item containing the following fields: <ul style="list-style-type: none">• The name of the system component where the error was found. For LANDP for Windows NT return codes, the content of this field is LANDP for Windows NT.• Information reserved for an IBM support representative

Figure 6. LANDP for Windows NT Trace Tools: Contents of error log entries

Event tracing

The EHCTRACW server operates under the following status settings:

Setting	Status
Memory	Store event traces and log records in memory. This is the default setting.
File	Copy event traces and log records to a data file.
No	Load the trace server, but do not activate event tracing.

Notes:

1. If you specify the Memory setting, trace information is available only while LANDP for Windows NT is running.
2. If you specify the File setting, trace information is always available. You can consult the file whether LANDP for Windows NT programs are running or not. Although this setting has lower performance than the other options, it is a good choice when you are determining the cause of a problem that is difficult to reproduce.
3. If trace conditions do not exist and trace status is set to a status other than No, all trace records are stored.

Set the trace status when loading the EHCTRACW server by specifying a parameter and one of the previously listed status settings. Include in the loading statement the parameter */T*, followed by one of these settings. For example:

```
LOADER EHCTRACW /T:FILE
```

By default, the active status setting is Memory. See the *LANDP Installation and Customization* book for information about loading statements, parameters, and default values.

The EHCTRACW server traces all supervisor functions on the workstation where EHCTRACW is loaded. It logs any errors in a file. The log and trace files have the following file-name format:

<i>Trace file</i>	EHCTRCxx.DAT
<i>Log file</i>	EHCLOGxx.DAT

where xx is the workstation identifier.

event tracing, Windows NT

The items contained in each trace event entry are:

Item	Description
No	The entry sequence number
Date	The date when the logged event occurred
Time	The time when the logged event occurred
Product ID	The LANDP for Windows NT component identifier
Level ID	The LANDP product release level
Bucket	A reserved field
Component PC	The workstation ID of the workstation where the calling program runs
Component	The name of the calling program
Function	The CPRB function field
Event	The CPRB verb type field
Return code	Either the supervisor return code or the server return code fields defined in the CPRB.
Record class	The c'T' value
Format number	An unused field, reserved for future use
Data	An item containing the following fields:
	Origin data
	Origin workstation ID
	Process origin
	Instance ID origin
	Destination data
	Destination workstation ID
	Process destination
	Instance ID destination
	Request parameter length
	Qp:
	Request data length
	Qd:
	Reply parameter length
	Pp:
	Reply data length
	Pd:
	Replied parameter length
	Dp:
	Replied data length
	Dd:
	Request parameter area
	QpA
	Request data area
	QdA
	Reply parameter area
	PpA
	Reply data area
	PdA

Figure 7. LANDP for Windows NT Trace Tools: Contents of trace event entries

Using the EHCPDT program

The EHCPDT program displays, prints, and saves error log and event trace information. It is a stand-alone program that runs in a Windows NT window.

You can start the EHCPDT program at any time, whether or not LANDP programs are running. Start the program from a Windows NT command prompt or by double-clicking on the EHCPDT program icon.

If the supervisor and EHCTRACW server are loaded when the EHCPDT program starts, EHCPDT automatically displays the contents of the in-memory trace.

To display the contents of an event trace or error log file from the Windows NT command prompt, enter `EHCPDT filename`.

To display the contents of an event trace or error log file from a Windows NT window, use one of the following methods:

- Drag the trace or log file object, and drop it onto the EHCPDT program icon.
- Open the trace or log file by double-clicking on the file icon.

Note: This method requires association settings, which you specify in the file's Properties window.

Traces that are generated while the EHCPDT program is running do not display until you refresh the window. This prevents traces from displaying continuously and allows you to control when you want to display new trace information.

You can save traces that are displayed by EHCPDT either as trace or log format files or as ASCII files, saving either the currently selected records or all records. If you save the trace in ASCII format, you can save either the currently selected fields or all fields. You can set the hexadecimal display option to save the fields in hexadecimal form.

Using the EHCTRAF program

The EHCTRAF program formats the contents of an event trace file into an ASCII file. The event trace file may have been produced by loading EHCTRAF with the `/T:FILE` parameter, or by using the **Save** option in EHCPDT. The output file contains four heading lines followed by one line for each trace (or log) record.

To use EHCTRAF, enter the following:

```
EHCTRAF tracefile [/O:outputfile] [/H]
```

where:

tracefile Is the name of the LANDP for Windows NT trace file to be formatted.

outputfile Is the name of the file to contain the formatted trace. If the `/O:` parameter is not specified, the output file defaults to the path name and file name of the trace file with extension FMT.

`/H` specifies that the Parameter and Data areas are to be formatted in hexadecimal.

EHCLIP program services

:

The following topics contain information about internal and communication data traces and error logs that are generated by LANDP for Windows NT trace tools and the EHCLIP program.

Internal and communication traces

EHCLIP, the LANDP Internet Protocol program, can trace internal and communication data. To request internal routines or communication traces, specify the parameters `/T` or `/C`, respectively, in the EHCLIP.EXE loading statement.

If EHCLIP is started in the foreground, trace output is directed to the screen, which is the default. To direct the trace output to an ASCII file or the EHCTRAF server, specify the parameter `/O` and a value on the loading statement. See the *LANDP Installation and Customization* book for information about loading programs, loading statements, and parameter values.

Communication traces contain the following items:

- COMM, which is the communication trace identifier
- Datagram length
- Remote workstation identifier
- Time, in the format *hh.mm.ss.mmm*
- Trace line type identifier, which can take the following values:
 - I Input datagram
 - O Output datagram

Other entries that appear on the communication trace line are used by IBM support representatives.

Logging errors and statistics

EHCLIP uses the EHCTRAW server to log information about external and internal errors and statistics. This information can be helpful when diagnosing errors or tracking communication problems.

The format of EHCLIP log entries is:

Field	Entry
Component field	EHCLIP
Return code	'1'
Data	Error code Data associated with the error Remote workstation ID if the error is related to a single session

Figure 8. LANDP for Windows NT Trace Tools: Format of EHCLIP log entries

See “EHCLIP program” on page 179 for a list of error codes and statistics returned by the EHCLIP program.

EHCLIP program and TCP/IP tools

You can also use TCP/IP tools to diagnose external communication errors that effect the EHCLIP program. For example, TCP/IP tools might be helpful for these error conditions:

Error Condition	TCP/IP Tools
Unable to contact a remote workstation	Use the TCP/IP ping program to test contacting the workstation. The program sends an echo request and waits for a reply from the workstation.
Frequent loss and retransmission of datagrams, which results in poor performance	Use TCP/IP statistics operator commands to diagnose the following: <ul style="list-style-type: none"> Lack of space in the TCP/IP input buffers on the destination workstation. This can be caused by overload conditions. Corruption of datagrams. This can be caused by unreliable communication circuits.
TCP/IP communication errors	Use TCP/IP internal trace tools, if available, to diagnose these errors.

Figure 9. TCP/IP Tools: Communication errors and EHCLIP program

Refer to TCP/IP documentation for more information about diagnosing communication problems.

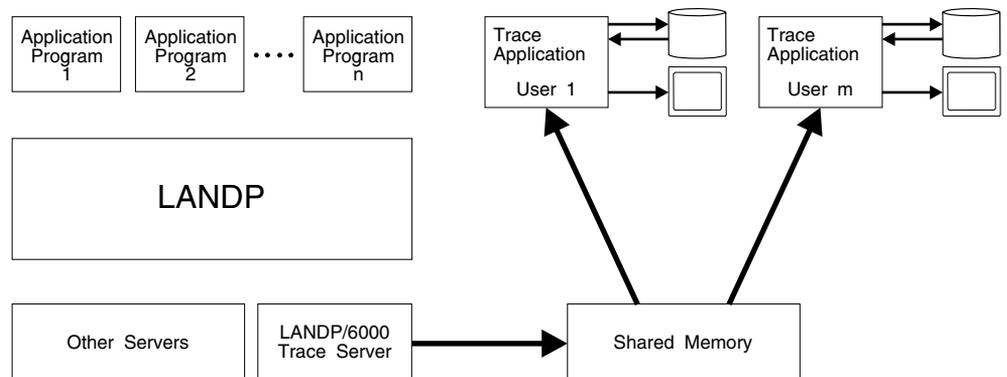
Chapter 5. LANDP for AIX trace tools

This chapter describes how to use the LANDP for AIX trace tools. Use these tools to diagnose problems on LANDP for AIX workstations at the production site.

The LANDP for AIX trace tools consist of a *trace server* and *trace applications*.

- The trace server records any interaction between application programs and servers within the LANDP for AIX environment. It writes interaction data, as trace records, to a shared-memory area in wraparound mode.
- Trace applications access the shared-memory area and retrieve the trace records for displaying, printing, or other processing.

This diagram shows how the trace server and trace applications fit into the LANDP for AIX environment:



Using the trace server

Start or stop the trace server by using the system management interface tool (SMIT). Starting or stopping the server requires system administrator authority.

When starting the trace server, you must define the size of the shared-memory area by specifying the number of trace records that fit into shared memory, before it is wrapped.

Using trace applications

Start trace applications by entering the command:

```
dczytrdsp
```

(See also “Trace to file utility” on page 58.)

Trace applications can do the following:

- Copy trace records in ASCII format to a file or printer
- Display trace records
- Display trace records previously written to a file
- Write trace records to a file

Online information about how to use trace application functions is available. Click on **Help** to access the information.

Copying trace records

You can provide trace records for someone who does not have access to a LANDP for AIX trace application by copying the trace records in ASCII format to a file or printer.

When copying trace records, any selected filters remain active. This means that the trace record format displayed in the application window is copied to the ASCII file.

Displaying trace records

The following topics describe ways to display trace records.

Retrieve and display modes

Trace applications can run in either static or dynamic mode. The mode specifies how the trace application retrieves and displays trace records from shared memory. To change from dynamic mode to static, select the freeze button. To return to dynamic mode, select the unfreeze button.

Dynamic mode: In dynamic mode, the trace application continuously retrieves the most current trace records from shared memory. This allows you to watch events as they occur within a LANDP workgroup and as the trace server writes them to the shared-memory area.

In this mode, the trace server writes records to shared memory faster than the trace application retrieves and displays the records. The shared memory is wrapped, and trace records are overwritten before the trace application can retrieve and display them.

Static mode: In static mode, the trace application gets as many up-to-date trace records from shared memory as it can fit into the trace application window. The trace records stay in the window until any action, for example 'move forward' or 'move to top', is performed.

In this mode, you can view several trace records while the trace server continuously writes records to the shared memory area. The shared memory can be wrapped one

or more times while you are looking at the static trace application window, depending on the number of trace records that the trace server writes to the shared-memory area.

You can scroll through the window using the **top**, **up**, **down**, and **bottom** buttons. Scrolling means moving the application window logically over the shared-memory area.

The buttons perform the following functions:

- **top** retrieves the oldest trace records from shared memory.
- **bottom** retrieves the latest trace records from shared memory.
- **up** retrieves the previous trace records from shared memory.
- **down** retrieves the following trace records from shared memory.

If the shared memory area is wrapped, the trace records that are currently displayed are overwritten in shared memory.

Trace filters

Trace applications have filter options that allow you to specify the trace records to be displayed. The trace application displays trace records based on conditions that you define using the filters. It checks each trace record and then displays the record only if it meets your filter conditions.

Generic filter: The generic filter allows you to specify the conditions that trace records must meet to be displayed. For example, you can specify that only those trace records originated by a certain user ID are displayed.

Workstation filter: The workstation filter allows you to specify if you want to display trace records from your local or remote workstations, or both. If you specify 'local' or 'remote', you must specify the workstation ID of your local workstation.

User ID filter: The user ID filter allows you to display trace records that belong to your own, specific, or all user IDs. By default, this filter contains your own user ID.

Trace View menu

Trace records consist of several items that show different trace data, for example:

- Server name
- Data field
- Parameter field

Trace applications have a selection menu from which you can select the trace record items that you want to display.

Display CPRB information

If you are running the trace application in static mode, you can view more CPRB information about any trace record. To see more information, select the trace record by clicking on it with mouse button 2.

trace applications, AIX

Depending on the record class you select (trace record or log record), you see the following additional information:

Trace Record

Router return code
Server return code
Function ID
Request/reply DATA
Request/reply PARMLIST

Log Record

Server return code
Request/reply DATA

The difference between log and trace records is that log records always contain a nonzero server return code.

Writing trace records

Trace applications can write trace records retrieved from shared memory to a file, without displaying the records. The trace records are indexed as they are written to the file.

The shared memory can receive trace records faster than the trace application can retrieve and write the records to a file. If the shared memory is wrapped, the trace records are overwritten before they are written to a file. The trace records are then lost.

When writing trace records to a file, filters are ignored. Because each trace record contains the maximum data, the file where the records are written can rapidly increase in size.

To display the trace records, select the **read from file** choice on the File pull-down menu. Use the filters and the **view** options.

Trace to file utility

In some circumstances you may not be able to use the `dczytrdsp` command: for example, you may not be able to run Motif applications. The trace to file utility gives you another way of storing trace information. Start the utility by entering the command `dczytrfile -f [fname]`

where *fname* is the name of the file to which you are writing. If you omit *fname*, the file `/tmp/LANDP.trace` is used.

All trace records currently in shared memory are written to *fname* in ASCII format (formatted). Unlike `dczytrdsp`, the utility does not filter out any fields.

If the *fname* parameter is missing or invalid, the utility displays the syntax of the command.

AIX system log

LANDP also writes serious errors to the AIX® system log. To view the log, use **smit error** to generate an error report with the resource.NAME of LANDP for AIX.

Dczylip program services

:

The LANDP Internet Protocol program, dczylip, uses the trace server to log information about errors, internal routines, and communications.

Error logging

Information logged about external and internal errors and statistics can be helpful when diagnosing errors or tracking communication problems.

The dczylip program writes error information to **errorlog** and the trace server. The following error information is logged in dczylip:

- Error code
- Data associated with the error
- Remote workstation ID, if the error relates to a single session

The displayed return codes start with the characters CE. See “DCZYLIP program” on page 291 for a list of error codes returned by the dczylip program.

The dczylip program also returns statistics information. Statistics return codes are issued when a session is established or interrupted. These codes are written only to the trace server. The displayed return codes start with the characters CS. See “DCZYLIP program” on page 291 for a list of statistics codes returned by the dczylip program.

You can also use TCP/IP tools to diagnose external communication errors that effect the dczylip program. For example, TCP/IP tools might be helpful for the error conditions:

Error Condition	TCP/IP Tools
Unable to contact a remote workstation	Use the TCP/IP ping program to test contacting the workstation. The program sends an echo request and waits for a reply from the workstation.
Frequent loss and retransmission of datagrams, which results in poor performance	Use TCP/IP statistics operator commands to diagnose the following: <ul style="list-style-type: none">• Lack of space in the TCP/IP input buffers on the destination workstation. This can be caused by overload conditions.• Corruption of datagrams. This can be caused by unreliable communication circuits.
TCP/IP communication errors	Use TCP/IP internal trace tools, if available, to diagnose these errors.

Figure 10. TCP/IP Tools: Communication errors and dczylip program

Refer to TCP/IP documentation for more information about diagnosing communication problems.

Internal and communications traces

The dczylip program can trace internal and communications data. To trace internal routines, specify the parameter **-T** in the dczylip loading statement. To trace communications, specify the parameter **-C**.

Unless you use dczyloder when loading dczylip, traces are directed to the default output. To redirect traces to a file, use the parameter **-O** in the loading statement.

For more information on the loading statement, see the *LANDP Installation and Customization* book.

Communications traces contain the following items:

- COMM, the communications trace identifier
- Datagram length
- Remote workstation identifier
- Time (*hh.mm.ss.mmm*)
- Trace line type: **I** (input), or **O** (output)

Other entries that appear are for use by IBM support representatives.

Traces of internal routines result in CE and CS messages.

Chapter 6. Support

If you have a LANDP problem that you cannot resolve by using the problem determination tools or the information in the LANDP books, contact your IBM country support. When raising an incident, try to isolate the problem and provide IBM with clear and concise documentation on the problem and, if possible, on how to recreate it.

This chapter contains guidelines for requesting support and tips for collecting the information required by support representatives. It includes a guide to using the VERSION utility, a description of LANDP's maintenance strategy, and flowcharts to guide you in isolating a problem and providing IBM with the correct documentation.

For information on applying program fixes, see the *LANDP Installation and Customization* book.

Guidelines for requesting assistance

Before requesting assistance with problems, consider the following:

- LANDP family components work with other software products, including operating systems and application programs.

It is possible that another software product is causing the problem. Test your operating environment to ensure that a LANDP component is causing the problem.

- Support representatives require a detailed account of the problem and supporting data.

When you report a problem, make sure you have available the information under "Documentation required by IBM" on page 62. Representatives use this information to determine the cause of a problem. Also be prepared to answer any of the following questions:

- In which operating environment did the problem occur?
- What is the service and release level of the failing component?
- What diagnostic information relates to the problem?
- What was the sequence of events surrounding the problem?
- What recovery activities did you attempt?
- Can you re-create the problem?
- What is the severity of the problem?
- Are you able to continue productive work?
- Make sure you provide the representative with a detailed description of the problem, a method of reproducing it, and all supporting data. Also make sure that any files or media you send to IBM can be restored and used by support representatives.
- Where the key combination "Alt-Numlock" is referred to in the flowcharts, this is the default key setting to obtain access to the DDT trace program.

Documentation required by IBM

The list of items that may be required to determine the cause of a particular problem varies according to operating system, transport protocol, and so on. The following checklist identifies some of the key information that is likely to be needed by the support representatives. It should not be treated as exhaustive and should be supplemented with whatever pertinent information can be provided.

Most of these items are referred to in the flowcharts that follow. Items 18-21 are not mentioned, but 18 and 19 are always required. 20 may be requested for a Windows NT problem, and 21 should be provided if available.

1. Diskette or diskettes, from which a personal computer system can be booted. Take these from one or more workstations as requested. These are needed to reproduce the error.
2. CONFIG.*
3. AUTOEXEC.BAT - Not necessary for OS/2 PWS (personal workstation).
4. VERSION.TXT, which is generated by running VERSION.EXE in the LANDP subdirectory of the workstation where the problem is occurring. See "VERSION utility" on page 65 for more information.

 AUTOFBSS.BAT - For DOS and Windows NT PWS
 AUTOFBSS.COMD - For OS/2 PWS
5. Function traces showing the errors in EHCTRCXX.DAT and EHCTRCXX.LOG on OS/2 machines where xx is the PWS ID. On DOS PWSs, use the function traces ensuring the error is shown and internal traces are included.
6. An SNA trace showing the error. Provide all three pages if available.
7. A routines trace.
8. An SDLC trace.
9. An X.25 adapter trace and X.25 Network Errors trace. Start the trace before attempting to re-create the error.
10. A native X.25 trace.
11. A token-ring DLC trace.
12. Details of the current Corrective Service Diskette (CSD) level of your Operating System.
13. An OS/2 Communications Manager trace with the LU Application Custom Feature Request-level Interface (LUA_RUI) and the appropriate Data Link Control (DLC) options selected.
14. Details of all hardware used in your configuration. Include the number and type of PWS used and all adapters installed, together with any interrupt levels used and memory addresses set.

15. Details of the programs loaded in the system memory. For DOS and Windows NT machines, run the MEM/DEBUG command. For OS/2 machines, run the PSTAT command. The output can be piped to a file using the > symbol. For example:

```
PSTAT > filename  
MEM /DEBUG > filename
```

Send this output to IBM.

16. COMMON.SPC, LANCONF.SPC, and possibly MODELS.SPC on the workgroup configuration machine.
17. LAN.CFG.
18. Problem description. A full description of the problem, how it occurs, what it affects, and how it can be recreated. If the problem occurred following system changes, describe the nature of these changes.
19. Operating system and release level. To determine this, enter the following:
 - DOS
Ver > filename
(Where filename is the name of an output file)
 - OS/2
Syslevel > filename
(Where filename is the name of an output file)
 - Windows NT
WINMSD
This will invoke a window from which the current operating system level should be noted.
20. Output from REGEDT32, the Windows NT registry editor utility.
21. .LGD and .TRP files (OS/2 and Windows NT). These files are produced by a system trap.

LANDP functions traces

Collect function traces covering the period during which the error occurred. If particular actions are required to initiate the problem, it will be helpful if these are described with reference to timestamps in the traces.

The use of LANDP trace servers is detailed in Chapter 2, "LANDP for DOS trace tools" on page 9, Chapter 3, "LANDP for OS/2 trace tools" on page 37, and Chapter 4, "LANDP for Windows NT trace tools" on page 47.

VERSION utility

The VERSION utility helps in LANDP maintenance and problem determination. It determines the current version level of LANDP components, and tracks maintenance fixes installed on the components. IBM requires this information if you request assistance. (For further information about the VERSION utility, see the *LANDP Family Installation and Customization Guide*, Chapter 20.)

The VERSION utility performs the following functions:

- Determines the current version of the component program files
- Determines the last authorized program analysis report (APAR) or program temporary fix (PTF) applied to:
 - LANDP components
 - FBSS, PC/Integrator, and PC Integrator/2 programs
- Displays the program name, program version, and last-applied APAR or PTF level

When you run the VERSION utility, it creates a file called VERSION.TXT. The VERSION program writes to this file the component program name, version, APAR, and PTF information.

You can run the VERSION utility on a LANDP for DOS, OS/2, and Windows NT customization workstation, or on a LANDP for AIX workstation.

Starting VERSION on a LANDP for DOS, OS/2, and Windows NT workstation

Start the VERSION utility from the EHCMAINT directory on the customization workstation, or from the directories that contain the LANDP components on the production site workstation (running LANDP for DOS, OS/2, and Windows NT).

To start the utility, do the following:

1. Complete *one* of the following steps:
 - Customization workstations: Make EHCMAINT the current directory.
 - Production site workstations: Make the directory that contains the LANDP components the current directory.

2. Enter the following command:

```
VERSION [ccth1] [/0:ccth2]
```

where:

ccth1 Is the path and drive the VERSION program searches. Specify the path and drive where the LANDP programs reside.

If you do not specify this parameter, the VERSION utility searches only the current directory and the LANDP reserved subdirectories.

VERSION utility

/0:ccth2 Is the target drive and path where the VERSION utility places the output file, VERSION.TXT.

If you do not specify this parameter, the VERSION program places VERSION.TXT in the current directory.

Starting VERSION on a LANDP for AIX workstation

When you run the VERSION utility on a LANDP for AIX workstation, you can specify the name of the file where the information will be written.

Start the VERSION utility on the production site workstation, from the directories that contain the LANDP for AIX component files. To start the program, do the following:

1. Make the directory that contains the component files the current directory.
2. Enter the following command:

```
dczyversion [>filename.extension]
```

where *filename.extension* is the name of the file where the information will be written. This parameter is optional.

Note: You can also start this procedure from the SMIT menu.

Reading the output from VERSION

The VERSION utility generates a line of output for each LANDP component.

If information is missing, a line appears in this format:

```
ID=ssssssss          ID not found
```

The LANDP component ssssssss does not include the identifier information.

If a program fix has been applied incorrectly, a line appears in this format:

```
ID=ssssssss          Wrong fix format
```

The LANDP program fix for component ssssssss is applied incorrectly. For information and procedures for installing program fixes, see the *LANDP Installation and Customization* book.

If a component is correctly installed and all information is available, a line appears in this format:

```
ID=ssssssss    VL=vrmxx    nnnnnnn    ppppppp
```

ID=ssssssss Is the name of the component.

VL=vrmxx Is the version level:

vr is:

D5 LANDP for DOS Version 5 programs

O5 LANDP for OS/2 Version 5 programs

N5 LANDP for Windows NT Version 5 programs

B5 Programs common to LANDP for DOS Version 5 and LANDP for OS/2 Version 5

S5 Programs common to LANDP for OS/2 Version 5 and LANDP for Windows NT Version 5

U5 Programs common to LANDP for DOS Version 5 and LANDP for Windows NT Version 5

A5 Programs common to LANDP for DOS Version 5, LANDP for OS/2 Version 5, and LANDP for Windows NT Version 5

AR LANDP for AIX Version 2.1 programs

For the FBSS products, PC/Integrator, and PC Integrator/2, *v* is the version and *r* is the release.

m is the modification level.

xx is a sequence number that corresponds to the number of modifications applied to the LANDP program.

nnnnnnn Is the last APAR or PTF applied to the program. (This information does not appear for LANDP for AIX.)

ppppppp Is the filename of the component.

Example output from a LANDP workstation in a workgroup:

```
LANDP Version Utility 07/01/97 at 15:23:03 (Built: Jun 11 1997)
```

```
Directory: .
```

```
ID=EHCADD    VL=A5000    EHCADD.EXE
ID=EHCAPPEN  VL=A5000    EHCAPPEN.EXE
ID=EHCBOXM   VL=05000    EHCBOXM.EXE
ID=EHCFREE   VL=05000    EHCFREE.EXE
ID=EHCINFO   VL=05000    EHCINFO.EXE
ID=EHCOS2    VL=05000    EHCOS2.DLL
ID=EHC PDT    VL=05000    EHC PDT.EXE
ID=EHC PDT DL VL=05000    EHC PDT.DLL
ID=EHC TRAC F VL=05000    EHC TRAC F.EXE
ID=EHC TRAC W VL=05000    EHC TRAC W.EXE
ID=EHC VDMGR VL=05000    EHC VDMGR.EXE
ID=EHC VDMVD VL=05000    EHC VDMVD.SYS
ID=LOADER    VL=05000    LOADER.EXE
ID=SPV       VL=05000    SPV.EXE
ID=VARPARAM  VL=A5001    HC12345  VARPARAM.EXE
```

```
End of file (rc = 0)
```

Identifying and getting LANDP fixes

To identify and get fixes, find the APAR number for your problem, and get the fix described by the APAR.

Finding the APAR number

You can find APAR numbers in RETAIN® (IBM's remote technical assistance information network) if you have access to it. If not, obtain the number from your IBM branch office.

To find LANDP information on RETAIN, you need the following:

Prefix: HBnnnnn for APARs
UBnnnnn for PTFs/CSDs
Library: Program Product 'A'

Getting the fixes from the Internet

To help you maintain your LANDP installation, the LANDP team documents the latest level of maintenance for every module in information text files. The complete maintenance package, including the text files, is available on the web at:

<ftp://ftp.software.ibm.com/ps/products/landp/fixes>

The fixes are compressed in ZIP format and converted to a self-extracting executable file. To obtain all the fixes, execute the IIxxxxx.EXE, where xxxxx varies for each version (10946 for Version 5).

Applying fixes

The APPLYFIX program is provided to maintain LANDP for DOS and OS/2. This program is used to unpack and apply the program fixes. The way that you apply a fix is governed by the type of fix you receive. The following list shows some examples of the fix types you may receive.

APAR Fixes Closed APARs in an applicable format.
File - HB54321.NX0
Supplied via VM direct from the Service Team
Unpacks to SNA##.EXE for example
Version Level format VL=NX001 HB54321
Application: APPLYFIX X:\PATHtoFILE

For further information about the APPLYFIX program, see the *LANDP Family Installation and Customization Guide*, Chapter 21.

LANDP maintenance strategy

Maintenance of the LANDP product is undertaken on a file by file basis so complete product updates are not normally required. Each file has an embedded level number (VL number) that is incremented by one with each shipped fix to that file. A fix to an individual file may include resolution to more than one problem and there may be dependencies on other files within the product. The VL number commences at 000 for all files at the date of release. Over time, the number of fixes applied to individual files varies dependent on the number of problems found in each file, so the VL numbers of files are not the same across the product.

Problem determination flowcharts

The flowcharts that follow cover LANDP problem determination in two main categories:

- Load time problems
- Run time problems

Use these flowcharts as a guide to problem determination, and to ensure that you provide IBM with the correct documentation. The flowcharts refer to the documentation list on pages 62 and 63. When a chart directs the reader to another chart, a page reference is at the foot of the page in bold type.

Load time problems

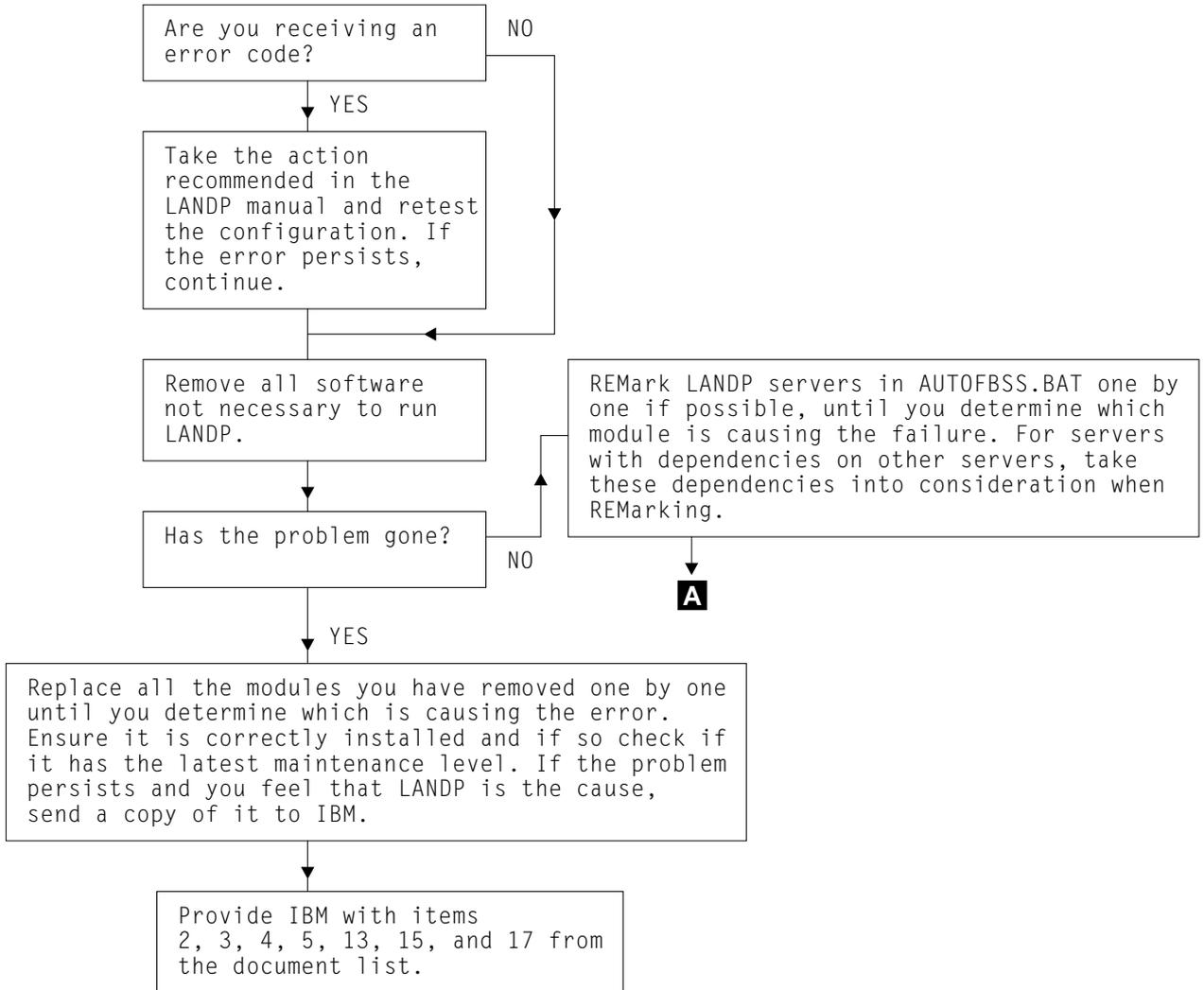
Before working through the flowcharts, ensure that you have met the following minimum requirements for loading:

1. All hardware components necessary for any DLCs (SDLC, X.25 co-processor, and so on) are correctly installed in your PWS and using suitable memory addresses and interrupt levels.
2. Sufficient system memory is available to load the LANDP modules.
3. Any paths detailed at customization time are available on your PWS (for example, System Manager profiles or RCMS log paths).
4. ECHO ON is set in your AUTOFBSS.BAT file, so that any error messages are displayed at load time.
5. If you are using Expanded memory, it is correctly installed and the hardware is working correctly.

Note: In LANDP for OS/2, it is possible to modify the AUTOFBSS.COMD and replace the DETACH statements with STARTs. This runs servers in different OS/2 sessions. Once AUTOFBSS has completed, inspect the various sessions for an error or return code.

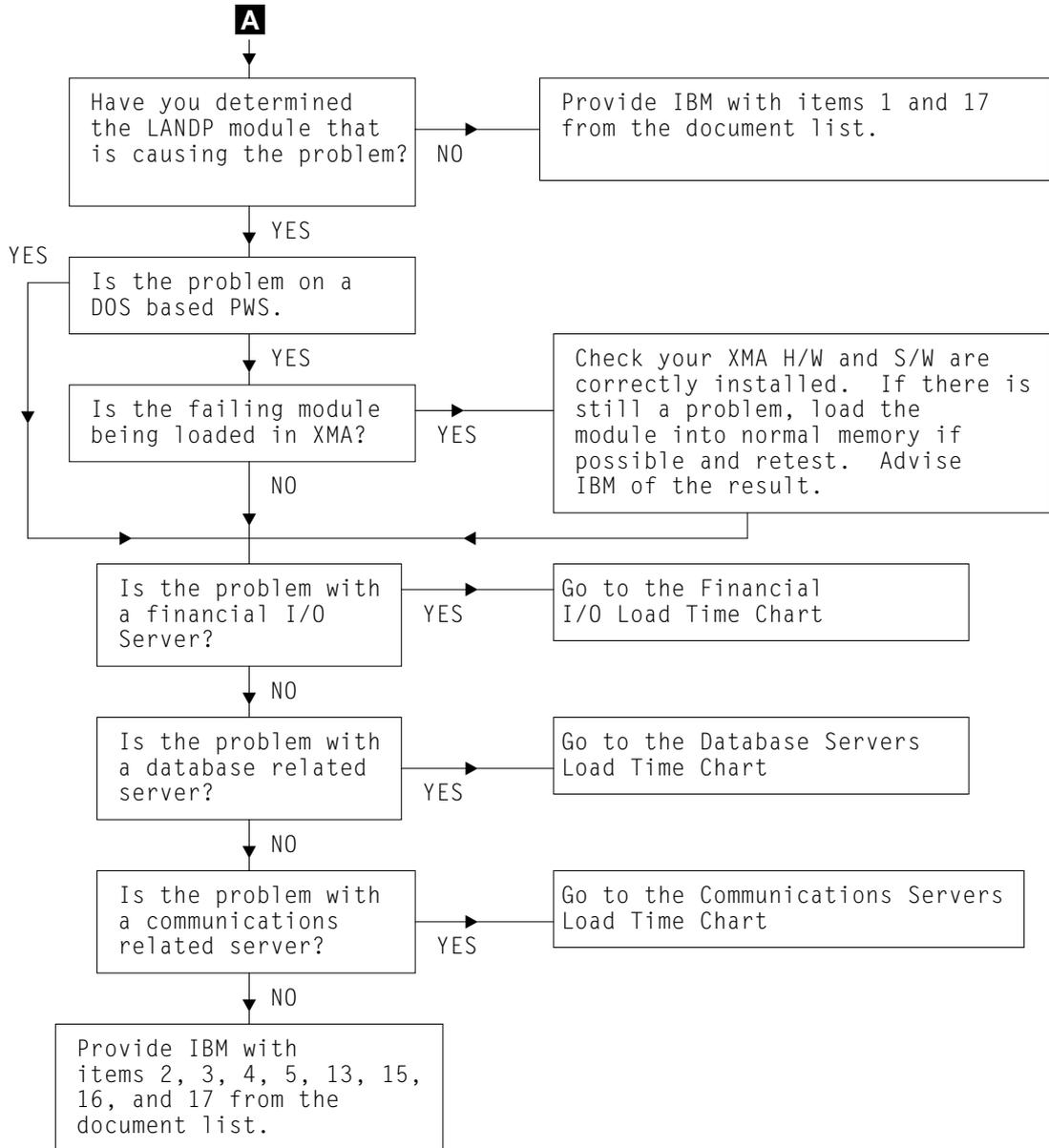
problem determination flowcharts

Start of load time problem flowcharts



The document list starts on page 62

Figure 11 (Part 1 of 2). Load time problem determination flowchart 1



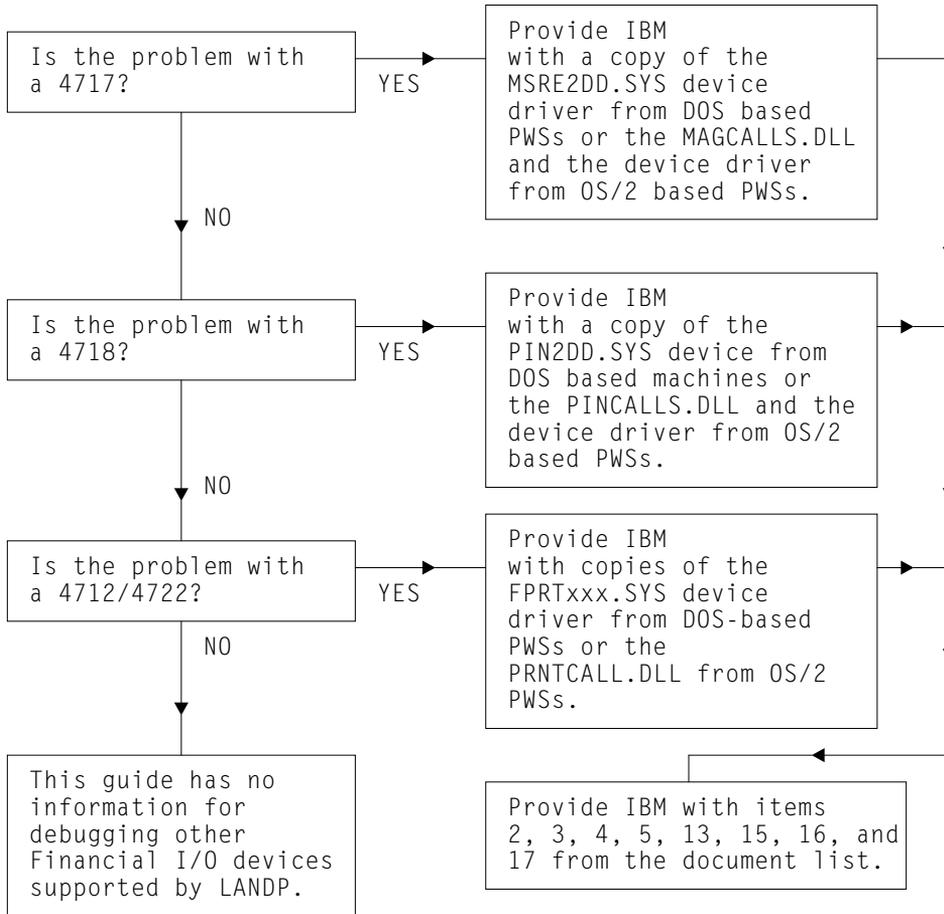
The document list starts on page 62
“Financial I/O servers problems at load time” on page 72
“Database server problems at load time” on page 73
“Communication server problems at load time” on page 74

Figure 11 (Part 2 of 2). Load time problem determination flowchart 1

problem determination flowcharts

Financial I/O servers problems at load time

When a large number of files is needed to analyse a problem it may be easier to provide IBM with a copy of the diskette produced at LANDP customization time. Include on this diskette any files, such as CONFIG.SYS, that are modified to run in your system.

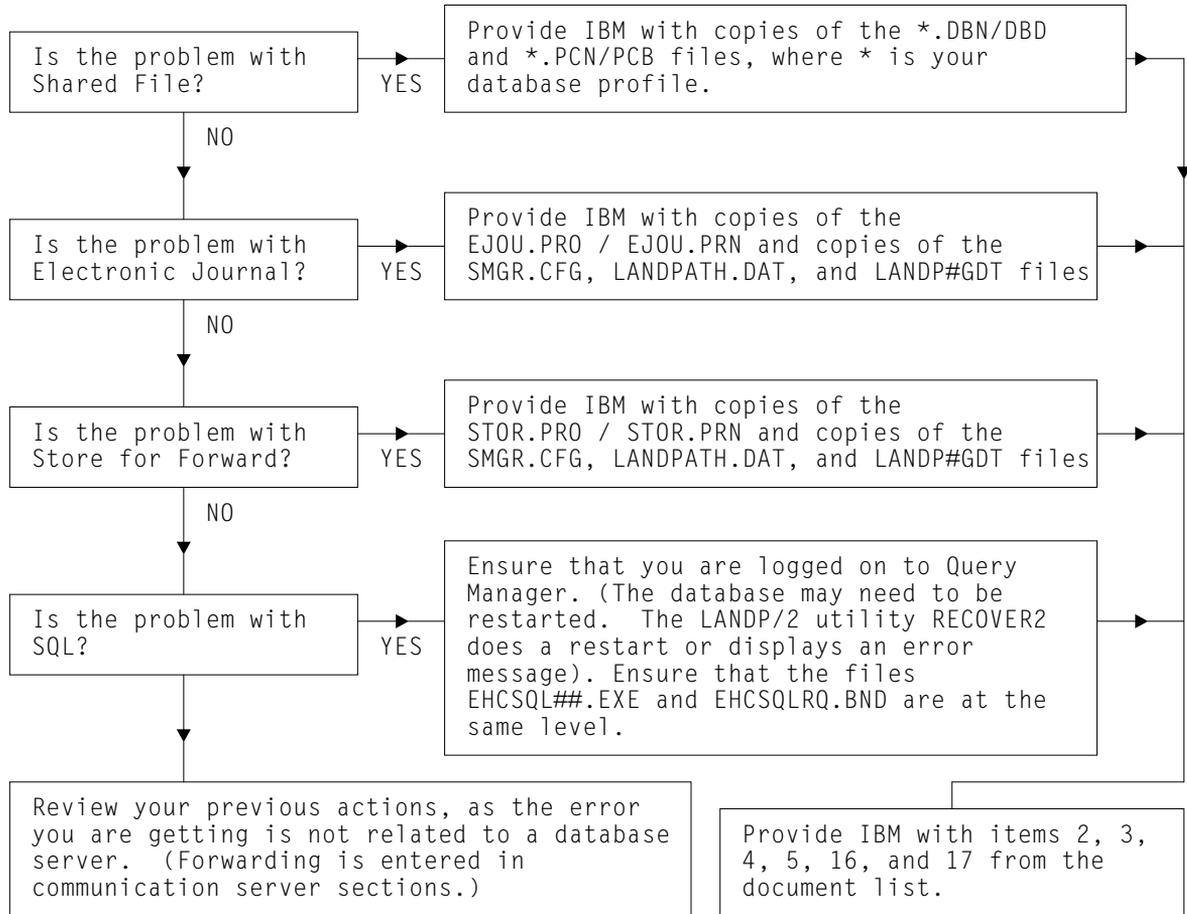


The document list starts on page 62

Figure 12. Financial I/O servers load time problem determination flowchart

Database server problems at load time

When a large number of files is needed to analyse a problem, it may be easier to provide IBM with a copy of the diskette produced at LANDP customization time. Include on this diskette any files, such as CONFIG.SYS, that are modified to meet your system needs.



The document list starts on page 62

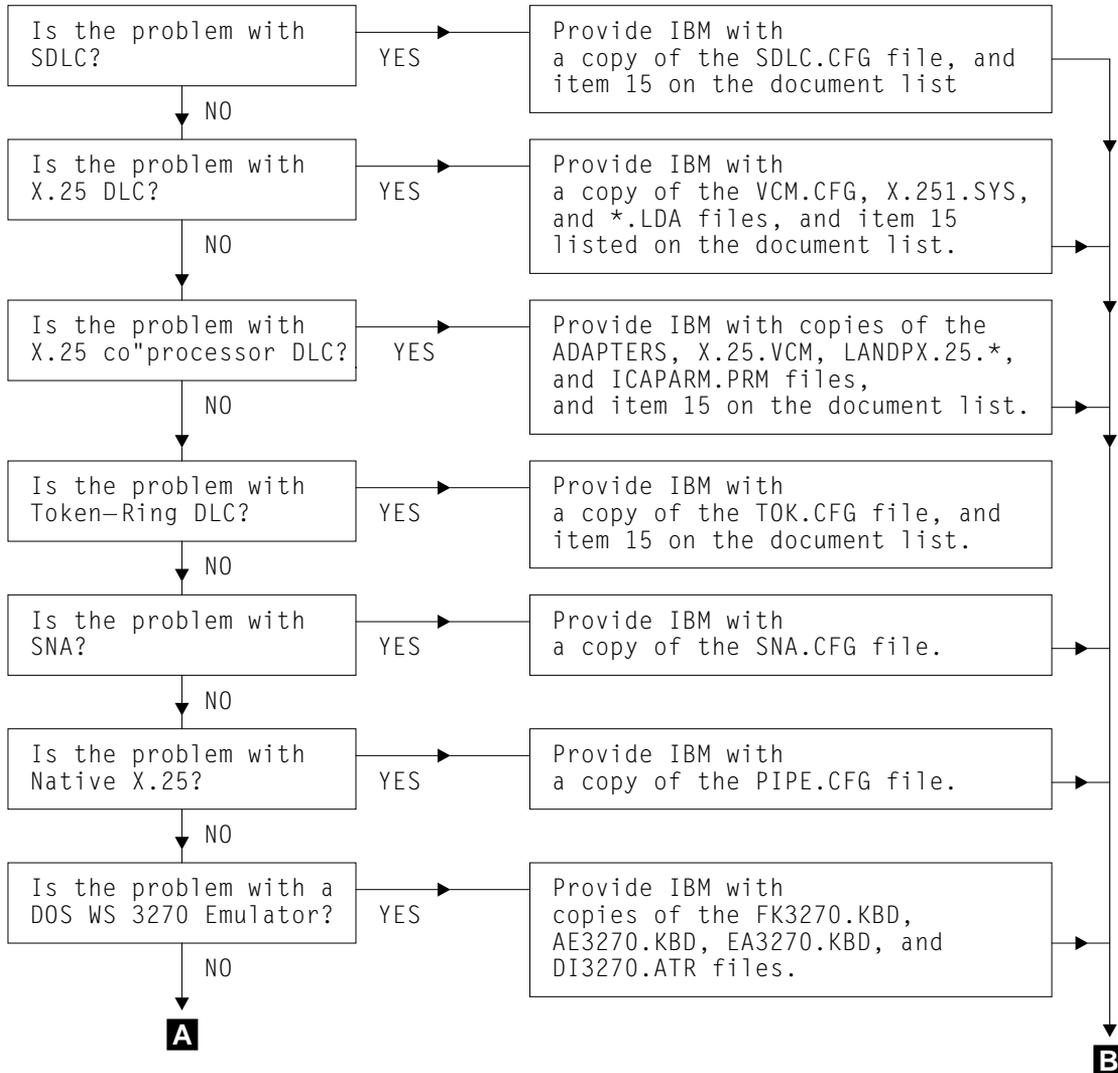
Figure 13. Database server diagnosis flowchart at load time

problem determination flowcharts

Communication server problems at load time

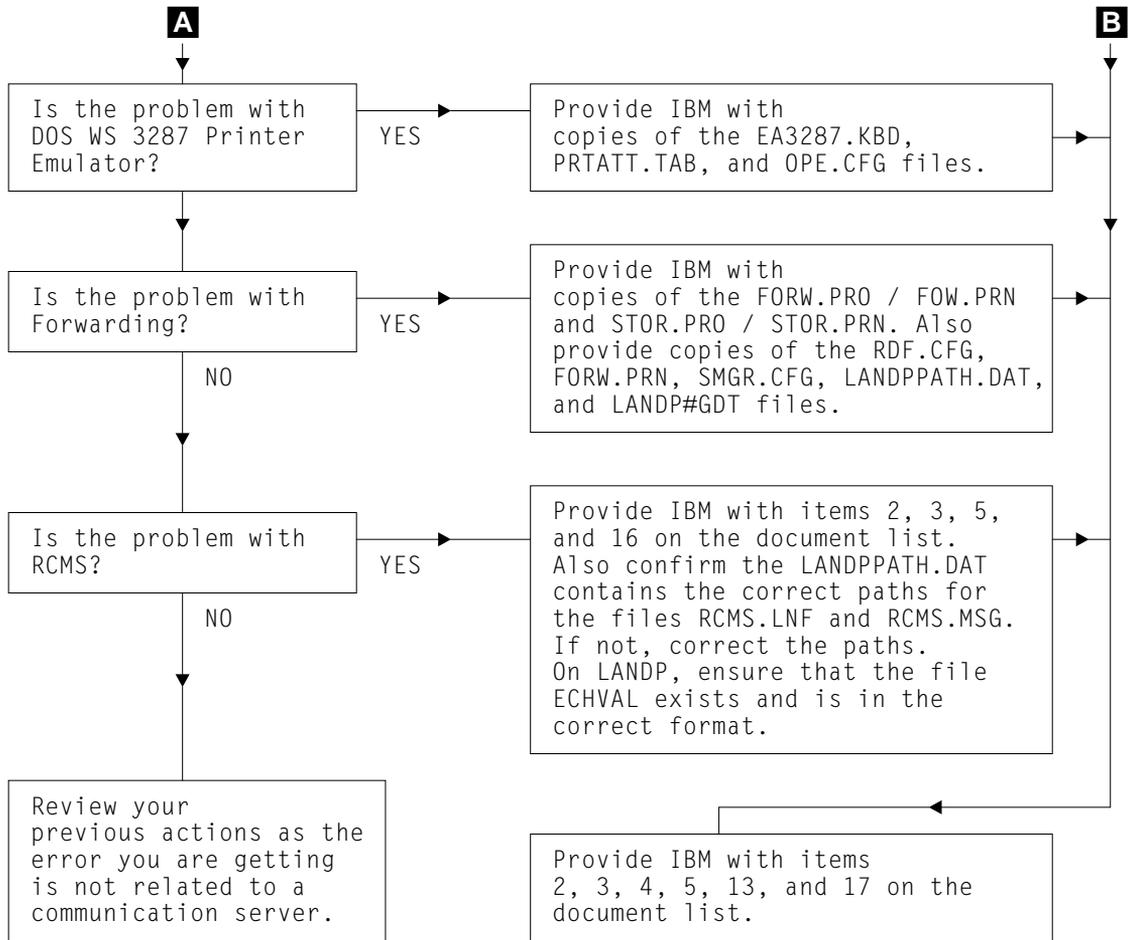
When a large number of files is needed to analyse a problem, it may be easier to provide IBM with a copy of the diskette produced at LANDP customization time. Include on this diskette any files, such as CONFIG.SYS, that are modified to meet your system needs.

Note: DLC support in OS/2 is provided by OS/2 Communications Manager.



The document list starts on page 62

Figure 14 (Part 1 of 2). Communication server diagnosis flowchart at load time



The document list starts on page 62

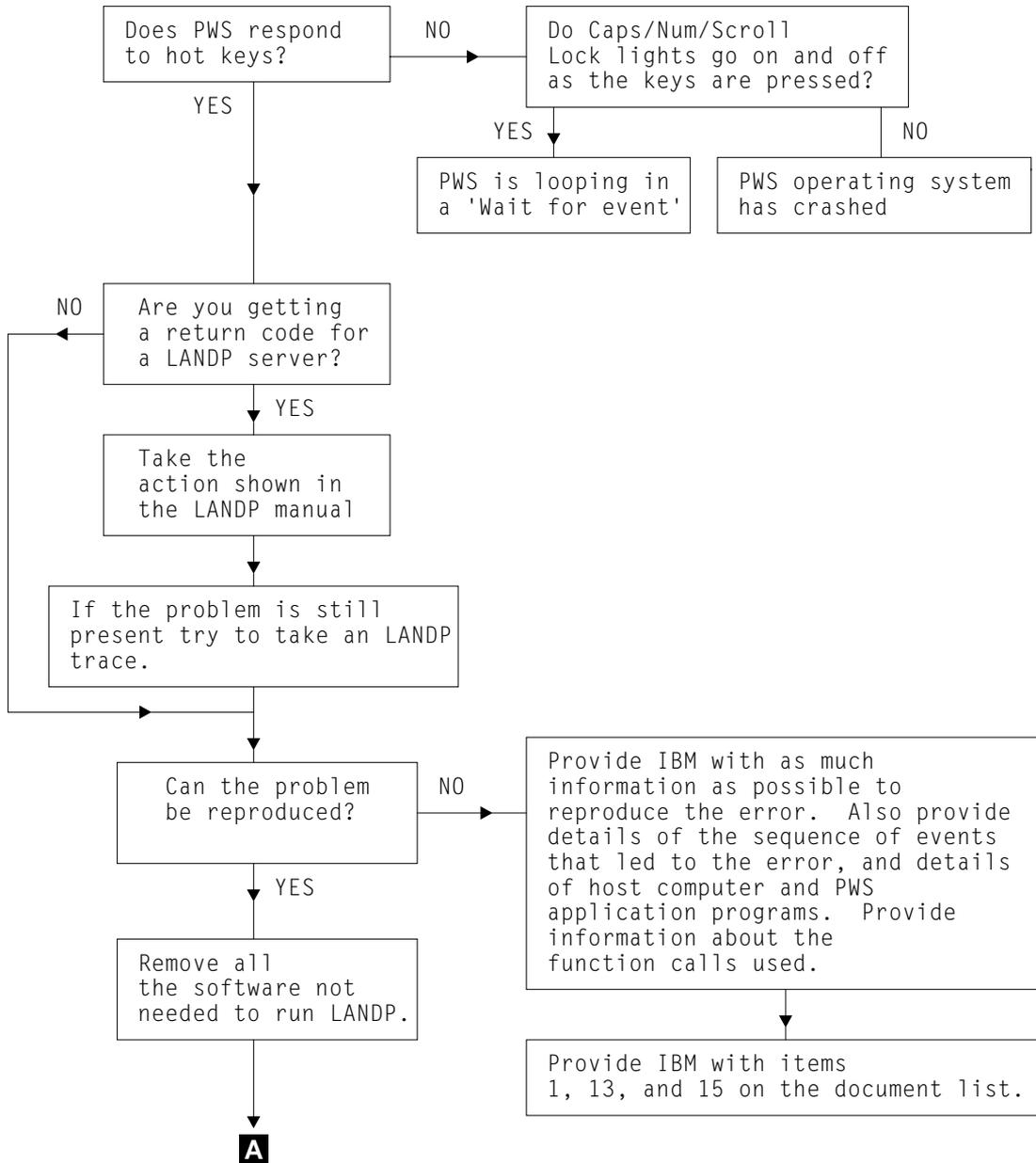
Figure 14 (Part 2 of 2). Communication server diagnosis flowchart at load time

Run time problems

When a large number of files is needed to analyse a problem, it may be easier to provide IBM with a copy of the diskette produced at LANDP customization time. Include on this diskette any files, such as CONFIG.SYS, that are modified to meet your system needs. Copy the traces to a separate directory.

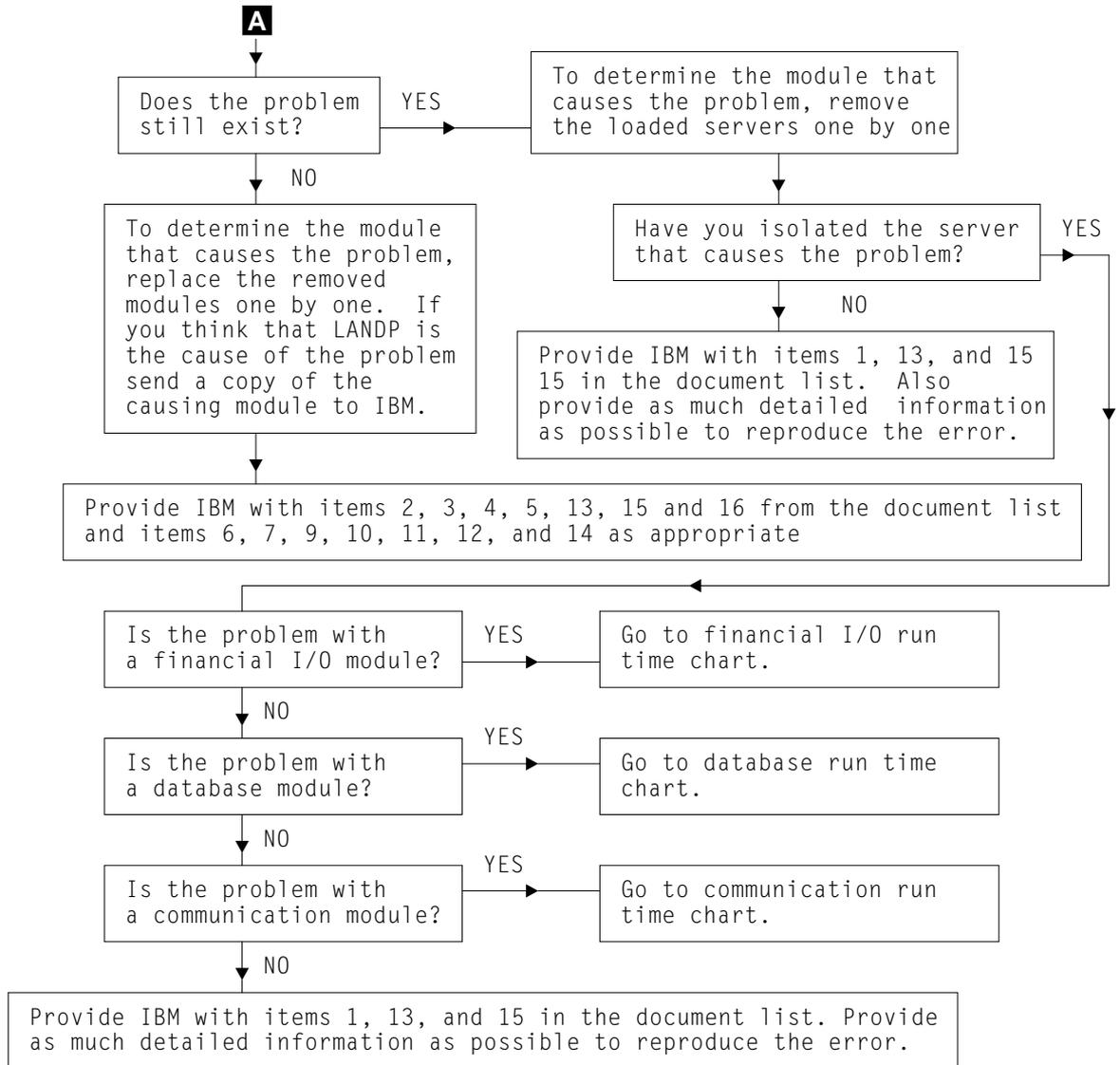
problem determination flowcharts

Start of run time problem flowcharts



The document list starts on page 62

Figure 15 (Part 1 of 2). Run time diagnosis flowchart



The document list starts on page 62
"Financial I/O device problems at run time" on page 78
"Database server problems at run time" on page 79
"Communication server problems at run time" on page 80

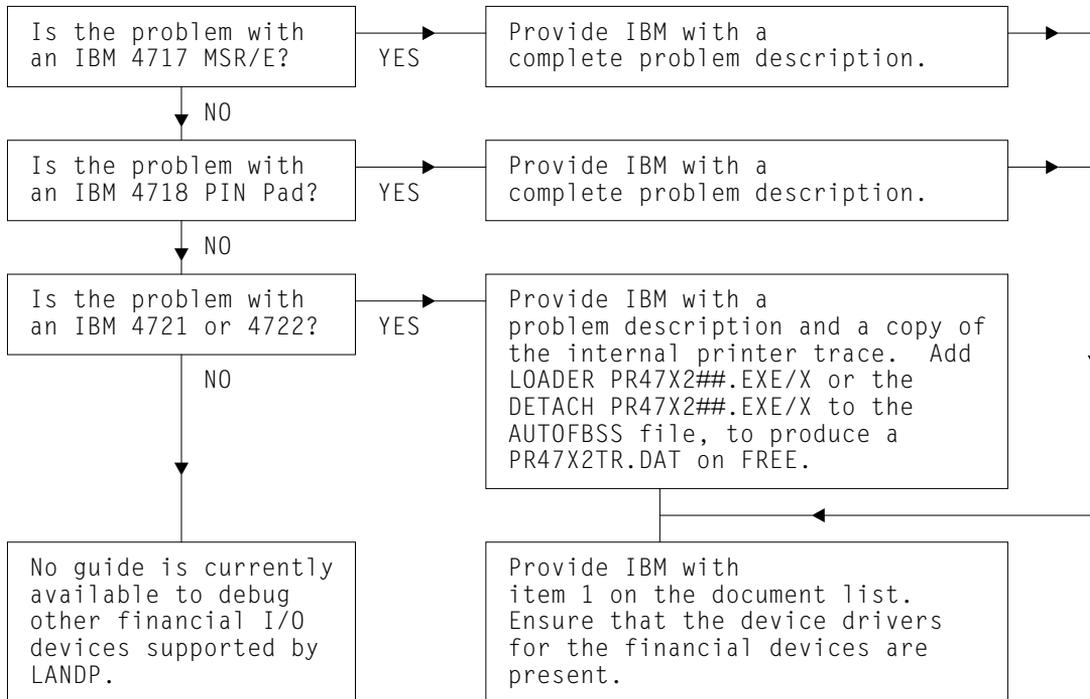
Figure 15 (Part 2 of 2). Run time diagnosis flowchart

Financial I/O device problems at run time

Ensure you have the latest version of the financial I/O device drivers, and the appropriate LANDP servers. If LANDP is reporting a hardware error, check all the hardware including personal computer systems, financial I/O devices, and cabling.

The most common errors are listed below:

- Invalid entries in the CONFIG.SYS file
- Incorrect format definitions
- Incorrect page definitions for documents, journals, and cutforms
- Incorrect customization of device drivers
- Incorrect switch settings
- Interaction with other non-standard device drivers



The document list starts on page 62

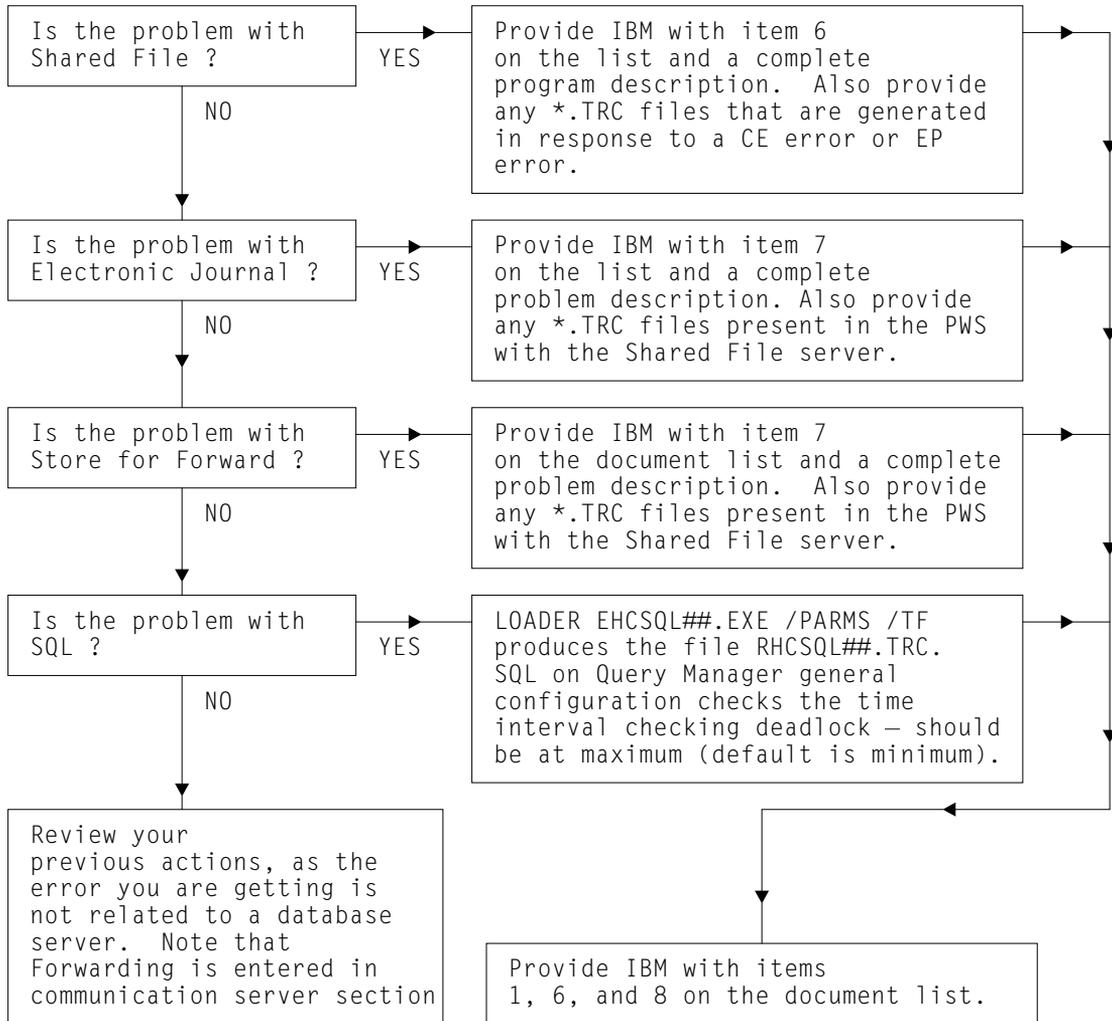
Figure 16. Financial I/O device diagnosis flowchart at run time

Database server problems at run time

Ensure you have the appropriate LANDP servers. The most common errors:

- Not enough file handles.
- Not enough Shared File sessions.

Note: The *.TRC files are created in response to critical (CE) errors or primary I/O (EP) errors. The name of the files have the format DDHHMMSS.TRC, where DD is the day, HH is the hours, MM is the minutes, and SS is the seconds.



The document list starts on page 62

Figure 17. Database server diagnosis flowchart at run time

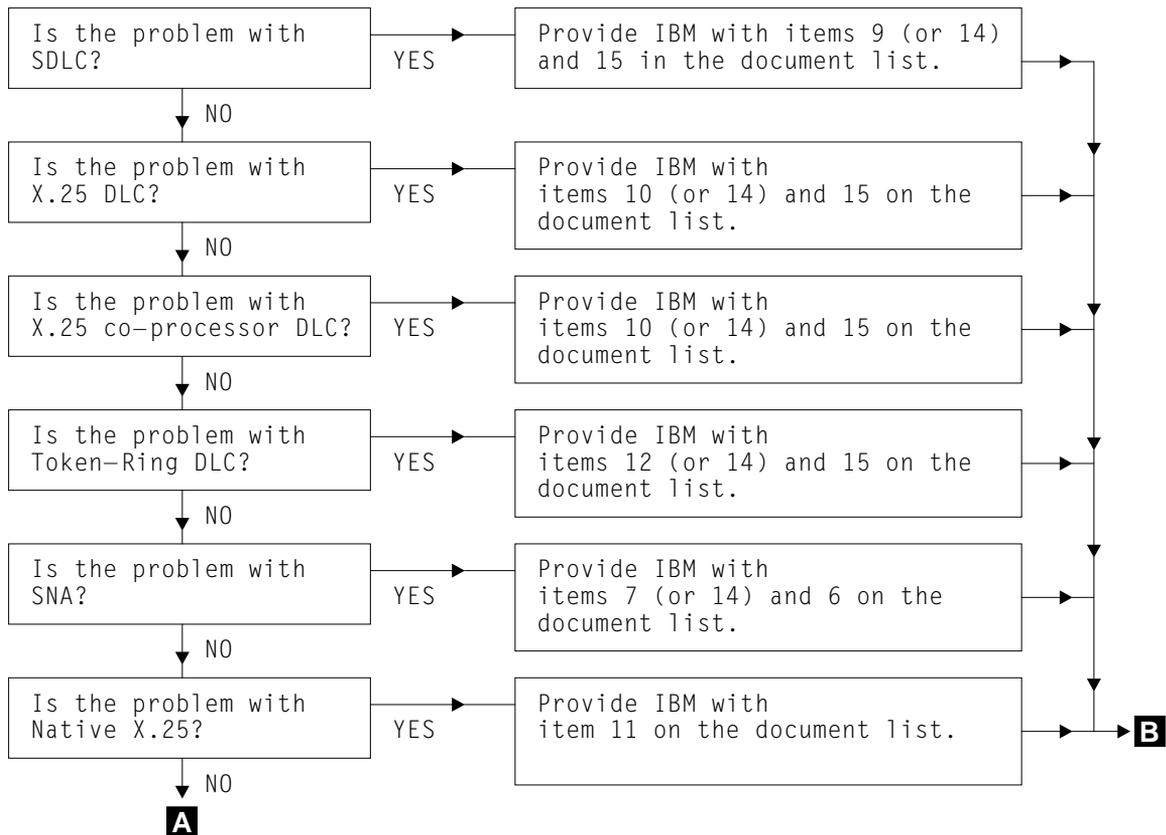
problem determination flowcharts

Communication server problems at run time

Ensure you have the latest version of the DLC device drivers, and the appropriate LANDP servers. If LANDP is reporting a hardware error, check all the hardware including personal computer systems, personal computer system cards, and cabling. The most common errors are listed below:

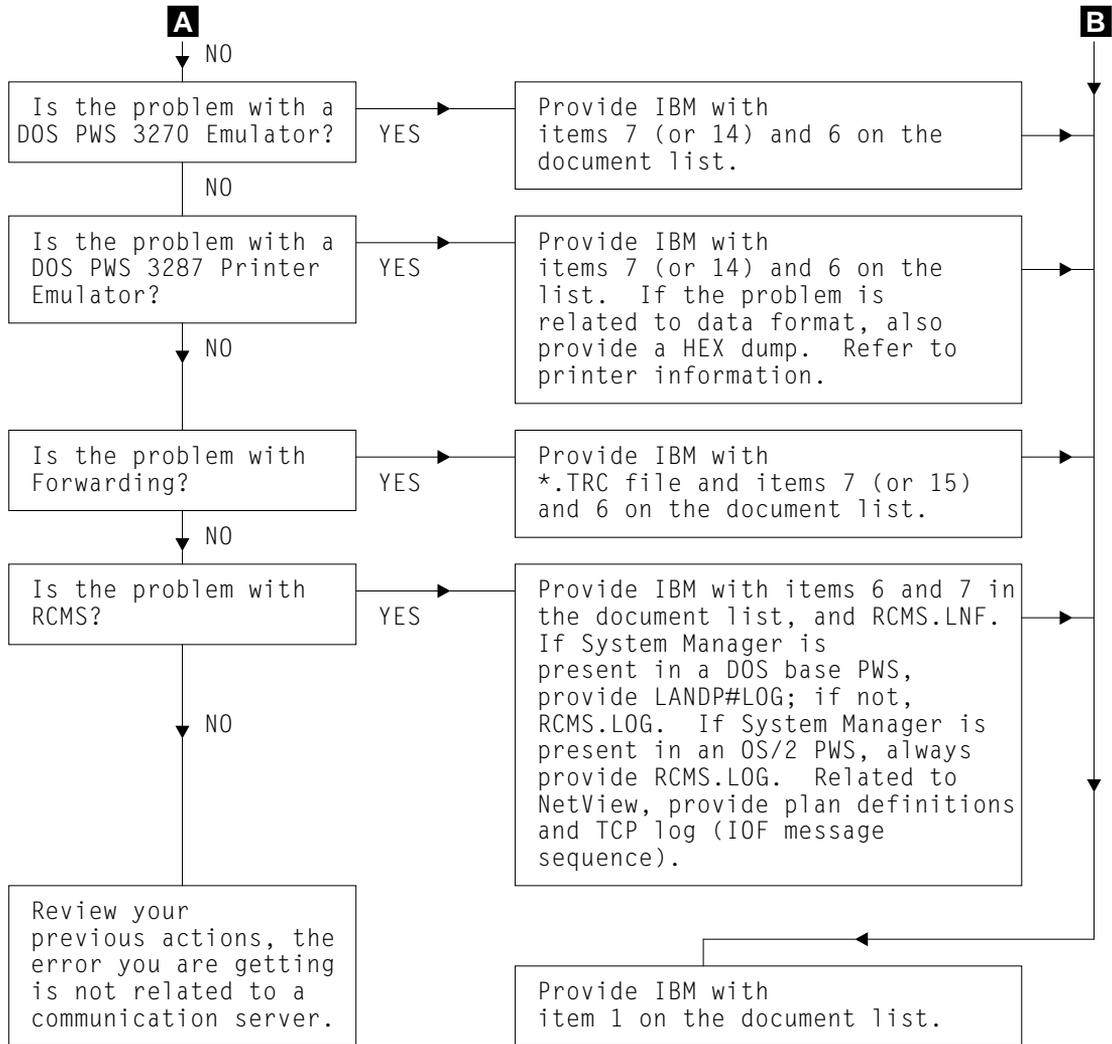
- Non-valid entries in the CONFIG.SYS file
- Not enough SNA buffers
- Incorrect customization entries for LOCADDR

Note: When working with LANDP/2, the DLCs are supported by OS/2 EE Communications Manager.



The document list starts on page 62

Figure 18 (Part 1 of 2). Communication server diagnosis flowchart at run time



The document list starts on page 62

Figure 18 (Part 2 of 2). Communication server diagnosis flowchart at run time

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Chapter 7. Loading return codes

While you load LANDP family components, programs, or servers, the LOADER and LOADERE programs display return codes. This chapter lists the loading return codes as hexadecimal values, with decimal values in parentheses, like this: X'40' (64).

LANDP for AIX components do not display loading return codes. Instead, they send loading information in text format to the AIX system log file. Also, on LANDP for AIX, the shared-file server (shfile) is an exception. It can produce loading return codes, but the return code is normally hidden because the server is started as a background task (with the '&' parameter). If it fails to start, run the shfile command separately without the '&' parameter to see the return code.

The LOADER and LOADERE programs display loading return codes in one of the following formats:

DOS RC = *xx*, where the value *xx* is the return code. For more information, refer to the *DOS Technical Reference* book.

OS/2 RC(OS/2)=*xx* where the value *xx* is the OS/2 error code or RC = *xx*, where the value *xx* is the LANDP error code.

Windows NT In a message, such as:

EHC0586: Missing parameter or syntax error (RC = 0x50)

where RC = 0x50 is a LANDP return code.

Note: During the loading process, an interrupt conflict between LAN and X.25 adapters can cause system problems. For information about hardware compatibility, see the *LANDP Introduction and Planning* book.

Notes:

1. DOS loading return codes range from X'01' to X'39' (1 to 57).
2. User server loading return codes range from X'E0' to X'EF' (224 to 239).
3. Page 88 gives the solution to a possible problem when loading EHCWINNT.DLL in LANDP for Windows NT.

Notes for LANDP for OS/2 programs:

1. The EHCLIP, LAN, and LANDP for OS/2 programs also send error information to the LANDP for OS/2 trace tools. See "EHCLIP program" on page 179 for a list of codes.
2. If the EHCTRAW trace server is loaded before the EHCLIP and LAN programs, the log file has more details about some loading and NetBIOS errors.
3. The LAN programs can also return L6 and L9 errors. These errors are documented in "LAN and router" on page 194.

loading EHCWINNT.DLL in LANDP for NT

Loading EHCWINNT.DLL in LANDP for NT

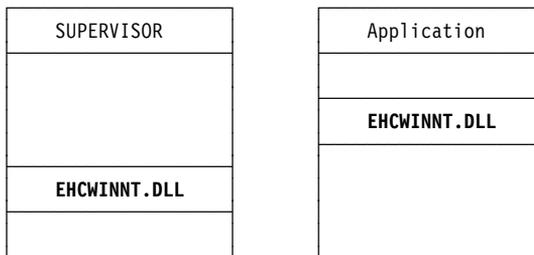
EHCWINNT.DLL is the dynamic link library that contains the LANDP interface routines (RMTREQ, GETRPLY, SRVINIT, GETREQ, RMTRPLY, and RMTAREQ). EHCWINNT.DLL is loaded in the supervisor and every other LANDP process.

LANDP for NT expects EHCWINNT.DLL to be mapped to the same virtual address in each process that uses it. If the supervisor attempts to load EHCWINNT.DLL at an address that another process has already used, the load fails. To prevent this problem arising:

1. Use the following registry entry, where value is the virtual address at which EHCWINNT.DLL is to be loaded:
HKEY_LOCAL_MACHINE\SOFTWARE\IBM\LANDP\5.0 value= SharedMemAddress (DWORD)
2. Ensure that the supervisor is always started first.

Figure 19 illustrates the problem and the solution.

Possible situation without HKEY_LOCAL_MACHINE\SOFTWARE\IBM\LANDP\5.0 registry entry. EHCWINNT.DLL loaded at different virtual addresses in supervisor and application. This causes a failure.



Situation with HKEY_LOCAL_MACHINE\SOFTWARE\IBM\LANDP\5.0 registry entry. EHCWINNT.DLL always loaded at same virtual address in supervisor and all applications, provided supervisor is started first

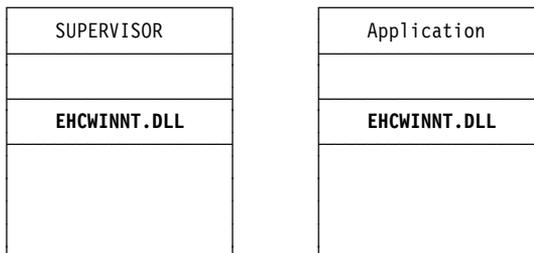


Figure 19. EHCWINNT loading problem and solution

Loading return codes

X'01' (1)

DOS VARDAT program (subcode)

Explanation: The configuration file of DCADLC (DCA.CFG) does not exist.

Action: Add the file if it is missing or remove the entry from the VARDAT.CFG file.

DOS VARPARM program (subcode)

Explanation: A syntax error was detected in the VARPARM.SPC file.

Action: Correct the LAN.CFG record. Note that the identifier of the error location is also displayed.

DOS, OS/2, and Windows NT NEWCFG program (subcode)

Explanation: Both files xxxxxxxx.PCN and xxxxxxxx.PCB exist.

Action: Delete either the xxxxxxxx.PCN file or the xxxxxxxx.PCB. file.

Windows NT MVDM Relay (EHCVDSPV)

Explanation: EHCVDVXD.DLL not found or damaged.

Action: Ensure that the current directory contains the LANDP run and that this workstation is customized to run the MVDM.

X'02' (2)

DOS VARDAT program (subcode)

Explanation: The configuration file of SDLC (SDLC.CFG) does not exist.

Action: Add the file if it is missing or remove the entry from the VARDAT.CFG file.

DOS VARPARM program (subcode)

Explanation: An FBSSPATH.DAT file error was detected.

Action: Make sure the file and path exist.

DOS, OS/2, and Windows NT NEWCFG program (subcode)

Explanation: Both files xxxxxxxx.DBN and xxxxxxxx.DBD exist.

Action: Delete either the xxxxxxxx.DBN file or the xxxxxxxx.DBD file.

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Internal error.

Action: Contact an IBM support representative.

X'03' (3)

DOS VARDAT program (subcode)

Explanation: The configuration file of token-ring DLC (TOK.CFG) does not exist.

Action: Add the file if it is missing or remove the entry from the VARDAT.CFG file.

DOS VARPARM program (subcode)

Explanation: An FBSS#GDT error was detected.

Action: Make sure the file and path exist.

DOS, OS/2, and Windows NT NEWCFG program (subcode)

Explanation: Both files EJOU.PRN and EJOU.PRO exist.

Action: Delete either the EJOU.PRN file or the EJOU.PRO file.

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Internal error.

Action: Contact an IBM support representative.

X'04' (4)

DOS VARDAT program (subcode)

Explanation: The configuration file of X25DLC (X25.CF1) does not exist.

Action: Add the file if it is missing or remove the entry from the VARDAT.CFG file.

DOS VARPARM program (subcode)

Explanation: A LAN.CFG or GWY.CFG error was detected.

Action: Make sure the LAN.CFG file exists, and if the workstation is a gateway, also make sure the GWY.CFG file exists.

DOS, OS/2, and Windows NT NEWCFG program (subcode)

Explanation: Both files STOR.PRN and STOR.PRO exist.

Action: Delete either the STOR.PRN file or the STOR.PRO file.

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Not enough memory.

X'05' (5) • X'18' (24)

Action: Check the available memory.

X'05' (5)

DOS VARDAT program (subcode)

Explanation: The configuration file of X.25 circuits (VCM.CFG) does not exist.

Action: Add the file if it is missing or remove the entry from the VARDAT.CFG file.

DOS VARPARM program (subcode)

Explanation: A DEVSP47.TAB error was detected.

Action: Make sure the file and path exist.

DOS, OS/2, and Windows NT NEWCFG program (subcode)

Explanation: Both files FORW.PRN and FORW.PRO exist.

Action: Delete either the FORW.PRN file or the FORW.PRO file.

X'06' (6)

DOS VARDAT program (subcode)

Explanation: The auxiliary file VCM.WRK cannot be opened or has a hardware error.

Action: Try the operation again. If the problem persists, check the hardware.

DOS VARPARM program (subcode)

Explanation: VARPARM.SPC contains a 'suffix' keyword for a workstation that you had customized as not having a 'suffix'.

Action: Remove the 'suffix' keyword from the VARPARM.SPC file.

X'08' (8)

DOS General loading (subcode)

Explanation: There is not enough storage to load this server. More storage is required to load the server on this personal computer system.

Action: Free or add storage. See the *LANDP Introduction and Planning* book for information about storage requirements.

X'0A' (10)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Invalid command line.

Action: Correct the command parameters and reissue the command.

X'0B' (11)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: EHCVDSPV could not be unloaded. Either it is not loaded or it is not safe to unload it at this time.

Action: None.

X'14' (20)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: EHCVDMGR server is not running.

Action: Ensure that the MVDM Relay is customized for this workstation and that EHCVDMGR is loaded.

X'15' (21)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Internal error.

Action: Contact an IBM support representative.

X'16' (22)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Internal error.

Action: Contact an IBM support representative.

X'17' (23)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Internal error.

Action: Contact an IBM support representative.

X'18' (24)

Windows NT MVDM Relay (EHCVDSPV)

Explanation: Internal error.

Action: Contact an IBM support representative.

X'19' (25)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Internal error.**Action:** Contact an IBM support representative.

X'1A' (26)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Too many VDM sessions.**Action:** Close any unused VDM sessions and try again.

X'1B' (27)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Internal error.**Action:** Contact an IBM support representative.

X'1C' (28)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Internal error.**Action:** Contact an IBM support representative.

X'1D' (29)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Internal error.**Action:** Contact an IBM support representative.

X'1E' (30)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Internal error.**Action:** Contact an IBM support representative.

X'1F' (31)**Windows NT MVDM Relay** (*EHCVDSPV*)**Explanation:** Internal error.**Action:** Contact an IBM support representative.

X'21' (33)**DOS VARDAT program** (subcode)**Explanation:** There is an unexpected record length in the VARDAT.CFG file.**Action:** Correct the entry in the VARDAT.CFG file.

X'22' (34)**DOS VARDAT program** (subcode)**Explanation:** The number of buffers in the DCADLC record is not correct. The number of buffers must be in decimal format and from 10 to 100.**Action:** Correct the entry in the VARDAT.CFG file.

X'23' (35)**DOS VARDAT program** (subcode)**Explanation:** There are several DCADLC records in the VARDAT.CFG file. The VARDAT.CFG file can contain only one DCADLC record.**Action:** Remove the extra entries in the file.

X'24' (36)**DOS VARDAT program** (subcode)**Explanation:** The number of buffers in the SDLC record is not correct. The number of buffers must be in decimal format and from 8 to 80.**Action:** Correct the entry in the VARDAT.CFG file.

X'25' (37)**DOS VARDAT program** (subcode)**Explanation:** The physical unit (PU) address in the SDLC record is not in hexadecimal format.**Action:** Correct the entry in the VARDAT.CFG file.

X'26' (38)**DOS VARDAT program** (subcode)**Explanation:** The identification number in the SDLC record is not in hexadecimal format.**Action:** Correct the entry in the VARDAT.CFG file.

X'27' (39) • X'38' (56)

X'27' (39)

DOS VARDAT program (subcode)

Explanation: There are several SDLC records in the VARDAT.CFG file. The VARDAT.CFG file can contain only one SDLC record.

Action: Remove the extra entries in the file.

X'28' (40)

DOS VARDAT program (subcode)

Explanation: The number of buffers in the TRDLC record is not correct. The number of buffers must be in decimal format and from 16 to 216.

Action: Correct the entry in the VARDAT.CFG file.

X'29' (41)

DOS VARDAT program (subcode)

Explanation: The workstation local administration address in the TRDLC record is not in decimal format.

Action: Correct the entry in the VARDAT.CFG file.

X'30' (48)

DOS VARDAT program (subcode)

Explanation: The host local administration address in the TRDLC record is not in decimal format.

Action: Correct the entry in the VARDAT.CFG file.

X'31' (49)

DOS VARDAT program (subcode)

Explanation: The identification number in the TRDLC record is not in hexadecimal format.

Action: Correct the entry in VARDAT.CFG.

X'32' (50)

DOS VARDAT program (subcode)

Explanation: The host and workstation local administration address fields are identical in the TRDLC record.

Action: Change the address in one of the fields in the VARDAT.CFG file.

X'33' (51)

DOS VARDAT program (subcode)

Explanation: The host or workstation local administration address fields have the first byte set to greater than 7 in the TRDLC record. The first byte must be less than 8.

Action: Correct the entry in the VARDAT.CFG file.

X'34' (52)

DOS VARDAT program (subcode)

Explanation: The host or workstation local administration address fields are in conflict with the existing fields in the configuration file.

Action: Correct the entry in the VARDAT.CFG file.

X'35' (53)

DOS VARDAT program (subcode)

Explanation: There are several TRDLC records in the VARDAT.CFG file. VARDAT.CFG can contain only one TRDLC record.

Action: Remove the extra entries in the file.

X'36' (54)

DOS VARDAT program (subcode)

Explanation: The number of buffers in the X25DLCNA record is not correct. The number of buffers must be in decimal format and from 20 to 2000.

Action: Correct the entry in the VARDAT.CFG file.

X'37' (55)

DOS VARDAT program (subcode)

Explanation: The length for the X.25 network user address in the X25DLCNA record is not correct. The length must be 5 to 15.

Action: Correct the entry in the VARDAT.CFG file.

X'38' (56)

DOS VARDAT program (subcode)

Explanation: The X.25 network user address in the X25DLCNA record is not in decimal format.

Action: Correct the entry in the VARDAT.CFG file.

X'39' (57)

DOS VARDAT program (subcode)

Explanation: There are several X25DLCNA records in the VARDAT.CFG file. VARDAT.CFG can contain only one X25DLCNA record.

Action: Remove the extra entries in the file.

X'40' (64)

DOS General loading

Explanation: The started DOS version does not correspond to the expected version.

Action: Install DOS at the correct level and restart the system.

DOS VARDAT program (subcode)

Explanation: The connection type in the X25DLCSA record is not B, I, O, or P.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: On OS/2, SPV.EXE and EHCOS2.DLL do not match. On Windows NT, SPV.EXE does not match EHCWINNT.DLL.

Action: Try the following:

- On OS/2 and Windows NT: Run the VERSION.EXE program, and check the VL values. See "VERSION utility" on page 65 for information about the program.
 - On OS/2: Check the LIBPATH statement to see which EHCOS2.DLL file is being accessed.
-

X'41' (65)

DOS General loading

Explanation: The number of permitted servers (31) has been exceeded.

Action: Rerun configuration and redistribute the servers on the network.

DOS VARDAT program (subcode)

Explanation: The number of permanent circuits in the X25DLCSA record is not correct.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: The number of permitted servers (100) has been exceeded.

Action: Rerun configuration and redistribute the servers on the network.

X'42' (66)

DOS General loading

Explanation: A server with this name is already loaded.

Action: Check the AUTOFBSS.BAT file.

DOS VARDAT program (subcode)

Explanation: The number of permanent circuits in the X25DLCSA record is not present.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: A server with this name is already loaded or another loader session is running simultaneously.

Action: Check the AUTOFBSS.CMD file.

X'43' (67)

DOS General loading

Explanation: Interrupt 64 is missing in the loader phase of the server.

Action: Review the code of the named server and replace the updated module.

DOS VARDAT program (subcode)

Explanation: The filler in the X25DLCSA record does not contain blanks.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: Reserved.

Action: None.

Windows NT General loading

Explanation: User not authorized.

Action: Log on as an administrator and try again.

X'44' (68)

DOS General loading

Explanation: There is not enough storage to load this server. More storage is required to load the server on this personal computer system.

Action: Free or add storage. See the *LANDP Introduction and Planning* book for information about storage requirements.

X'45' (69) • X'48' (72)

DOS VARDAT program (subcode)

Explanation: An old subscriber address length in the X25DLCSA record is not correct. The length must be in decimal format and have a value between 0 and 15.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: There is not enough memory.

Action: Check the available memory.

X'45' (69)

DOS General loading

Explanation: A loader parameter has been specified that is not valid.

Action: Check the AUTOFBSS.BAT file.

DOS VARDAT program (subcode)

Explanation: An old subscriber address in the X25DLCSA record is not in decimal format.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: SPV is not loaded.

Action: SPV must be loaded before loading any server or application.

X'46' (70)

DOS General loading

Explanation: The following could be true:

- After the supervisor is loaded, other servers cannot be loaded.
- You are trying to load EHCWGMDI when Microsoft Windows 3.1 software or part of LANDP for DOS is already loaded, or EHCWVDMI is in the same VM as the LANDP kernel.
- You are trying to load EHCWVDMI when EHCWGMDI, Microsoft Windows 3.1, or EHCVM386 is not installed.
- You are trying to load the supervisor when EHCWGMDI is loaded, but EHCVM386 is not installed.

Action: Check the loading sequence. Install the modules correctly by following the steps specified in the *LANDP Installation and Customization* book.

DOS VARDAT program (subcode)

Explanation: A new subscriber address length in the X25DLCSA record is not correct. The length must be in decimal format and have a value between 0 and 15.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: SPV is already loaded and running.

Action: Unload SPV with EHCFREE.

X'47' (71)

DOS General loading

Explanation: The expanded memory manager (EMM) is not installed or the EMM version is not 4.0.

Action: Install the EMM device driver.

DOS VARDAT program (subcode)

Explanation: A new subscriber address in the X25DLCSA record is not in decimal format.

Action: Correct the entry in the VARDAT.CFG file.

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: The operating system returned an error to a system call.

Action: Check the error log for information about the system error.

X'48' (72)

DOS General loading

Explanation: The EMM detected a malfunction in the memory manager software. This condition does not occur when the EMM is operating correctly.

Action: Check the software.

DOS VARDAT program (subcode)

Explanation: An identification number in the X25DLCSA record is not in hexadecimal format.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading

Explanation: A time out occurred during server loading.

Action: Try the following:

- Check the error log file for a possible server loading error.
- Check the **T** parameter value in the server loading statement.

- Check the LAN time-out value.

X'49' (73)**DOS General loading**

Explanation: The EMM detected a malfunction in the memory manager hardware.

Action: Run diagnostic tests on the expanded memory manager to determine the source of the problem.

DOS VARDAT program (subcode)

Explanation: An old subscriber address in the X25DLCSA record is repeated for the same connection type.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 General loading

Explanation: Reserved for future use.

Action: None.

Windows NT General loading

Explanation: A server was registered as a service in a different directory.

Action: Either change the directory or remove the registration (by using the /R: option in the loader statement) and try again.

X'4A' (74)**DOS General loading**

Explanation: There is not enough expanded memory available.

Action: Install the EMM device driver without any parameters and verify the available pages and frames. If it is not possible to increase the number of pages or frames, this server must be loaded in conventional memory.

DOS Shared DOS directory

Explanation: The file SHRDIR.PRO is not correct.

Action: Erase the file and run SHRSHARE again.

X'4B' (75)**DOS General loading**

Explanation: This server is not allowed in expanded memory.

Action: Load the server using the LOADER program instead of the LOADERE program.

X'4C' (76)**DOS General loading**

Explanation: An attempt was made to load a server without using LOADER or LOADERE, as appropriate.

Action: Put the correct statement in the AUTOFBSS.BAT file.

X'4D' (77)**DOS General loading**

Explanation: The FREE program cannot be executed because the LANDP programs are not loaded correctly or the system authorization level required for loading the program is missing.

Action: Sign on with the appropriate system authorization level and rerun the FREE program. If the problem persists, the LANDP programs cannot be unloaded using the FREE program.

X'4E' (78)**DOS General loading**

Explanation: The following could be true:

- After the supervisor is loaded, other servers cannot be loaded.
- You are trying to load EHCWGMDI when Microsoft Windows 3.1 software or part of LANDP for DOS is already loaded, or EHCWVDMI is in the same VM as the LANDP kernel.
- You are trying to load EHCWVDMI when EHCWGMDI, Microsoft Windows 3.1, or EHCVM386 is not installed.
- You are trying to load the supervisor when EHCWGMDI is loaded, but EHCVM386 is not installed.

Action: Check the loading sequence. Install the modules correctly by following the steps specified in the *LANDP Installation and Customization* book.

X'4F' (79)**DOS General loading**

Explanation: The command line in the DDT.EXE, FREE.EXE, EHCWGMDI.EXE, EHCWVDMI.EXE, EHCCONN.EXE, or EHCREL.EXE module is not valid.

Action: Correct the command line syntax.

OS/2 MVDM relay

X'50' (80) • X'53' (83)

Explanation: EHCVDMVD.SYS is not correctly installed or it is missing.

Action: Check the DEVICE=PATH\EHCVDMVD.SYS statement in the CONFIG.SYS file.

X'50' (80)

DOS VARDAT program (subcode)

Explanation: The record identifier in the VARDAT.CFG file is not correct.

Action: Correct the entry in the VARDAT.CFG file.

OS/2 and Windows NT General loading MVDM relay

Explanation: The command line is not valid.

Action: Check the AUTOFBSS.COMD file.

DOS, OS/2, and Windows NT EHCLIP, EHCTCP, PPC, LAN, loader, and supervisor

Explanation: Load parameters are not valid. Values are out of range.

Action: Check the load command line parameters in the AUTOFBSS.BAT or AUTOFBSS.COMD files.

OS/2 and Windows NT EHCFREE

Explanation: No server specified.

Action: Specify a server as a parameter (SPV to free all servers).

X'51' (81)

DOS VARDAT program (subcode)

Explanation: Once updated, there are several X.25 circuits with the same connection type and subscriber address.

Action: Correct the entry in the VARDAT.CFG file.

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: A local workstation identifier is not valid. The valid characters are the uppercase letters of the alphabet and the numbers 0 through 9. Blank is valid only as the second position in the workstation identifier.

Action: Check the workstation identifier in all AUTOFBSS.BAT or AUTOFBSS.COMD load command lines where it is specified.

X'52' (82)

DOS VARDAT program (subcode)

Explanation: Once updated, there are several X.25 circuits with the same identification number and subscriber address.

Action: Correct the entry in the VARDAT.CFG file.

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: The following could be true:

- The workstation identifier is unknown: the identifier was not found in the LAN.CFG file.
- EHCLIP: The INET address of a remote workstation was not resolved.

Action: Try the following:

- Check the workstation identifiers in AUTOFBSS.BAT or AUTOFBSS.COMD and the LAN.CFG files.
- EHCLIP: Check the remote workstation identifier definitions to TCP/IP (**hosts** file and network **names** server, if used), and whether they are accessible.

X'53' (83)

DOS VARDAT program (subcode)

Explanation: The X.25 circuit is not found in the present configuration.

Action: Correct the entry in the VARDAT.CFG file.

DOS and OS/2 AS/400 router

Explanation: An error occurred while reading the AS/400 router configuration record from the disk. The AS/400® router cannot process information in the GWY.CFG file.

Action: Replace the GWY.CFG file.

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: An error occurred while reading the LAN.CFG file.

Action: Check the hard disk or diskette where LAN.CFG is stored.

X'54' (84)

DOS VARDAT program (subcode)

Explanation: An error occurred in the attempt to pack or unpack bytes.

Action: Change the record shown to hexadecimal format.

DOS and OS/2 AS/400 router

Explanation: The AS/400 router configuration record does not exist.

Action: Put GWY.CFG in the same directory as the EHC400.EXE file.

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: The LAN.CFG file was not found.

Action: Put the LAN.CFG file in the same directory as the SPV.EXE and LAN.EXE or EHCLIP.EXE files.

X'55' (85)

DOS VARDAT program (subcode)

Explanation: The value in the **Included-in-Packet-Call** field in the X25DLCNA record is not correct. The only valid values are 0, 1, and 2.

Action: Correct the entry in the VARDAT.CFG file.

DOS and OS/2 AS/400 router

Explanation: The AS/400 router configuration record is not correct.

Action: Replace the GWY.CFG file.

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: The LAN.CFG or RESALIAS.CFG files have a format that is not valid.

Action: Replace the LAN.CFG or RESALIAS.CFG files with the right version.

X'56' (86)

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: There is a duplicated workstation identifier in the network.

Action: Reload LANDP with the correct workstation identifiers.

X'57' (87)

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: An error occurred while reading the SPV.CFG file.

Action: Check the hard disk or diskette where SPV.CFG is stored.

OS/2 and Windows NT MVDM relay

Explanation: The LSI loader program received a 'function not supported' return code. One of the DOS box settings is incompatible with your configuration.

Action: Check the DOS box settings.

X'58' (88)

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: The SPV.CFG file was not found.

Action: Put the SPV.CFG file in the same directory as the SPV.EXE file.

X'59' (89)

DOS, OS/2, and Windows NT EHCLIP, LAN, and supervisor

Explanation: The SPV.CFG file has a format that is not valid. Or, in the DOS environment only, the EHCUSER.CFG file has a format that is not valid.

Action: Replace the SPV.CFG or EHCUSER.CFG file with the correct version.

X'5A' (90)

OS/2 and Windows NT Trace server

Explanation: A trace file error has occurred.

Action: Check the disk.

X'5B' (91)

OS/2 and Windows NT Trace server

Explanation: A log file error has occurred.

Action: Check the disk.

X'5C' (92) • X'62' (98)

X'5C' (92)

OS/2 and **Windows NT** Trace server

Explanation: A parameter in the loading statement is not valid.

Action: Correct the syntax of the loading statement.

X'5D' (93)

OS/2 and **Windows NT** Trace server

Explanation: A general internal error has occurred.

Action: Check the OS/2 error in the log file.

DOS, OS/2, and **Windows NT** EHCLIP, LAN, and supervisor

Explanation: The workstation identifier of the SPV load command does not match the workstation identifier of the LAN or EHCLIP load command line (LANDP for DOS only).

Action: Check the workstation identifiers of the AUTOFBSS.BAT load command.

X'5E' (94)

DOS, OS/2, and **Windows NT** EHCLIP, LAN, and supervisor

Explanation: Either the IP address used for a remote workstation is not valid, or communication hardware or software is not available.

Action:

- For TCP/IP, check the IP address definitions, and the status of TCP/IP and the communication adapters.
 - For NetBIOS, check that the adapter is installed and that the LAN support program is installed and configured correctly.
 - For DOS, check that enough adapter work space has been defined for the number of sessions required.
-

X'5F' (95)

DOS, OS/2, and **Windows NT** EHCLIP, LAN, and supervisor

Explanation: There are insufficient resources. Either the adapter names capacity has been exceeded, or the LAN adapter installed or the LAN support program parameters do not allow the number of NetBIOS resources (sessions, commands, and names) needed to start the LANDP programs.

Action: Try the following:

- Increase the LAN support program parameters or unload other applications using NetBIOS.
 - On OS/2 workstations, check the NetBIOS resources assigned through the PROTOCOL.INI file. If OS/2 LAN server or LAN requester is installed, consider the resources assigned through the IBMLAN.INI file.
-

X'60' (96)

DOS Communication servers

Explanation: The SNA SDLC configuration record SDLC.CFG does not exist.

Action: Put SDLC.CFG in the directory with the SDLC.COM file.

OS/2 and **Windows NT** Communication servers

Explanation: Reserved.

Action: None.

X'61' (97)

DOS Communication servers

Explanation: The SNA SDLC configuration record SDLC.CFG is not correct.

Action: Replace the SDLC.CFG configuration record.

OS/2 and **Windows NT** Communication servers

Explanation: Reserved.

Action: None.

X'62' (98)

DOS Communication servers

Explanation: The record SNA.CFG or PIPE.CFG does not exist.

Action: Put the record SNA.CFG in the directory with SNA#.EXE, or put the record PIPE.CFG in the directory with the X25NAT#.EXE file.

OS/2 and **Windows NT** Communication servers

Explanation: An error occurred while opening the SNA.BID or PIPE.CFG configuration files. The files could be missing or damaged.

Action: Put the configuration file SNA.BID or PIPE.CFG into the current directory or use DPATH. If you still get this return code, customize again and reload LANDP for OS/2 or Windows NT.

X'63' (99)*DOS Communication servers*

Explanation: An error occurred while reading the SNA SDLC configuration record from disk. The SNA SDLC server cannot process the information in the SDLC.CFG file.

Action: Replace the SDLC.CFG file.

OS/2 and Windows NT Communication servers

Explanation: Reserved.

Action: None.

X'64' (100)*DOS Communication servers*

Explanation: The records SNA.CFG, PIPE.CFG, or SDLC.CFG are not correct.

Action: Replace the SNA.CFG, PIPE.CFG, or SDLC.CFG files.

OS/2 and Windows NT Communication servers

Explanation: The configuration file PIPE.CFG is not correct.

Action: Replace the PIPE.CFG file.

X'65' (101)*DOS Communication servers*

Explanation: One of the following could be true:

- An error was detected while reading the SNA.CFG, PIPE.CFG, or SDLC.CFG record.
- The configuration file SNAPOOL.CFG exists, but has an incorrect internal format.
- The configuration file EHCTCP.INI is missing or has an incorrect format.

Action: Try one of the following:

- Replace the SNA.CFG, PIPE.CFG, or SDLC.CFG files.
- Correct the internal format of the SNAPOOL.CFG file.
- Ensure that the EHCTCP.INI file is present and has the correct format.

OS/2 and Windows NT Communication servers

Explanation: One of the following could be true:

- An error occurred while reading the configuration files SNA.BID or PIPE.CFG. The files could be missing or damaged.
- The format of the configuration file SNAX25D.CFG is not correct.
- The format of the configuration file SNAPOOL.CFG is not correct.
- The configuration file EHCTCP.INI is missing or has an incorrect format.

Action: Customize again and reload LANDP, or correct the file format.

X'66' (102)*DOS Communication servers*

Explanation: The data link control (DLC) server was not found.

Action: Install the appropriate DLC server.

OS/2 and Windows NT Communication servers

Explanation: Reserved for future use.

Action: None.

X'67' (103)*DOS Communication servers*

Explanation: Reserved.

Action: None.

OS/2 and Windows NT Communication servers

Explanation: An operating system error occurred while initializing a communication server.

X'68' (104)*DOS Communication servers*

Explanation: EHCTCP server: TCP/IP is not working in this workstation

Action: Ensure that TCP/IP is operational before loading LANDP.

OS/2 and Windows NT Communication servers

Explanation: PPC server: A communications server error has occurred.
EHCTCP server: TCP/IP is not working in this workstation

Action: PPC server: Make sure the communications server ASCII-EBCDIC translation table has been defined.

X'69' (105) • X'70' (112)

EHCTCP server: Ensure that TCP/IP is operational before loading LANDP.

X'69' (105)

DOS Communication servers

Explanation: The X25DLC record VCM.CFG does not exist or the TRDLC configuration record TOK.CFG does not exist.

Action: Put the record VCM.CFG into the directory with X25DLC.EXE or put TOK.CFG into the directory with the TRDLC.EXE file.

OS/2 Communication servers

Explanation: An error occurred while opening the VCM.CFG configuration file. The file could be missing or damaged.

Action: Put the configuration file VCM.CFG into the directory with X25NAT##.EXE. If you still get this return code, customize again and reload LANDP for OS/2.

X'6A' (106)

DOS Communication servers

Explanation: The X25DLC record VCM.CFG is not correct or the TRDLC configuration record TOK.CFG is not correct.

Action: Replace the VCM.CFG or TOK.CFG files.

OS/2 Communication servers

Explanation: The configuration file VCM.CFG is not correct.

Action: Replace the VCM.CFG file.

X'6B' (107)

DOS Communication servers

Explanation: An error was detected while reading the X25DLC VCM.CFG or TOK.CFG record.

Action: Replace VCM.CFG or TOK.CFG files.

OS/2 Communication servers

Explanation: An error occurred while reading the VCM.CFG file. The file could be missing or damaged.

Action: Replace the VCM.CFG file. If you still get this return code, customize again and reload LANDP for OS/2.

X'6C' (108)

DOS Communication servers

Explanation: The communication adapter is not installed or the X.25 Coprocessor/2 support software is not loaded.

Action: Install the communications adapter or load the X.25 Coprocessor/2 support software.

X'6D' (109)

DOS Communication servers

Explanation: The SNA server is not loaded on the workstation with TRDLC.

Action: Perform customization again to have SNA and TRDLC on the same workstation.

X'6E' (110)

DOS Communication servers

Explanation: The token-ring adapter is not installed or the IBM LAN support program is not loaded.

Action: If the adapter is not installed, install it. If the LAN support program is not loaded, perform customization again to have the modules copied onto the operational diskette.

X'6F' (111)

DOS Communication servers

Explanation: An error was detected on interrupt X'5C'. A return code that is not valid was received from the adapter.

Action: Contact the system programmer.

X'70' (112)

DOS Emulators, operator interface, and local resource manager

Explanation: The DI3270, AE3270, EA3270, OPE.CFG, OPE.MSG, FK3270, or PRTATT.TAB file does not exist.

Action: Add the missing files to the directory with the EMU3270.EXE, EMU3287.EXE, or OPER.EXE file.

X'71' (113)

DOS Emulators, operator interface, and local resource manager

Explanation: An error was detected while reading the DI3270, AE3270, EA3270, OPE.CFG, or FK3270 file.

Action: Replace the DI3270, AE3270, EA3270, OPE.CFG, or FK3270 file.

OS/2 MVDM relay

Explanation: EHCBOXM.EXE is already loaded.

Action: Do not run EHCBOXM.EXE again.

X'72' (114)

DOS Emulators, operator interface, and local resource manager

Explanation: The DI3270, AE3270, EA3270, OPE.CFG, or FK3270 file is not correct.

Action: Replace the DI3270, AE3270, EA3270, OPE.CFG, or FK3270 file.

OS/2 and Windows NT MVDM relay

Explanation: The specified configuration file name is not correct or the file does not exist.

Action: Check the command line and correct the configuration file name specified.

X'73' (115)

DOS Emulators, operator interface, and local resource manager

Explanation: The command line parameters are not valid, or the command line and OPE.CFG do not agree.

Action: Check the parameters on the command line and correct them.

OS/2 and Windows NT MVDM relay

Explanation: Formats in the configuration file are not correct.

Action: Check the valid record formats of the configuration file.

X'74' (116)

DOS Emulators, operator interface, and local resource manager

Explanation: The PRTATT, OPE, or EA3287 record is not correct.

Action: Replace the PRTATT, OPE, or EA3287 file.

OS/2 and Windows NT MVDM relay

Explanation: The user exit routine name or the user exit DLL name specified is not correct, or the DLL was not found.

Action: Check the record type U, or correctly install the DLL specified in the configuration file.

X'75' (117)

DOS Emulators, operator interface, and local resource manager

Explanation: The screen size requested is not supported by the user's display adapter or the current display mode. It could be that:

- The screen has more than 24 rows but the display adapter is not EGA, VGA, SuperVGA, or XGA
- The screen has more than 42 rows but the display adapter is not VGA, SuperVGA, or XGA; or the display is in 43 line mode
- The screen has more than 80 columns (for example, 132) but the display adapter is not SuperVGA or XGA, or the SuperVGA adapter does not provide a 132-column text mode with enough rows for the requested screen size

Action: Specify a different screen size, install a new display adapter, or (for the second case) do not use 43 line mode.

X'76' (118)

DOS Emulators, operator interface, and local resource manager

Explanation: The workstation does not have a printer adapter installed.

Action: Install the printer adapter and reload the LANDP programs.

X'77' (119) • X'81' (129)

X'77' (119)

DOS Emulators, operator interface, and local resource manager

Explanation: Information in the OPE record is not valid.

Action: Customize again and reload the LANDP programs.

X'78' (120)

DOS and OS/2 AS/400 router

Explanation: The workstation identifier of SPV does not match the workstation identifier of the AS/400 router.

Action: Correct the incorrect workstation identifier and rerun the LANDP program or rerun customization.

X'79' to X'7F' (121 to 127)

DOS Emulators, operator interface, and local resource manager

Explanation: Reserved for future use.

Action: None.

X'7D' (125)

DOS and OS/2 RCMS

Explanation: The system is unable to read FBSSPATH.DAT or there is an error in its contents.

Action: Make sure FBSSPATH.DAT is in the same directory as the RCMS server, or rerun the GETTING distribution procedure. See the *LANDP Installation and Customization* book for information about the GETTING procedure.

X'7E'

DOS and OS/2 RCMS

Explanation: An RCMS load parameter error has occurred. There are either too few parameters or there are errors in the parameters.

Action: Check the load parameters and their values in the LOADER command.

X'7F'

DOS and OS/2 RCMS

Explanation: An error occurred while reading system files. The files could be damaged or the path was not found.

Action: Make sure the system and process file paths exist, and the system files (RCMS.LNF or RCME.MDG) and translation tables are in the specified path.

X'80' (128)

DOS VARDAT program (subcode)

Explanation: An I/O error occurred while trying to seek or read from the VARDAT.CFG file.

Action: Re-create the file and try again.

DOS, OS/2, and Windows NT Printer servers

Explanation: The DEVPARM file was not found.

Action: Put DEV47xx.TAB into the same directory as the printer server and reload the LANDP programs.

DOS and OS/2

Explanation: There is not enough memory to load COMMAND.COM.

Action: Load some programs into the expanded memory to free some memory.

X'81' (129)

DOS VARDAT program (subcode)

Explanation: An I/O error occurred while trying to seek, write, or read from the DCA.CFG file.

Action: Re-create the file and try again.

DOS, OS/2, and Windows NT Printer servers

Explanation: An error occurred while reading the 4710/12/20/22/48 printer server table records from disk. The 4710/12/20/22/48 printer server cannot process the information in this file.

Action: Replace the DEV47xx.TAB file.

X'82' (130)

DOS VARDAT program (subcode)

Explanation: An I/O error occurred while trying to seek, write, or read from the SDL.CFG file.

Action: Re-create the file and try again.

DOS and OS/2 Printer servers

Explanation: The financial output adapter is not correctly installed or it is faulty.

Action: Correctly install the financial output adapter and check all connections. If the problem persists, replace the financial output adapter.

X'83' (131)

DOS VARDAT program (subcode)

Explanation: An I/O error occurred while trying to seek, write, or read from the TOK.CFG file.

Action: Re-create the file and try again.

DOS, OS/2, and Windows NT Printer servers

Explanation: The configuration file TES.CFG or TES4748.CFG was not found.

Action: Put TES.CFG or TES4748.CFG file into the same directory as the printer server and reload the LANDP programs.

X'84' (132)

DOS VARDAT program (subcode)

Explanation: An I/O error occurred while trying to seek, write, or read from the X25.CF1 file.

Action: Re-create the file and try again.

DOS, OS/2, and Windows NT Printer servers

Explanation: An error occurred while reading the configuration file.

Action: Customize again and reload the LANDP programs.

X'85' (133)

DOS VARDAT program (subcode)

Explanation: An I/O error occurred while trying to seek, write, or read from the VCM.CFG file.

Action: Re-create the file and try again.

DOS and OS/2 Printer servers

Explanation: Parameters are not valid.

Action: Check the loading command line and reload the LANDP programs.

X'86' (134)

DOS, OS/2, and Windows NT Printer servers

Explanation: An operating system error has occurred.

Action: Check the operating system environment.

X'87' (135)

DOS and OS/2 Printer servers

Explanation: The DOS or OS/2 operating system version is not for Korea, People's Republic of China, or Taiwan.

Action: Check the operating system environment.

X'88' (136)

DOS and OS/2 Printer servers

Explanation: Reserved for future use.

Action: None.

X'89' (137)

DOS VARPARM program

Explanation: The second level is the error subcode. If the error is a syntax error, then the third level is the name of the keyword, for example 'suffix'.

Action: Look up the error subcode in this list.

X'8A' (138)

DOS and OS/2 Printer servers RCMS

Explanation: The KS to PC conversion routine (KS2PCALL.SYS or KS2PCALL.DLL) is not loaded.

Action: Add one of the following to the CONFIG.SYS file:

- Specify DEVICE=KS2PCALL
- Include a path for KS2PCALL.DLL in the LIBPATH statement.

X'8B' (139) • X'91' (145)

X'8B' (139)

DOS, OS/2, and Windows NT NEWCFG program

Explanation: System error trying to access the DOS REN command.

The second level is the number of the file where the verification error is produced.

The third level is the error subcode.

Action: Look up the error subcode in this list.

X'8C' (140)

DOS, OS/2, and Windows NT NEWCFG program

Explanation: Verification error. The same file exists with the name given in customization and the name used at run time.

The second level is the number of the file where the verification error is produced. The N in the file type shows the new file.

The third level is the error subcode.

Action: Look up the error subcode in this list.

X'8D' (141)

DOS VARDAT program

Explanation: Input/Output error. The second level is the number of the record in VARDAT.CFG where the error occurs. The third level is the error subcode.

Action: Look up the error subcode in this list.

X'8E' (142)

DOS VARDAT program

Explanation: Format error. The second level is the number of the record in VARDAT.CFG where the error occurs. The third level is the error subcode.

Action: Look up the error subcode in this list.

X'8F' (143)

DOS VARDAT program

Explanation: File error. The second level is the number of the record in VARDAT.CFG where the error occurs. The third level is the error subcode.

Action: Look up the error subcode in this list.

X'90' (144)

OS/2 Query server

Explanation: There is a command line parameters syntax error.

Action: Correct the loading statement.

OS/2 Shared-file distributor server

Explanation: The file SFDSRV.CFG does not exist.

Action: Place the file SFDSRV.CFG into the same path where the AUTOFBSS.COMD file is running.

OS/2 Shared-file replicator server

Explanation: The file SFRSRV.CFG does not exist.

Action: Place the file SFRSRV.CFG into the same path where the AUTOFBSS.COMD file is running.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The *.DBD database configuration file does not exist.

Action: Place the *.DBD file into the same path where the AUTOFBSS.COMD (on OS/2) or AUTOFBSS.BAT (on Windows NT) file is running.

AIX Shared-file server

Explanation: The *.DBD database configuration file does not exist.

Action: Place the *.DBD file into the /etc/landp directory.

X'91' (145)

OS/2 Query server

Explanation: A parameter value is out of range.

Action: Check the loading statement parameter values.

OS/2 Shared-file replicator server

Explanation: The *.PCB database configuration file does not exist.

Action: Place the *.PCB file into the same path where the AUTOFBSS.COMD (on OS/2) or AUTOFBSS.BAT (on Windows NT) file is running.

DOS, OS/2, and Windows NT

Explanation: The *.PCB database configuration file does not exist.

Action: Place the *.PCB file into the same path where the AUTOFBSS.COMD (on OS/2) or AUTOFBSS.BAT (on Windows NT) file is running.

AIX Shared-file server

Explanation: The *.PCB database configuration file does not exist.

Action: Place the *.PCB file into the same path where the autolandp file is running.

X'92' (146)

OS/2 Query server

Explanation: An error occurred while reading a services file (OS/2 error) or the file was not found.

Action: Verify if SERVICES.CFG exists and has the required format.

X'93' (147)

OS/2 Query server

Explanation: Incorrect values were found in the services file (SRV error).

Action: Change the SERVICES.CFG file.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The database description (DBD) referred to in a program control block (PCB) does not exist. The previous error message shows the PCB and DBD names.

Action: Check the shared-file definition and update it, as required.

AIX Shared-file server

Explanation: The database description (DBD) referred to in a program control block (PCB) does not exist. The previous error message shows the PCB and DBD names.

Action: Check the shared-file definition and update it, as required.

X'94' (148)

OS/2 Query server

Explanation: EHCSQLRQ.EXE could not be started.

Action: Try the following:

- Make sure enough memory is available and the requestor program EHCSQLRQ.EXE is in place.
- Make sure there are enough resources in the system.

DOS, OS/2, and Windows NT Shared-file server

Explanation: One of the following could be true:

- A key name referred to in a PCB does not match the specified DBD.

- A segmented key length was defined to have 0 or more than 255 bytes. The maximum allowed key length is 255 bytes. The sum of the lengths of the key segments cannot be greater than 255 bytes.

Action: Try one of the following:

- Check the database definition (DBD) and update it, as required.
- Check the lengths of the segmented keys and make corrections, as required.

AIX Shared-file server

Explanation: One of the following could be true:

- A key name referred to in a PCB does not match the specified DBD.
- A segmented key length was defined to have 0 or more than 255 bytes. The maximum allowed key length is 255 bytes. The sum of the lengths of the key segments cannot be greater than 255 bytes.

Action: Try one of the following:

- Check the database definition (DBD) and update it, as required.
- Check the lengths of the segmented keys and make corrections, as required.

X'95' (149)

OS/2 Query server

Explanation: A shared-memory allocation error has occurred.

Action: Make sure enough memory is present and a segment called FBSQxxxx.EHC does not exist in the system.

OS/2 Shared-file distributor server

Explanation: The file SFDSRV.CFG is damaged.

Action: Place a correct SFDSRV.CFG file into the same path where the AUTOBSS.COMD file is running.

OS/2 Shared-file replicator server

Explanation: The file SFRSRV.CFG is damaged.

Action: Place a correct SFRSRV.CFG file into the same path where the AUTOBSS.COMD file is running.

DOS, OS/2, and Windows NT Shared-file server

Explanation: A data or index file and a database description (DBD) do not match. The previous error message shows the DBD, PCB, or SEQ files.

Action: Check and update the database definition.

X'96' (150) • X'98' (152)

AIX Shared-file server

Explanation: A data or index file and a database description (DBD) do not match. The previous error message shows the DBD, PCB, or SEQ files.

Action: Check and update the database definition.

X'96' (150)

OS/2 Query server

Explanation: A memory allocation error has occurred.

Action: Make sure enough memory is available in the system.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The log file does not exist when running OPENLOG.EXE.

Action: Make sure the LOG.DAT file exists on the LOGPATH file path or in the root of the C drive.

- If it does not exist, run GENLOG.EXE.
- If it does exist, refer to the hardware problem determination information provided with the personal computer system.

AIX Shared-file server

Explanation: The log file does not exist when running openlog.

Action: Make sure the LOG.DAT file exists on the LOGPATH file path or in the the /etc/landp directory.

- If it does not exist, run the genlog command.
- If it does exist, refer to the hardware problem determination information provided with the personal computer system.

X'97' (151)

OS/2 Query server

Explanation: A process initialization error has occurred.

Action: Try the following:

- Check the requestor placement and make sure it is the correct program.
- Check if database manager (DBM) recognizes the configuration name and password.

OS/2 Shared-file distributor server

Explanation: An operating system input/output (I/O) error has occurred.

Action: For more information, see “Critical errors” on page 222 and “Primary input/output errors” on page 223.

OS/2 Shared-file replicator server

Explanation: An operating system input/output (I/O) error has occurred.

Action: For more information, see “Critical errors” on page 222 and “Primary input/output errors” on page 223.

DOS, OS/2, and Windows NT Shared-file server

Explanation: An operating system input/output (I/O) error has occurred.

Action: For more information, see “Critical errors” on page 155 and “Primary input/output errors” on page 156 (LANDP for DOS) or “Critical errors” on page 222 and “Primary input/output errors” on page 223 (LANDP for OS/2).

AIX Shared-file server

Explanation: An operating system input/output error has occurred.

Action: See “Critical errors” on page 321 and “Primary input/output errors” on page 322 for more information.

X'98' (152)

OS/2 Query server

Explanation: The database needs recovery.

Action: Try the following:

- Verify that the database does not need to run recovery procedures.
- Run RESTORE2.

DOS, OS/2, and Windows NT Shared-file server

Explanation: Backout (rollback) and/or forward recovery was carried out. (This is normal after a system or shared-file server failure.)

Action: Rerun the AUTOFBSS file.

AIX Shared-file server

Explanation: Backout (rollback) and/or forward recovery was carried out. (This is normal after a system or shared-file server failure.)

Action: Rerun the shared file server startup command.

X'99' (153)**OS/2 Query server**

Explanation: There is a program control block (PCB) table opening error.

Action: Check if all the database descriptions (DBDs) defined in EHCSQLTB define existing database tables.

DOS, OS/2, and Windows NT Shared-file server

Explanation: A configuration change is not allowed. The configuration file does not match information in the current log file.

Action: Run the backup procedure and create a new LOG.DAT file.

AIX Shared-file server

Explanation: A configuration change is not allowed. The configuration file does not match information in the current log file.

Action: Run the backup procedure and create a new LOG.DAT file.

X'9A' (154)**OS/2 Query server**

Explanation: A PCB table opening error or control field error has occurred. The field EHCSQLCL in a defined DBD table does not exist or has a type that is not correct.

Action: Create or correct the field.

OS/2 Shared-file distributor server

Explanation: Parameters specified in the loading statement are not valid.

Action: Correct the syntax of the loading statement.

OS/2 Shared-file replicator server

Explanation: Parameters specified in the loading statement are not valid.

Action: Correct the syntax of the loading statement.

DOS, OS/2, and Windows NT Shared-file server

Explanation: Parameters specified in the loading statement are not valid.

Action: Correct the syntax of the loading statement.

AIX Shared-file server

Explanation: Parameters specified in the loading statement are not valid.

Action: Correct the syntax of the loading statement.

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM could not obtain sufficient resources such as memory.

Action: Check system logs for error messages relating to this failure.

X'9B' (155)**OS/2 Query server**

Explanation: A PCB table opening error or defined key column error has occurred. A field that is a key column for a PCB does not exist or has a type that is not correct.

Action: Create or correct the field.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The record length defined in a database description (DBD) exceeds the maximum allowed length, or the record split size is too small.

Action: Try one of the following:

- Check the database definition and update it, as required.
- Check the record split size that was defined during customization.

AIX Shared-file server

Explanation: The record length defined in a database description (DBD) exceeds the maximum allowed length, or the record split size is too small.

Action: Try one of the following:

- Check the database definition and update it, as required.
- Check the record split size that was defined during customization.

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM could not find the EHCSAM configuration profile (EHCSAM.CFG).

Action: Check that the correct version of EHCSAM.CFG is in the current directory.

X'9C' (156) • X'A0' (160)

X'9C' (156)

OS/2 Object post box server

Explanation: The SERVICES.CFG file was not found in the directory where the AUTOFBSS file is running or reading problems occurred because of physical errors. The SERVICES.CFG file is generated during LANDP workgroup configuration.

Action: Put the SERVICES.CFG file into the directory where the AUTOFBSS file is running.

OS/2 Query server

Explanation: A PCB table opening error or index find error has occurred. The EHCSQLTB table has been damaged.

Action: Check the application programs to ensure that they do not access this table.

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM found errors in the EHCSAM configuration profile (EHCSAM.CFG).

Action: Check that the correct version of EHCSAM.CFG is in the current directory.

X'9D' (157)

OS/2 Object post box server

Explanation: The SERVICES.CFG file, generated during LANDP workgroup configuration, does not contain expected information.

Action: Replace the SERVICES.CFG file.

OS/2 Query server

Explanation: A log file opening error has occurred. The log file could not be opened.

Action: Check if the access path exists and that the log file is not in use by another process.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The SERVICES.CFG file, generated during network configuration, does not contain expected information.

Action: Replace the SERVICES.CFG file.

AIX Shared-file server

Explanation: The services.cfg file, generated during network configuration, does not contain expected information.

Action: Replace the services.cfg file.

X'9E' (158)

OS/2 Query server

Explanation: A log format type error has occurred. The existing log file does not have an adequate format.

Action: Generate a correct EHCSQLOG.DAT file with the GENLOG2 utility or delete the existing log file.

DOS, OS/2, and Windows NT Shared-file server

Explanation: An index is defined for DBCS support, but the system is not in DBCS mode.

AIX Shared-file server

Explanation: An index is defined for DBCS support, but the system is not in DBCS mode.

X'9F' (159)

OS/2 Query server

Explanation: A TYPELOG2 utility error occurred while reading a log file record.

Action: Contact an IBM support representative.

X'A0' (160)

DOS and OS/2 Electronic journal server

Explanation: The server profile EJOU.PRO is missing.

Action: Place the EJOU.PRO file on the path of the electronic journal server, or check and update the electronic journal definitions.

DOS and OS/2 Forwarding server

Explanation: There is a loader command line error.

Action: Either the */O:* command line parameter is missing (this does not apply to DBCS mode), or the */T:*, */K:*, or */H:* command line parameter specifies a value that is not valid.

DOS and OS/2 Searcher server

Explanation: The server profile is missing. The files EJOU.PRO, STOR.PRO, or both must be present.

Action: Try one or more of the following:

- Place the EJOU.PRO file on the path of the electronic journal server.
- Check and update the electronic journal definitions.
- Place the STOR.PRO file on the path of the store-for-forwarding server.
- Check and update the store-for-forwarding definitions.

DOS and OS/2 Store-for-forwarding server

Explanation: The server profile STOR.PRO is missing.

Action: Place the STOR.PRO file on the path of the store-for-forwarding server, or check and update the store-for-forwarding definitions.

X'A1' (161)*DOS and OS/2 Electronic journal server*

Explanation: There is a loader command line error.

Action: The */K:* command line parameter specifies a value that is not valid.

DOS and OS/2 Forwarding server

Explanation: The server profile is missing. The FORW.PRO file or the ASCII-to-EBCDIC translation table was not found.

Action: Place the FORW.PRO file on the path of the forwarding server or do one of the following:

- In SBCS mode, place the ASCII-to-EBCDIC table specified by the */O:* command line parameter on the path of the forwarding server.
- In DBCS mode, place the TRNSCALL.DLL file in the OS/2 LIBPATH.

DOS and OS/2 Searcher server

Explanation: There is a LOADER command line error.

Action: The */K:* command line parameter specifies a value that is not valid.

DOS and OS/2 Store-for-forwarding server

Explanation: There is a LOADER command line error.

Action: The */K:* command line parameter specifies a value that is not valid.

X'A2' (162)*DOS and OS/2 Electronic journal server*

Explanation: The buffer size is smaller than the shared-file server record length.

Action: Increase the */K:* command line parameter value, or reduce the split criteria in the electronic journal server profile.

DOS and OS/2 Searcher server

Explanation: The buffer size is smaller than the shared-file server record length.

Action: Increase the */K:* command line parameter value or reduce the split criteria in both the electronic

journal server and the store-for-forwarding server profiles.

DOS and OS/2 Store-for-forwarding server

Explanation: The buffer size is smaller than the shared-file server record length.

Action: Increase the */K:* command line parameter value, or reduce the split criteria in the store-for-forwarding server profile.

X'A6' (166)*OS/2 Query server*

Explanation: This is the wrong log file. The log file does not correspond to the accessed database.

Action: Change the configuration of the log file.

OS/2 Shared-file distributor server

Explanation: Resources required by the system are not available.

Action: Reduce the system load and try again.

OS/2 Shared-file replicator server

Explanation: Resources required by the system are not available.

Action: Reduce the system load and try again.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The shared-file server does not have enough free storage to permit allocation of required additional buffers.

Action: Reduce the number of additional buffers and try again.

AIX Shared-file server

Explanation: The shared-file server does not have enough free storage to permit allocation of required additional buffers.

Action: Reduce the number of additional buffers and try again.

X'A7' (167)*OS/2 Query server*

Explanation: A BACKUP2 or RESTORE2 error occurred while calling a database utility program.

Action: Check the system software installation.

OS/2 and Windows NT Shared-file server

Explanation: A shared-file server has a damaged FREECHAIN.

X'A8' (168) • X'AC' (172)

Action: Start the shared-file server with the /R: parameter.

X'A8' (168)

OS/2 Query server

Explanation: EHC unexpected response to a utility program: a utility program detected an unexpected return code from an EHCSQL## server.

Action: Check the LANDP installation or contact the LANDP development team.

DOS, OS/2, and Windows NT Shared-file server

Explanation: A log file was found that was either generated with an old SHFILE## server version or is not correct.

Action: Run GENLOG.EXE.

DOS Shared-file server

Explanation: The log file log.dat has been previously used on OS/2 or Windows NT by the shared file server with XLR (external logging replicator).

Action: Ensure that the log is synchronised with the database. Then run the GENLOG command.

AIX Shared-file server

Explanation: A log file was found that was either generated with an old SHFILE## server version or was not correct.

Action: Run the GENLOG command.

X'A9' (169)

OS/2 Query server

Explanation: A user interrupted the RESTORE2 process. The database restoration did not finish because of user intervention.

Action: Try again.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The *.SEQ collate table file does not exist.

Action: Place the *.SEQ file into the directory where the AUTOFBSS file is running.

AIX Shared-file server

Explanation: The *.SEQ collate table file does not exist.

Action: Place the *.SEQ file into the /etc/landp directory.

X'AA' (170)

DOS and OS/2 Forwarding server

Explanation: The sign-on file was not found or it is not valid.

Action: Place the sign-on file on the path of the forwarding server or check its format. See the *LANDP Servers and System Management* book for information about the file format.

DOS, OS/2, and Windows NT Shared-file server

Explanation: A duplicate key was found while re-indexing.

Action: Contact the system operator.

AIX Shared-file server

Explanation: A duplicate key was found while re-indexing.

Action: Contact the system operator.

X'AB' (171)

OS/2 Query server

Explanation: The database does not exist.

Action: Create a database through the query manager.

X'AC' (172)

OS/2 Query server

Explanation: A program control block (PCB) table opening error has occurred. An EHCSQLTB read error was detected.

Action: Try the following:

- Verify that the EHCSQLTB table has the correct format and status of DBMs.
- Log on the SQL services for the database.
- Verify that the database exists.

DOS Shared-file server

Explanation: An attempt was made to load a server without using the LOADER or LOADERE program, as appropriate (DOS environment only).

Action: Put the correct statement in the AUTOFBSS file.

X'AD' (173)

DOS, OS/2, and Windows NT Shared-file server

Explanation: The secondary log file LOG2.DAT was not found.

Action: Make the secondary log file available or specify log management with a unique log file.

AIX Shared-file server

Explanation: The secondary log file LOG2.DAT was not found.

Action: Make the secondary log file available or specify log management with a unique log file.

X'AE' (174)

DOS, OS/2, and Windows NT Shared-file server

Explanation: The log file LOG.DAT is not at the same level as LOG2.DAT.

Action: Try one of the following:

- Copy the LOG2.DAT file to LOG.DAT.
- Rename the LOG2.DAT file to LOG.DAT, then restart the shared-file server without dual log management.

AIX Shared-file server

Explanation: The log file LOG.DAT is not at the same level as LOG2.DAT.

Action: Try one of the following:

- Copy the LOG2.DAT file to LOG.DAT.
- Rename the LOG2.DAT file to LOG.DAT, then restart the shared-file server without dual log management.

X'AF' (175)

DOS, OS/2, and Windows NT Shared-file server

Explanation: The log file LOG2.DAT is not at the same level as LOG.DAT.

Action: Try one of the following:

- Copy the LOG.DAT file to LOG2.DAT.
- Restart the shared-file server without dual log management.

AIX Shared-file server

Explanation: The log file LOG2.DAT is not at the same level as LOG.DAT.

Action: Try one of the following:

- Copy the LOG.DAT file to LOG2.DAT.
- Restart the shared-file server without dual log management.

X'B0' (176)

DOS ASCII-EBCDIC translation server

Explanation: The current country is not supported.

Action: Check the environment.

OS/2 Batch machine facility

Explanation: A loading parameters error has occurred.

Action: Check the loading statement in the AUTOFBSS.CMD file.

DOS and OS/2 Batch machine facility

Explanation: The loading parameters are not correct.

DOS, OS/2, and Windows NT Shared-file server

Explanation: The shared-file server cannot perform forward recovery because the log files are truncated.

Action: Check the log files.

X'B1' (177) • X'C0' (192)

AIX Shared-file server

Explanation: The shared-file server cannot perform forward recovery because the log files are truncated.

Action: Check the log files.

X'B1' (177)

DOS ASCII-EBCDIC translation server

Explanation: Translation tables are not available or not traced.

Action: Copy TBLASC.088, TBLEBC.088, and TBLTAI.088 into a path specified with TRNSCALL (only Taiwan).

OS/2 Batch machine facility

Explanation: There is not enough memory to allocate client memory pool (DOS environment).

Action: Check the available memory.

DOS and OS/2 Batch machine facility

Explanation: There is not enough memory to allocate the client memory pool (DOS environment only).

X'B3' (179)

OS/2 Batch machine facility

Explanation: There is not enough space to communicate with the client workstation.

Action: Check the space available in the environment.

X'B8' (184)

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM is not active for this server.

Action: To enable Shared File Server to run in XLR mode, EHCSAM must be running on this workstation. Ensure that EHCSAM starts successfully.

X'B9' (185)

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM could not provide state information for this server.

Action: Ensure that:

The correct version of EHCSAM.CFG is in the current directory.

The X/:nn parameter identifies a valid XLR server pair.

X'BA' (186)

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM could not change the active configuration for this XLR server.

Action: Ensure that:

The correct version of EHCSAM.CFG is in the current directory.

The X/:nn parameter identifies a valid XLR server pair.

X'BB' (187)

OS/2 and Windows NT Service Availability Manager

Explanation: The XLR server is not configured to run on this workstation.

Action: Ensure that:

The correct version of EHCSAM.CFG is in the current directory.

The X/:nn parameter identifies a valid XLR server pair.

X'BC' (188)

OS/2 and Windows NT Service Availability Manager

Explanation: EHCSAM could not set state information for this workstation.

Action: Ensure that:

The correct version of EHCSAM.CFG is in the current directory.

The X/:nn parameter identifies a valid XLR server pair.

X'C0' (192)

DOS and OS/2 System manager and system manager operator

Explanation: The command line loading parameters are not correct. The following could be true:

- The **ID** (FBSS#GDT backup on a remote drive) loading parameter is not correct.
- The **IO** (default NetView operator ID for the MO function) is not correct.

Action: Check the command line loading parameters. See the *LANDP Installation and Customization* book for information about the loading parameters.

X'C1' (193)

DOS and OS/2 System manager and system manager operator

Explanation: The system cannot read the FBSPATH.DAT or SMGR.CFG file. The file contents could be damaged.

Action: Make sure FBSPATH.DAT and SMGR.CFG are in the same directory as the system manager server, or rerun the customization utility program to get new copies.

X'C2' (194)

DOS and OS/2 System manager and system manager operator

Explanation: There is not enough disk space or memory.

Action: Try the following:

- Make sure there is enough free space on the disk.
- Make sure the disk is working properly.
- Make sure there is enough available memory.
- Make sure the specified path exists.

X'C3' (195)

DOS and OS/2 System manager and system manager operator

Explanation: An error occurred while reading the FBSS#LOG file. The log file could be damaged, or the path was not found.

Action: Try one or both of the following:

- Make sure the specified path exists.
- Delete the current log file and reload the LANDP programs.

X'C4' (196)

DOS and OS/2 System manager and system manager operator

Explanation: An error occurred while reading the FBSS#ALR file. The alerts file could be damaged or the path was not found.

Action: Try the following:

- Make sure the specified path exists.
- Delete the current FBSS#ALR alerts file, and then reload the LANDP programs.

X'C5' (197)

DOS and OS/2 System manager and system manager operator

Explanation: An error occurred while reading the FBSS#GDT file. The global data file could be damaged or it was not found.

Action: Try the following:

- Make sure the specified path exists.
- Replace the file with a new one, or rerun customization.

X'C6' (198)

DOS and OS/2 System manager and system manager operator

Explanation: An error occurred while reading the FBSS#USP file. The user profile file could be damaged or it was not found.

Action: Try the following:

- Make sure the specified path exists.
- Replace the file with a new one, or rerun customization.

X'C7' (199)

DOS and OS/2 System manager and system manager operator

Explanation: An error occurred while reading the RDF.CFG file. The record file could be damaged or it was not found.

Action: Try the following:

- Make sure the specified path exists.
- Replace the file with a new one, or rerun customization.

X'C8' (200)

DOS and OS/2 System manager and system manager operator

Explanation: The path for a system manager file is missing.

Action: Rerun customization, assigning one path for each system manager file.

X'C9' (201) •X'E0' (224) to X'EF' (239)

X'C9' (201)

DOS and OS/2 System manager and system manager operator

Explanation: The system cannot read the FBSSPATH.DAT or SMOP.CFG file. The file contents could be damaged.

Action: Make sure the FBSSPATH.DAT or SMOP.CFG files are in the same directory as the system manager operator, or rerun customization to get new ones.

X'CA' (202)

DOS and OS/2 System manager and system manager operator

Explanation: The system cannot read any of the system manager operator overlays (SMOPOV*.OVL) or the MS0.MSG file. The file contents could be damaged.

Action: Make sure the SMOPOV*.OVL overlays and the MS0.MSG file are in the path specified during customization.

X'D1' (209)

OS/2 DDE access server

Explanation: A system error has occurred.

X'D2' (210)

OS/2 DDE access server

Explanation: There is not enough memory.

Action: Check the available memory.

X'D7' (215)

OS2 and Windows NT MQSeries Link server

Explanation: The loader statement parameters are not valid.

Action: Check the loading parameters and correct them. See the LANDP Installation and Customization book for information about Loader parameters.

X'D8' (216)

OS2 and Windows NT MQSeries Link server

Explanation: The MQSeries Queue Manager is not available.

Action: Check that the MQSeries Queue Manager is running.

X'D9' (217)

OS2 and Windows NT MQSeries Link server

Explanation: The MQSeries Link server does not have authority to connect to the MQSeries Queue Manager.

Action: Check that the MQSeries Queue Manager configuration allows the MQSeries Link server to connect.

X'DA' (218)

OS2 and Windows NT MQSeries Link server

Explanation: The MQSeries Link server failed to connect to the MQSeries Queue Manager.

Action: Refer to the log files for a detailed explanation, if necessary change the loader parameters to switch on logging and retry.

X'DB' (219)

OS2 and Windows NT MQSeries Link server

Explanation: An initialization error has occurred.

Action: Refer to the log files for a detailed explanation, if necessary change the loader parameters to switch on logging and retry.

X'DC' (220)

OS2 and Windows NT MQSeries link server

Explanation: An operating system I/O error has occurred.

Action: Check the Path parameter in the parameter list specifies a valid directory and that the directory can be written to, then retry.

X'E0' (224) to X'EF' (239)

User server

Chapter 8. LANDP for DOS return codes

LANDP return codes are values returned by servers as a result of a function or service request made by an application program. This chapter lists the codes returned by LANDP for DOS servers.

“Return codes” on page 5 briefly describes LANDP return codes, including the types and classes of codes. It also describes how to interpret hexadecimal and ASCII return codes.

Quick Guide

There are two types of LANDP return codes: router and server. Router return codes are stored with offset 4 in the CPRB. Server return codes are stored with offset 40 in the CPRB. Operations are successful only if the router and the server return codes are zero.

Listings include the hexadecimal return code and, if available, the translated ASCII return code. The ASCII code appears in parentheses. The first character of the ASCII return code shows the code class, as follows:

Character	Class
I	<i>Intervention required.</i> These return codes occur when workstation operators or technical service personnel can remove the error (or fault).
L	<i>LAN services error.</i> These return codes can occur in any function request to any server. These return codes are listed in “LAN and router” on page 134. NetBIOS return codes are listed and described in <i>LAN Technical Reference IEEE 802.2 and NetBIOS Application Program Interfaces</i> , SC30-3587.
P	<i>Programming error.</i> These return codes can occur while developing or debugging application programs. They should not occur in daily operation with error-free programs.
U	<i>Device error</i> (Unable to access equipment) or other unexpected error. These return codes occur when LANDP software cannot carry out a request. The most likely cause is a hardware error (or fault).

ASCII-EBCDIC translation server

The following codes are returned by the ASCII-EBCDIC translation server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

IP X'01004950'

Causing functions: AE, EA

Explanation: A parameter is not correct.

Action: Check the parameter.

HD X'01004844'

Causing functions: AE, EA

Explanation: Half Double condition. The last byte of the source string is the first half of a DBCS character. The target string has this byte replaced by a NULL, and flag3 indicates D.

NS X'01004E53'

Causing functions:

Explanation: The function is not supported.

BS X'01004253'

Causing functions: AE, EA

Explanation: There is not enough buffer. The length of the target string is longer than the specified reply data length. The correct reply data length is returned in flag4.

If the last byte of the source string is the first half of a DBCS character, the target string has this byte replaced by a NULL.

Compression server

The following codes are returned by the compression server, which can be used with the SNA server in LANDP for DOS environments.

P2 X'01005032'

Causing functions: CM

Explanation: There is not enough space in the reply data area to store the entire compressed request/response unit (RU).

P2 X'01005032'

Causing functions: CM, UC

Explanation: The data lengths are not correct for the compressed data or decompress data functions.

Action: Check the program.

P2 X'01005032'

Causing functions: UC

Explanation: There is not enough space in the reply data area to store the entire decompressed RU.

P4 X'01005034'

Causing functions: CM

Explanation: Data compression was not performed because compressed data length is greater than uncompressed data length.

P4 X'01005034'

Causing functions: UC

Explanation: The length given in the compression header and the length of the decompressed request/response unit (RU) do not match.

P7 X'01005037'

Causing functions: UC

Explanation: The following could be true:

- The run-length encoding (RLE) header is not correct: it does not equal 0X11.
- The compression algorithm is wrong.
- The encoded length is greater than 4096 bytes.
- The actual length is greater than the encoded length.
- The decompression control sequence is not valid.

Cryptographic interface

Cryptographic interface

The following errors are detected by the cryptographic interface.

Note: The following abbreviations denote the functions that can cause cryptographic errors:

DC	Decrypt
EC	Encrypt
KG	Key-generation
RD	Resource directory functions

X'00000000'

Causing functions: EC, DC, KG, RD

Explanation: Successful completion.

Action: None required.

X'00A00004'

Causing functions: EC, DC, RD

Explanation: The resource ID is not valid.

X'00A00008'

Causing functions: EC, DC, KG, RD

Explanation: The key record content is not valid or there is a key storage problem.

X'00A0000A'

Causing functions: RD

Explanation: The resource ID already exists.

X'00A0000B'

Causing functions: RD

Explanation: The resource directory is full: 32 entries are present.

X'00A0000C'

Causing functions: RD

Explanation: The key type is not valid.

X'00A00033'

Causing functions: EC, DC, RD

Explanation: The last block rule value is not valid.

X'00A00034'

Causing functions: EC, DC, RD

Explanation: The pad value is not valid.

X'00A00035'

Causing functions: EC, DC

Explanation: The initial chaining value (ICV) flag is not valid.

X'00A00036'

Causing functions: DC

Explanation: The padding flag is not valid.

X'00A00050'

Causing functions: KG

Explanation: The key out value is not valid.

X'00A00061'

Causing functions: RD

Explanation: The command type is not valid.

X'00A05000'

Causing functions: EC, DC, KG, RD

Explanation: The CPRB length is not valid.

X'00A05001'

Causing functions: EC, DC, KG, RD

Explanation: The function ID is not valid.

X'00A05002'

Causing functions: EC, DC, KG, RD

Explanation: The interface name length is not valid.

X'00A05004'

Causing functions: EC, DC, KG, RD

Explanation: The request PARMLIST length is not valid.

X'00A05005'

Causing functions: EC, DC, KG, RD

Explanation: The reply PARMLIST length is not valid.

X'00A05006'

Causing functions: EC, DC

Explanation: The request DATA length is not valid.

X'00A05007'

Causing functions: EC, DC

Explanation: The reply DATA length is not valid.

X'00A05008'

Causing functions: EC, DC, KG, RD

Explanation: The pointer value is not valid.

X'00A06000'

Causing functions: EC, DC, KG, RD

Explanation: The resource directory file was not found.

X'00A06001'

Causing functions: EC, DC, KG, RD

Explanation: A file I/O error has occurred.

X'00A06002'

Causing functions: EC, DC, KG, RD

Explanation: A hardware failure has occurred.

X'00A06003'

Causing functions: EC, DC, KG, RD

Explanation: Hardware access was denied.

X'00A07001'

Causing functions: EC, DC, KG, RD

Explanation: The master key was not installed.

X'00A07002'

Causing functions: EC, DC, KG, RD

Explanation: An irrecoverable interface error has occurred.

X'00A07003'

Causing functions: RD

Explanation: The key encrypting key was not installed.

X'00A07004'

Causing functions: EC, DC, KG, RD

Explanation: The encryption hardware support was not installed.

EHCLIP program

The following codes are returned by EHCLIP, the LANDP Internet Protocol program. See “EHCLIP trace” on page 32 for information about the EHCLIP program and trace choices.

CE01

Explanation: TCP/IP returned error data to the **open socket** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE02

Explanation: TCP/IP returned error data to the **bind** function. EHCLIP cannot start.

Action: If data is 48 (EADDRINUSE), the port number requested by EHCLIP could already be in use by another TCP/IP application. Stop the application, or start EHCLIP on all the LANDP workgroup workstations with the **/N** parameter. See the *LANDP Installation and Customization* book for information about the parameter.

If data is 49 (EADDRNOTAVAIL), either TCP/IP is not started or the TCP/IP network interface is not active. Make sure TCP/IP is operational.

CE03

Explanation: TCP/IP returned error data to the **setsockopt** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE04

Explanation: TCP/IP returned error data to the **ioctl** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE05

Explanation: Workstation identifier **ws_id** is duplicated in the configuration. EHCLIP cannot start.

Action: Correct the duplicated workstation identifier.

CE06

Explanation: TCP/IP returned error data to the **gethostbyname** function for **ws_id**. Either the workstation identification corresponding to **ws_id** is not correctly defined in the TCP/IP 'hosts' file or 'names' server, or TCP/IP could not access the 'names' server or open the 'hosts' file. EHCLIP cannot start.

CE07

Explanation: The local **ws_id** is duplicated as a related workstation. EHCLIP cannot start.

Action: Correct the duplicated workstation identifier.

CE08

Explanation: TCP/IP returned a null address for **ws_id**. EHCLIP cannot start.

Action: Check the TCP/IP 'hosts' file format or 'names' server definition.

CE10

Explanation: TCP/IP returned error data to the **sendto** function.

Action: If data is 65 (EHOSTUNREACH), then the **sendto** failed because **ws_id** cannot be reached from the local workstation. If a session is still being established, then LIP checks alternative addresses for **ws_id**. If no address is reachable, then LIP cannot continue running. In this case, check the routing table and make sure there is a path to the remote workstation.

If data is not 65, then LIP cannot continue running. Make sure TCP/IP is operational.

CE11

Explanation: The **sendto** function failed because no TCP/IP output buffer space was available. EHCLIP retried the TCP/IP output function for lack of space in TCP/IP output buffers.

This may be caused by an overloaded network. The session is continued.

CE12

Explanation: Message length data to be sent to ws_id is larger than the maximum allowed. An application tried to send more data than the maximum allowed. The message was not sent.

CE20

Explanation: TCP/IP returned error data to the **recvfrom** function. EHCLIP cannot continue running.

Action: Make sure TCP/IP is operational.

CE30

Explanation: A session with ws_id has closed. EHCLIP closed a session with ws_id when a segmented message send operation could not be completed.

Action: Session re-establishment procedures are started.

CE32

Explanation: A session with ws_id has closed. EHCLIP closed a session with ws_id because contact was lost.

Action: Session re-establishment procedures are started.

CE40

Explanation: The system detected a configuration error. A remote ws_id and an INET address do not match local configuration data. The session with ws_id is not established.

Action: Check local the TCP/IP 'hosts' file or 'names' server definitions.

CE41

Explanation: The system detected a configuration error. A remote workstation reported that the local ws_id and the INET address do not match its configuration data. The session with ws_id is not established.

Action: Check the remote workstation TCP/IP 'hosts' file or 'names' server definitions.

CS01

Explanation: A session has been established with workstation ws_id.

CS02

Explanation: Remote workstation ws_id has closed the session.

CSND

Explanation: The number of datagrams sent to workstation ws_id.

CSRD

Explanation: The number of datagrams sent to workstation ws_id that required re-transmission.

CSPF

Explanation: Minimum percentage of free space in the re-transmission table during EHCLIP activity.

CSNE

Explanation: The number of times a message could not be sent because of lack of space in the re-transmission table.

CSNW

Explanation: The number of times a message could not be sent because the send window was not sufficiently open.

Electronic journal server

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal server, the store-for-forwarding server, or both servers.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Electronic journal server

The following codes are returned only by the electronic journal server.

J0 X'01004A30'

Causing functions: RL

Explanation: There is no journal to release.

J1 X'01004A31'

Causing functions: IL, SL

Explanation: The logical journal environment is not selected.

J2 X'01004A32'

Causing functions: SL

Explanation: A new logical journal was not found or two (or more) SL functions occurred in sequence.

J3 X'01004A33'

Causing functions: SL

Explanation: A previous logical journal was not found.

J4 X'01004A34'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J5 X'01004A35'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J6 X'01004A36'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J7 X'01004A37'

Causing functions: AL

Explanation: The data set is already allocated.

J8 X'01004A38'

Causing functions: AL

Explanation: The next data set is not empty.

J9 X'01004A39'

Causing functions: DA

Explanation: Deallocation is not possible because the latest allocated data set already contains records.

JA X'01004A41'

Causing functions: RR

Explanation: Too many records are on hold.

JB X'01004A42'

Causing functions: DL, UP

Explanation: No record is on hold.

JC X'01004A43'

Causing functions: AR, RL, RR

Explanation: An electronic journal was not selected.

JD X'01004A44'

Causing functions: AR, DA, IL, IP, RL, RS, RR, SL

Explanation: The journal was not found.

JE X'01004A45'

Causing functions: DA, SL

Explanation: A data set is not allocated.

JF X'01004A46'

Causing functions: RR

Explanation: The accessed logical journal is not active.

JG X'01004A47'

Causing functions: RR

Explanation: The accessed physical journal is not in use.

JH X'01004A48'

Causing functions: DL

Explanation: The record cannot be deleted because it belongs to another logical journal.

JI X'01004A49'

Causing functions: UP

Explanation: The record cannot be updated because it belongs to another logical journal.

JJ X'01004A4A'

Causing functions: AL, SL

Explanation: The physical or logical journal name is blank.

JK X'01004A4B'

Causing functions: DL

Explanation: The record has already been deleted.

JL X'01004A4C'

Causing functions: RR

Explanation: The delete flag is not equal to Y or N.

JM X'01004A4D'

Causing functions: RR

Explanation: The hold flag is not equal to H or N.

JN X'01004A4E'

Causing functions: SL

Explanation: There are too many logical journals.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal and store-for-forwarding servers.

P0 X'01005030'

Causing functions:

Explanation: The function is not supported.

P1 X'01005031'

Causing functions: Any, except CS, IS, QD, SI, TB, TE, TI

Explanation: This is an imbedded server call error.

Action: Obtain more information through the system manager error log.

P2 X'01005032'

Causing functions: AR, RR

Explanation: The format name is unknown.

P3 X'01005033'

Causing functions: Any

Explanation: The shared file is not initialized. (A GF function was not requested.)

P4 X'01005034'

Causing functions: Any, except UP

Explanation: Transaction locking is not initialized. (A BT function was not requested.)

electronic journal and store-for-forwarding servers

P5 X'01005035'

Causing functions: Any, except UP

Explanation: The shared file is not initialized. (An OO function was not requested.)

P6 X'01005036'

Causing functions: AR, DL, RR

Explanation: A separate session is already open. Function DL only applies to the store-for-forwarding server.

P7 X'01005037'

Causing functions: AR, RR

Explanation: An entry is not available in separate session tables.

Action: Try later.

P8 X'01005038'

Causing functions: AR, RR

Explanation: A separate session cannot be opened.

P9 X'01005039'

Causing functions: AR, DL, RR, TS, UP

Explanation: A separate session is not open.

PA X'01005041'

Causing functions: AR, DL, RR, TS, UP

Explanation: After an error occurred, the separate session could not be rolled back.

PB X'01005042'

Causing functions: AR, DL, RR, TS, UP

Explanation: A separate session could not be closed.

PC X'01005043'

Causing functions: RR

Explanation: A record satisfying the search criteria was not found.

PD X'01005044'

Causing functions: RR

Explanation: An internal error has occurred.

PE X'01005045'

Causing functions: RR

Explanation: The search definition is not correct or the search mode is not valid.

PF X'01005046'

Causing functions: RR

Explanation: A record matching the search criteria was not found after the maximum number of disk accesses.

PG X'01005047'

Causing functions: Any

Explanation: Initial handling was not done. This error causes an alert to be sent to the host. The TI function does not send alerts.

PH X'01005048'

Causing functions: AR, UP

Explanation: The field length is not the same as in the defined record format.

PI X'01005049'

Causing functions: AR, UP

Explanation: The field format is not the same as in the defined record format.

PJ X'0100504A'

Causing functions: AR, DL, RR, UP

Explanation: A separate session flag is in error.

PK X'0100504B'

Causing functions: UP

Explanation: The length of the record to be updated differs from the length of the provided record.

PL X'0100504C'

Causing functions: UP

Explanation: An update with a key field change is not allowed. (The key in the record to be updated differs from the key in the provided record.)

PM X'0100504D'

Causing functions: UP

Explanation: The record definition differs.

PN X'0100504E'

Causing functions: AR, DL, RR, UP

Explanation: A separate session flag was used when no separate session was chosen.

PO X'0100504F'

Causing functions: RR, RS

Explanation: The record is locked by another workstation.

PP X'01005050'

Causing functions: SL, TB, TE

Explanation: The flag is not valid.

PQ X'01005051'

Causing functions: AR

Explanation: The request DATA length is greater than the buffer size (specified in the /K loading parameter) less 32.

PQ X'01005051'

Causing functions: RR

Explanation: The request DATA length is greater than X'0400'.

PR X'01005052'

Causing functions: RR

Explanation: The returned record is truncated.

Action: Try the following:

- If the sum of the actual record size and 32 is greater than the buffer size, increase the value of the /K loading parameter.
- If the sum of the actual record size and 32 is greater than the reply DATA length, increase the reply DATA length.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Store-for-Forwarding server

The following codes are returned only by the store-for-forwarding server.

S0 X'01005330'

Causing functions: DL

Explanation: The record cannot be deleted because it has not been sent by the forwarding facility.

S1 X'01005331'

Causing functions: CS

Explanation: Incomplete status data was provided.

S1 X'01005331'

Causing functions: IS

Explanation: The reply DATA length is insufficient.

S2 X'01005332'

Causing functions: AR, DL, DS, EN, IS, RR, RS, TB, TE

Explanation: The data set was not found.

S3 X'01005333'

Causing functions: TB, TE

Explanation: The session was not found.

S4 X'01005334'

Causing functions: SI

Explanation: The data format has an error.

S5 X'01005335'

Causing functions: CS, IS, QD, SI, TB, TE

Explanation: The server is waiting for an SI request from the forwarding facility.

electronic journal and store-for-forwarding servers

S6 X'01005336'

Causing functions: AR

Explanation: The data set is disabled for adding records.

Action: Issue an EN function.

S7 X'01005337'

Causing functions: RR

Explanation: There are too many records on hold.

S8 X'01005338'

Causing functions: UP

Explanation: No records are held.

S9 X'01005339'

Causing functions: DL

Explanation: The record number is not valid or the record cannot be deleted.

SA X'01005341'

Causing functions: RR

Explanation: The retrieve mode flag is not set to R, D, or U.

Financial printer server

The following codes are returned by the financial printer server. It supports the following document, passbook, and transaction printers:

- IBM 4009 Universal Banking Printer
- IBM 4712 Transaction Printer
- IBM 4722 Document Printer
- IBM 4772 Ink Jet Transaction Printer
- IBM 9055-002 Document Printer (SBCS support)
- IBM 9068-S01 Multi-purpose Passbook Printer (SBCS support)

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page.

For REMS: The read and verify process did not find data. There is an encoding error.

I3 X'01004933'

Causing functions: RD

Explanation: The following could be true:

- No data was found on the magnetic stripe because the stripe is blank, there is no stripe, or the stripe is misplaced on the passbook.
- An incorrect 'Devparm' for REMS was loaded.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of the journal, document, or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed (except for a journal that begins a new page).

I4 X'01004934'

Causing functions: CH, RD, WR

Explanation: For REMS: The passbook has been replaced while a chained sequence of operations was executed. There is no passbook for REMS operations.

I5 X'01004935'

Causing functions: CH, RD, WR

Explanation: The printer stop button has been pressed or the printer cover is open.

Action: Press the start button or insert the document. Try the operation again.

Financial printer server

I6 X'01004936'

Causing functions: CH, CL, DF, EC, LL, OP, RD, WR

Explanation: The printer is busy. The reason could be redirection.

Action: Try again.

I7 X'01004937'

Causing functions: CH, DF, LL, WR

Explanation: Either the end of the journal, passbook, or document was reached, or the document, passbook, or journal has not been inserted yet.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
 - On retries, the line is not printed.
-

I9 X'01004939'

Causing functions: CH, DF, EC, LL, OP, RD, RM, WR

Explanation: The resource is assigned to another workstation or another session.

IR X'01004952'

Causing functions: RD, WR

Explanation: Intervention is required.

Action: Press the A or B button to start printing.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: CH, CL, DF, EC, LL, OP, RD, RM, WR

Explanation: The length is not correct. For the DF function, either the name in DATA is not a defined format description name, or the length is X'0000' or greater than X'0008'.

P3 X'01005033'

Causing functions: CH, CL, DF, EC, LL, RD, RM, WR

Explanation: A previous open function is missing.

P4 X'01005034'

Causing functions: DF

Explanation: Format parameters are not correct. An REMS component is not available.

P6 X'01005036'

Causing functions: AR, DU, WR

Explanation: There is a data (download images) content error. Data goes beyond the end of the display.

P7 X'01005037'

Causing functions: RD, WR

Explanation: The following could be true:

- The passbook is not in an REMS position.
 - An REMS format parameter has not been loaded.
 - The passbook is no longer usable for an REMS operation: it has already been processed by a print operation.
 - The passbook width in format definition is not valid.
-

P8 X'01005038'

Causing functions: AR, CD, DU, WR

Explanation: No operator panel component is available.

P9 X'01005039'

Causing functions: Any except CD, RD

Explanation: An AR function is in progress.

Action: Cancel the function or wait until it finishes processing.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: There is a printer or reader/encoder magnetic stripe (REMS) hardware malfunction.

Action: A printer hardware malfunction can often be cleared by powering off and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'

Causing functions: Any

Explanation: There is a printer malfunction. The printer does not answer a status call (device time out).

Action: Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'

Causing functions: Any

Explanation: This is a DOS error: an error occurred while invoking DOS.

Action: Check if the device driver is installed.

U5 X'01005535'

Causing functions: Any

Explanation: This is a device driver error.

Action: Follow service reporting procedures.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver is not installed.

U7 X'01005537'

Causing functions: OP

Explanation: The printer ID byte is unknown.

U8 X'01005538'

Causing functions: Any

Explanation: This is a server internal error.

Action: Obtain software service.

U9 X'01005539'

Causing functions: Any

Explanation: A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

FREE program

FREE program

The codes that are returned by the FREE program are described in “LAN and router” on page 134.

IBM 4748 printer server

The following codes are returned by the 4748 printer server. This server supports the following printers:

- IBM 4748 Document Printer
- IBM 9055-001 Document Printer (DBCS support)
- IBM 9068-D01 Multi-purpose Passbook Printer (DBCS support)

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of the document or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.

- On retries, the line is not printed.

I5 X'01004935'

Causing functions: CH, WR

Explanation: The printer stop button has been pressed, the printer cover is open, or the document was not inserted.

Action: Press the start button, close the printer cover, or insert the document. Try the operation again.

I7 X'01004937'

Causing functions: CH, DF, LL, WR

Explanation: The end of the document or passbook was reached. No writing is performed.

I8 X'01004938'

Causing functions: CH, WR

Explanation: There is a server time out. The printer does not answer completion.

Action: Try the request again.

I9 X'01004939'

Causing functions: CH, DF, EC, LD, LL, OP, WR

Explanation: The resource is assigned to another workstation.

ID X'01004944'

Causing functions: Any

Explanation: The printer's cover is open

Action: Close the cover.

4748 printer server

IG X'01004947'

Causing functions: RD

Explanation: There has been a longitudinal redundancy check (LRC) error, or a parity error; or the data format is invalid.

Action: Correct any data formatting error and retry the request. If the problems persists, obtain service.

IR X'01004952'

Causing functions: WR

Explanation: Intervention is required.

Action: Press the A or B button to start printing.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: CH, CL, DF, EC, LD, LL, OP, WR

Explanation: The length is not correct.

P3 X'01005033'

Causing functions: CH, DF, EC, LD, LL, WR

Explanation: A previous open function is missing.

P4 X'01005034'

Causing functions: DF, LD

Explanation: The format parameters are not correct.

P6 X'01005036'

Causing functions: WR

Explanation: There is a data content error.

PZ X'0100505A'

Causing functions: Any

Explanation: The parameter length is not valid.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: There is a printer hardware malfunction.

Action: A printer hardware malfunction can often be cleared by powering off and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'**Causing functions:** Any**Explanation:** There is a printer malfunction. The printer does not answer a status call (device time out).**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** This is a DOS error: an error occurred while invoking DOS.**Action:** Make sure the device driver is installed.

U5 X'01005535'**Causing functions:** Any**Explanation:** There is a device driver error.**Action:** Follow the service reporting procedures.

U6 X'01005536'**Causing functions:** OP**Explanation:** The device driver is not installed.

U7 X'01005537'**Causing functions:** OP**Explanation:** A printer ID byte is unknown.

U8 X'01005538'**Causing functions:** Any**Explanation:** There is a server internal error.**Action:** Obtain software service.

U9 X'01005539'**Causing functions:** Any**Explanation:** A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

LAN and router

LAN and router

The following codes are returned when errors are detected by the LANDP workgroup server or the router. The errors can occur in any function request to any server.

X'01000402'

Explanation: The application is not initialized.

Action: Issue the process supervisor local function IN.

X'01000404'

Explanation: The SPV.EXE program is not loaded.

Action: Load the SPV.EXE program.

X'01000405'

Explanation: There is not enough memory to process the request.

X'0100040A'

Explanation: The version ID in the connectivity programming request block (CPRB) passed to the computer supervisor is not supported by the resident portion of the computer supervisor, or the CPRB length is not valid.

Action: Correct the version ID or the CPRB length.

X'01000602'

Explanation: The request PARMLIST length is not correct. It must be the length specified for each function and can never be longer than X'E09C'.

X'01000603'

Explanation: The sum of the request or reply DATA and the PARMLIST length exceeds X'E09C'.

X'01000604'

Explanation: The reply PARMLIST length is not correct, or its address is invalid. The length must be that specified for each function and can never be longer than X'E09C'. The following could be true:

- The reply PARMLIST address is not valid and the replied PARMLIST length is nonzero.
- The reply DATA address is not valid and the replied DATA length is nonzero.

- The reply PARMLIST length is shorter than the replied length.
- The reply DATA length is shorter than the replied length.

Action: Correct the values.

X'01000606'

Explanation: The verb type in the CPRB passed to the computer supervisor is not recognized.

Action: Correct the verb type.

X'0100060C'

Explanation: The request PARMLIST address is not valid. The request PARMLIST address is X'0000' and the request parameter length is nonzero.

Action: Correct the request PARMLIST address.

X'0100060E'

Explanation: The request DATA address is not valid. The request DATA address is X'0000' and the request DATA length is nonzero.

Action: Correct the request DATA address.

X'01000610'

Explanation: The reply PARMLIST address is not valid. The reply PARMLIST address is X'0000' and the reply PARMLIST length is nonzero.

Action: Correct the reply PARMLIST address.

X'01000612'

Explanation: The reply DATA address is not valid. The reply DATA address is X'0000' and the reply DATA length is nonzero.

Action: Correct the reply DATA address.

L0 X'01004C30'

Explanation: The request DATA length or the reply DATA length exceeds X'E09C'.

L1 X'01004C31'

Explanation: The resource is not defined in the resources table of this workstation.

Action: Check the configuration record.

L2 X'01004C32'

Explanation: There is no session with the called server.

Action: Connect the workstation where the requested server is installed.

L3 X'01004C33'

Explanation: A session is not defined. You are attempting to send a request to a workstation not defined in the LANDP workgroup configuration session table.

Action: Check the configuration record.

L4 X'01004C34'

Explanation: Irrecoverable error from a remote workstation.

Action: Restart the workstation where the called server is installed.

L5 X'01004C35'

Explanation: The server is not loaded.

Action: Check the initialization procedures.

L6 X'01004C36'

Explanation: The system detected an irrecoverable error from a local workstation.

Action: Restart the workstation.

L7 X'01004C37'

Explanation: The LAN adapter is not installed or the LAN support program is not loaded.

L8 X'01004C38'

Explanation: There is no response from the server. The time-out value specified during configuration has been exceeded.

Action: Try the request again, check the status of the workstation, or increase the time-out value.

L9 X'01004C39'

Explanation: A LAN hardware failure has occurred.

Action: Try the following:

- Review all LAN connections and power-on status.
 - Correct any connection problems and start again, reloading any required LANDP components.
-

LA X'01004C41'

Explanation: The maximum number of supported applications was exceeded. Up to eight applications are supported at the same time.

Action: Force an EJ function from any of the initialized applications to initialize a new one.

LB X'01004C42'

Explanation: The CPRB format or optional control block format is not valid.

LD X'01004C44'

Explanation: Request inside hardware interrupt. This code is obsolete for LANDP for OS/2 Version 3.

LE X'01004C45'

Explanation: The LAN server is not loaded.

LF X'01004C46'

Explanation: There is not enough free space in the buffer pool of the local workstation to process the request.

LG X'01004C47'

Explanation: There is not enough free space in the buffer pool of the remote workstation to process the request.

LH X'01004C48'

Explanation: A response was received after the time-out value specified during configuration had been exceeded. This code is obsolete for LANDP for OS/2 Version 3.

LI X'01004C49'

Explanation: Illegal function code.

LAN and router

LJ X'01004C4A'

Explanation: The system detected an access attempt without authorization level F.

LK X'01004C4B'

Explanation: The system detected an attempt to access protected resources from an unexpected workstation.

Action: Sign on to the system manager from this workstation.

LL X'01004C4C'

Explanation: A 'GETRPLY' reply handle is not valid. The reply handle is zero or there is no 'RMTREQ NoWait' outstanding with this handle.

Action: Correct the value.

LM X'01004C4D'

Explanation: An SPV local function was called using 'RMTREQ NoWait'.

U7 X'01005537'

Explanation: The SPV.EXE program is not loaded.

Action: Load the SPV.EXE program.

Local resource manager

The following codes are returned by the local resource manager. The local resource manager returns two types of codes: LAN router and server.

See “LAN and router” on page 134 for LAN router return codes. See the following for server return codes.

Successful operation

X'00000000'

Causing functions: Pending functions

Explanation: The function was accepted. It is processed when the current listing has finished.

X'00000000'

Causing functions: CC

Explanation: The previous pending function was canceled. The CC function has been processed successfully.

X'00000000'

Causing functions: Other functions

Explanation: The function was processed. The reply area reflects the new status.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The resource in request PARMLIST is not defined.

Action: Check customization. Also see code L1 under “LAN and router” on page 134.

I2 X'01004932'

Causing functions: Any

Explanation: The resource in request PARMLIST is not loaded.

Action: Check the initialization procedure. Also see code L5 under “LAN and router” on page 134.

Programming errors

P1 X'01005031'

Causing functions: Any

Explanation: The function code is not valid.

P2 X'01005032'

Causing functions: Any

Explanation: The length of request or reply PARMLIST or DATA is not valid for the function code.

P3 X'01005033'

Causing functions: Any

Explanation: The request PARMLIST fields are not valid: the format is not valid or the data is unknown.

Action:

- Make sure the range in fields is valid.
- Make sure the host or application identifiers are those assigned at customization time.

P4 X'01005034'

Causing functions: Any

Explanation: The request DATA fields are not valid: the format is not valid or the data is unknown.

Action: Try the following:

- Make sure the values in fields are valid.
- Make sure the resource names have been assigned to 'PRTMGR' at customization time.

Local resource manager

P5 X'01005035'

Causing functions: Any, except GS, CM

Explanation: The function was not accepted because status is incompatible with the function. The function was not processed.

Action: Sometimes the current resource status is already the one requested by the function. Check the application program logic. The EC return code applies to all, except X.25 communication.

P6 X'01005036'

Causing functions: Any, except CC, EC, EL, GS, SA, SE

Explanation: The function was not accepted because a previous function is pending to be processed. The function is not processed.

Action: Check the application program logic.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: An irrecoverable local error has occurred. The function was not processed.

Action: Restart the workstation. Also see code L6 under "LAN and router" on page 134.

U2 X'01005532'

Causing functions: Any

Explanation: An EHCLRMGR program error has occurred. The function was not processed.

Action: Contact a support representative. Also see the codes under "LAN and router" on page 134, excluding OK, L1, L5, and L6.

U3 X'01005533'

Causing functions: Any

Explanation: A resource error has occurred. The function was not processed.

A function call from the local resource manager to the requested resources failed. This error occurs when the local resource manager return code is P1 or P2, or when the replied DATA length is greater than the reply DATA length.

Action: Contact a support representative.

U4 X'01005534'

Causing functions: Any

Explanation: A resource error has occurred. The function was not processed.

A function call from the local resource manager to the requested resources failed. This error occurs when the requested resource return code is P3.

Action: Contact a support representative.

U5 X'01005535'

Causing functions: CA, CM

Explanation: There is a disk error or a file was not found. An error occurred while trying to update the file OPE.CFG. The CA and CM functions were processed, but not in the fixed mode. This error occurs when the requested resource return codes are P4, P5, or P6.

Action: Make sure the file OPE.CFG exists, the disk drive is ready, and no I/O errors exist.

U6 X'01005536'

Causing functions: Any

Explanation: A resource error has occurred. The function was not processed.

A function call from the local resource manager to the required resources failed. This error occurs with any of the requested resource return codes, excluding OK, P1, P2, P3, P4, P5, and P6.

Action: Contact a support representative.

Magnetic stripe reader/encoder (MSR/E) server

The following codes are returned by the magnetic stripe reader/encoder (MSR/E) server. It supports the following devices:

- IBM 4717 Magnetic Stripe Reader
- IBM 4717 Magnetic Stripe Reader/Encoder
- IBM 4777 Magnetic Stripe Reader
- IBM 4777 Magnetic Stripe Reader/Encoder

Note: This server also supports the MSR/E component of the IBM 4778 PIN Pad Magnetic Stripe Reader. See “Personal identification number (PIN) pad server” on page 145 for a list of PIN pad return codes.

Successful operation

X'00000000'

Causing functions: CH, CL, DV, EC, KL, OP, RD

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR, WR

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: AR, OP, WR

Explanation: The device cable is broken or the device is not attached.

Action: Check the connection cable.

I3 X'01004933'

Causing functions: OP

Explanation: This personal computer system unit model is not supported by the MSR/E device.

Action: See the *LANDP Introduction and Planning* book for information about selecting hardware components and “Bibliography” on page 423 for publications about specific MSR/E devices.

I5 X'01004935'

Causing functions: CH, RD

Explanation: A previous function is in process.

Action: Try again after the function finishes processing.

I8 X'01004938'

Causing functions: OP

Explanation: There are no more handles.

I9 X'01004939'

Causing functions: Any

Explanation: The resource is already assigned.

IA X'01004941'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver error.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: Any

Explanation: A length is not correct.

Action: Check the data length parameters.

P3 X'01005033'

Causing functions: AR, AT, CH, CL, DV, EC, KL, RD, WR, WT

Explanation: A previous open is missing.

P4 X'01005034'

Causing functions: AT, DV, WR

Explanation: A parameter is not valid.

Action: Check the contents of DATA.

P6 X'01005036'

Causing functions: AR, AT, CH, WR, WT

Explanation: A character is not valid. Data passed does not agree with the parameters loaded in the MSR/E.

P7 X'01005037'

Causing functions: CH, RD

Explanation: There is no data pending to pass to the application, or there is no status pending to pass to the application.

P8 X'01005038'

Causing functions: AR, AT, CL, DV, WR, WT

Explanation: A previous function is in process.

Action: Cancel the function or wait for it to finish processing.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: A general failure has occurred.

U2 X'01005532'

Causing functions: Any

Explanation: There is no response from the MSR/E device.

Action: Check the hardware installation. If the problem persists, obtain service.

U3 X'01005533'

Causing functions: Any

Explanation: A transmission error has occurred, or the MSR/E device is attached to the wrong connector or adapter.

Action: Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'

Causing functions: Any

Explanation: A device self-test failure or a DOS operating system error has occurred.

Action: Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'

Causing functions: Any

Explanation: An MSR/E device internal error has occurred.

Action: Run the personal computer system and MSR/E device diagnostic programs, and then follow the recommended action.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver error.

Native X.25 server

Native X.25 server

The following codes are returned by the native X.25 server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: RH, SH

Explanation: No session is established.

Action: A CN function must be requested.

I2 X'01004932'

Causing functions: CN, RH, RL, SH

Explanation: The modem is powered off or the communication adapter or cabling are malfunctioning.

Action: Check the equipment.

I3 X'01004933'

Causing functions: CN

Explanation: No circuits are available.

Programming errors

P0 X'01005030'

Causing functions: CL, CN, GS, OP, RL, RH, SH

Explanation: The process ID is not correct. The most probable cause is that a different application program has requested the OP or CN function.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: RH

Explanation: There is a length error. The length specified in the CPRB is insufficient for a message from the host. The message has been truncated to the specified length.

Action: Check the program.

P2 X'01005032'

Causing functions: SH

Explanation: There is a length error. The length specified in the CPRB must be between X'0001' and X'0400'.

Action: Check the program.

P2 X'01005032'

Causing functions: DC, QC

Explanation: There is a length error. The length specified in the CPRB must be X'0066' or X'006A'.

Action: Check the program.

P2 X'01005032'

Causing functions: CN, RL

Explanation: There is a length error. The length specified in the CPRB must be X'0000'.

Action: Check program.

P3 X'01005033'

Causing functions: RH

Explanation: There are no pending messages.

P3 X'01005033'**Causing functions:** CN, DC, QC, RL, SH**Explanation:** The input/output buffers are full: the SH function is rejected.**Action:** Try the following:

- Check the program logic and read queued messages before sending more.
- Delay until other programs or the communication adapter have freed some buffers.
- Allocate additional communication data link buffers.

P4 X'01005034'**Causing functions:** CN**Explanation:** A connection is not possible. A call message is incomplete.

P5 X'01005035'**Causing functions:** CN**Explanation:** A previous CN is in progress, but a circuit is not yet established.

P6 X'01005035'**Causing functions:** RL**Explanation:** No previous CN was requested, an RL function is in progress, or the RL function cannot be accepted now.**Action:** Try again.

P6 X'01005036'**Causing functions:** SH**Explanation:** A message sent is accepted with an indication that the input buffer contains messages to be read.**Action:** Check the program. All answers should be read before sending new messages.

P7 X'01005037'**Causing functions:** CN**Explanation:** A CN function has been requested for an incoming circuit, but no call has been received for this session.**Action:** On an incoming circuit, a CN function should only be requested after an RH function with flag1 set to “f” has been received.

P8 X'01005038'**Causing functions:** CN, DC**Explanation:** The circuit was previously established.

P9 X'01005039'**Causing functions:** Any**Explanation:** The command was rejected. The session identifier specified in the request PARMLIST is not valid.**Action:** Check VCH.CFG, PIPE.CFG, and the configuration parameters.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U4 X'01005534'**Causing functions:** CN, RH, RL, SH**Explanation:** There is a communication adapter malfunction.

U6 X'01005536'**Causing functions:** Any**Explanation:** A software problem was detected. The wrong data was defined in a call packet of the VCM.CFG file or in a DC (X.25) function call.

U8 X'01005538'**Causing functions:** CN, RH, RL, SH**Explanation:** The X25DLC.EXE program is not loaded.

Native X.25 server

Clear and reset packets

Native X.25 clear and reset packets can be generated and sent to the network by X.25 adapter support, X.25 coprocessor support, or the LANDP server.

Codes used in clear or reset packets sent by the X.25 adapter are explained in the *X.25 Adapter User's Guide*. The cause code is always 00.

Codes used in clear or reset packets sent by the X.25 coprocessor are processed in accordance with Telecommunication Standardization Sector (TSS) standards.¹

Codes used in clear and reset packets sent by the LANDP server are as follows:

- X'59'** Data received before qualified logical link control (QLLC) connection established.
- X'E1'** Buffer pool empty: probable lost data.
- X'E2'** Connection busy: working with somebody else.
- X'E3'** Connection not accepting incoming calls.
- X'E4'** Application program name unknown.
- X'E5'** Call cleared from application program.
- X'E6'** Buffer full in local personal computer: session terminated.
- X'E9'** Application program does not accept calls.
- X'EA'** Reset received in an SVC.

The cause code is always set to zero.

¹ Formerly Comite Consultatif International Telegraphique et Telephonique or International Consultative Committee on Telegraph and Telephone (CCIT).

Personal identification number (PIN) pad server

The following codes are returned by the personal identification number (PIN) pad server. It supports the following devices:

- IBM 4718 PIN Key Pad
- IBM 4778 PIN Pad Magnetic Stripe Reader

Note: The PIN pad server also supports the magnetic stripe reader/encoder component of the 4778 device. It issues the same return codes as the MSR/E server, except for those codes caused by encoding functions, which are not supported by the 4778 PIN pad MSR device. See “Magnetic stripe reader/encoder (MSR/E) server” on page 139 for a list of MSR/E return codes.

Successful operation

X'00000000'

Causing functions: CL, DV, EC, GA, IV, OP, IV, KL, LM, LK, LP, OP, RD, RN, VA, WD

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR, AT

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: AR, OP, RD

Explanation: The device cable is broken or the device is not attached.

Action: Check the connection cable.

I3 X'01004933'

Causing functions: AR, GA, IV, LM, LK, LP, VA

Explanation: A referenced key is not loaded.

I4 X'01004934'

Causing functions: RD

Explanation: The PIN is not valid.

I5 X'01004935'

Causing functions: RD

Explanation: A previous function has not completed.

Action: Try again.

I6 X'01004936'

Causing functions: RD (AR option M)

Explanation: A button that is not valid was pressed.

I7 X'01004937'

Causing functions: AR (Options C and E)

Explanation: This function cannot be used in clear mode.

Action: Enter or load the master key in encrypted mode.

I8 X'01004938'

Causing functions: OP

Explanation: There are no more handles.

I9 X'01004939'

Causing functions: Any

Explanation: The resource is assigned to another personal computer.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: Any

Explanation: A length is not correct.

Action: Check the data length parameters.

P3 X'01005033'

Causing functions: AR, AT, CL, DV, EC, GA, IV, KL, LM, LK, LP, RD, RN, VA, WD

Explanation: A previous open is missing.

P4 X'01005034'

Causing functions: AR, DV, GA, IV, LM, LK, LP, VA

Explanation: A flag is not valid.

Action: Check the PARMLIST flags.

P5 X'01005035'

Causing functions: AR, GA, LK, LM, VA

Explanation: The key parity is not valid.

Action: Correct the key.

P6 X'01005036'

Causing functions: AR

Explanation: A magnetic stripe reader track was not selected.

P6 X'01005036'

Causing functions: LP

Explanation: A decimalization table is not valid.

Action: Check the contents of DATA.

P6 X'01005036'**Causing functions:** VA**Explanation:** The message authentication code (MAC) is not valid.**Action:** Correct the contents of DATA.

P7 X'01005037'**Causing functions:** RD**Explanation:** There is no data pending to pass to the application.

P8 X'01005038'**Causing functions:** AR, AT, CL, DV, GA, IV, LM, LK, LP, RN, VA**Explanation:** A previous function is in process.**Action:** Cancel the function or wait until it finishes processing.

P9 X'01005039'**Causing functions:** AR, AT, DV, EC, OP, RD, WD**Explanation:** The function is not supported. Magnetic stripe support is not attached or loaded, or a liquid crystal display (LCD) is not available.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'**Causing functions:** Any**Explanation:** A general failure has occurred.

U2 X'01005532'**Causing functions:** Any**Explanation:** There is no response from the PIN pad device.**Action:** Check the hardware installation. If the problem persists, obtain service.

U3 X'01005533'**Causing functions:** Any**Explanation:** A transmission error has occurred, or the PIN pad device is attached to the wrong connector or adapter.**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** A device self-test failure or DOS operating system error has occurred.**Action:** Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'**Causing functions:** AR, IV, KL, LM, LK, LP, RD, RN**Explanation:** A PIN pad device internal error has occurred.**Action:** Run the personal computer system and PIN pad device diagnostic programs, and then follow the recommended action.

U6 X'01005536'**Causing functions:** OP**Explanation:** The device driver name is not correct, the device driver is not installed, or there is a device driver installation error.

Printer manager server

Printer manager server

The following codes are returned by the printer manager server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I9 X'01004939'

Causing functions: AC

Explanation: The function was denied. The requested parallel printer port is in use by another requester.

Action: Try again later.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P3 X'01005033'

Causing functions: RL

Explanation: The function was ignored. The previous AC function for the same parallel printer port is missing.

P6 X'01005036'

Causing functions: AC, RL

Explanation: The adapter for the requested parallel printer port is not installed.

P9 X'01005039'

Causing functions: AC, RL

Explanation: The function was denied. The name in the resource origin field is unknown to the printer manager server.

Action: Correct the name and request the function again, or rerun the customization program and define the requester as a user of the printer manager server.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Remote change management services (RCMS)

The following codes are returned by remote change management services (RCMS).

X'082FF001'

Explanation: A logical block is out of range for recovery with the RETRIEVE command.

X'082FF004'

Explanation: No status is available.

X'0833F001'

Explanation: A logical block is out of range for recovery with the ADD or REPLACE DATA command.

X'328A0108'

Explanation: Unknown command.

X'32B00001'

Explanation: This is an operating system error for the ADD DATA command.

X'32B00002'

Explanation: This is a cryptographic error for the ADD DATA command.

X'32B00202'

Explanation: The ADD DATA command was rejected because the file name already exists.

X'32B10001'

Explanation: This is an operating system error for the REPLACE DATA command.

X'32B10002'

Explanation: This is a cryptographic error for the REPLACE DATA command.

X'32B10101'

Explanation: This is a coding or critical error.

X'32B20001'

Explanation: This is an operating system error for the DELETE command.

X'32B20002'

Explanation: This is a cryptographic error for the DELETE command.

X'32B20104'

Explanation: 'Delete' file was rejected. The file does not exist or the path cannot be found.

X'32B40204'

Explanation: 'Delete' file is not authorized.

X'32B50001'

Explanation: This is an operating system error for the RETRIEVE command.

X'32B50002'

Explanation: This is a cryptographic error for the RETRIEVE command.

X'32B50003'

Explanation: 'Retrieve' names was rejected because the directory is empty.

X'32B50201'

Explanation: 'Retrieve' file was rejected. The file does not exist or no path was found.

X'32B60001'

Explanation: This is an operating system error for the RETRIEVE BY CATALOG command.

X'32B60002'

Explanation: This is a cryptographic error for the RETRIEVE BY CATALOG command.

RCMS

X'32B60105'

Explanation: The RETRIEVE BY CATALOG was rejected. There is no file name in the specified catalog.

X'32B60201'

Explanation: The RETRIEVE BY CATALOG was rejected because the catalog cannot be found.

X'32B70001'

Explanation: This is an operating system error for the CLIST command.

X'32B70002'

Explanation: This is a cryptographic error for CLIST command.

X'32B70003'

Explanation: The 'CLIST' file is too big or run # overflow.

X'32B70004'

Explanation: The RCMS.ACK file cannot be accessed.

X'32B70005'

Explanation: The CLIST processing failed at the node.

X'32B70007'

Explanation: The 'CLIST' was executed but COMMAND.COM space was not recovered.

X'32B80001'

Explanation: This is an operating system error for the SEND MSG command.

X'32B80002'

Explanation: This is a cryptographic error for the SEND MSG command.

X'32B80003'

Explanation: Phase was not found.

X'32B80004'

Explanation: This is a system manager error for the SEND MSG command.

X'32B90001'

Explanation: This is an operating system error for the QUERY command.

X'32B90002'

Explanation: This is a cryptographic error for the QUERY command.

X'32B90003'

Explanation: Not all the acknowledge characters could be deleted for the QUERY command.

X'32BA0001'

Explanation: An INITSELF contents error occurred while releasing a held phase.

X'32BA0002'

Explanation: An operating system error occurred while updating a plan details file.

X'32BA0003'

Explanation: An operating system error occurred while getting a phase to process. Held phases remote release stopped.

X'32BA0004'

Explanation: An operating system error occurred while updating a plan details file and getting a phase to process. Held phases remote release stopped.

X'32BA0005'

Explanation: A translation error occurred while processing a plan details file record. Held phases remote release stopped.

X'32BA0006'

Explanation: An operating system error occurred while updating a plan details file and a translation error occurred while processing a plan details file record. Held phases remote release stopped.

X'32BA0007'

Explanation: An operating system error occurred while getting a phase to process, and the phase could not be found. Held phases remote release stopped.

X'32BA0008'

Explanation: A translation error occurred while processing a plan details file record, and the phase could not be found. Held phases remote release stopped.

X'32BB0001'

Explanation: This is a translation error.

X'32E90002'

Explanation: The cryptographic process failed and first-in-chain (FIC) could not be decrypted to get the command.

X'32E90201'

Explanation: The RCMS.LNF file cannot be found.

X'32E90202'

Explanation: The logical name is not valid.

X'32E90203'

Explanation: A negative response was received while sending data.

X'32E90204'

Explanation: A cancel request was received while receiving data.

X'32E90205'

Explanation: The protocol is not valid.

X'32E90206'

Explanation: The command ended because the session has been lost. RCMS cannot determine the cause of the session loss.

Action: Check LANDP, Communications Manager, or VTAM® traces for possible causes.

Shared-file server

Shared-file server

The following codes are returned by the shared-file server.

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

X'00000000'

Causing functions: QP

Explanation: The program control block (PCB) information has been returned.

Action: None required.

X'00000000'

Causing functions: RH

Explanation: The header information has been returned.

Action: None required.

AD X'01004144'

Causing functions:

Explanation: The function is not supported.

AD X'01004144'

Causing functions: FU, GU, HU, KU

Explanation: A search parameter is not correct or cannot be found.

BL X'0100424C'

Causing functions: EX, HN, HP, HU, IS, KN, KP, KU

Explanation: The shared file is blocked by another workstation operating in batch mode, or another application is holding the database description (DBD) in exclusive use.

Action: Rollback is recommended.

CE X'01004345'

Causing functions: Any

Explanation: Critical Error: The first byte of DATA contains the return code.

Action: See "Critical errors" on page 155 for more information.

CO X'0100434F'

Causing functions: BT, OB

Explanation: Job start is not allowed. The system is in the process of closing.

DA X'01004441'

Causing functions: RP

Explanation: An attempt was made to replace a record with keys that cannot be changed. Updating records with keys that have this attribute is not allowed.

DB X'01004442'

Causing functions: CB, OB

Explanation: Batch opening was denied because the shared-file server is open for online work.

DH X'01004448'

Causing functions: DL, HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The shared file must be on hold for this batch request.

DJ X'0100444A'

Causing functions: DL, RP

Explanation: The record is not on hold.

DO X'0100444F'

Causing functions: BT, ET, OO

Explanation: Online openings are denied because the shared-file server is open for batch requests.

E1 X'01004531'

Causing functions: CB, CO, CP, DL, ET, IS, RB, RP, ZD

Explanation: Writing to, or reading from (RB only), the first log file has failed. The operation is not performed.

Action: Try the operation again. See "Critical errors" on page 155 and "Primary input/output errors" on page 156 for more information.

E2 X'01004532'

Causing functions: CB, CO, CP, DL, ET, IS, RB, RP, ZD

Explanation: Writing to, or reading from (RB only), the second log file has failed. The operation is not performed.

Action: Try the operation again. See "Critical errors" on page 155 and "Primary input/output errors" on page 156 for more information.

EP X'01004550'

Causing functions: Any

Explanation: A primary I/O error has occurred. This is an irrecoverable failure.

Action: Try adding the DOS program SHARE to the AUTOEXEC.BAT.

You may also be able to prevent the error by adding the /F:zz parameter to the SHFILE loading statement in AUTOFBSS, specifying a large value for zz; this sets the maximum number of files that can be open at a time. For more information see the *LANDP Installation and Customization* book.

FD X'01004644'

Causing functions: Any, except GF, SR, TS

Explanation: The function was denied because a GF function has not been received.

GB X'01004742'

Causing functions: FN, FP, GN, GP, HN, HP, KN, KP

Explanation: Either the end of the shared file has been reached while processing an FN, GN, HN, or KN function, or the beginning of the shared file has been reached while processing an FP, GP, HP, or KP function.

The next FN, GN, HN, or KN function returns the first

record. The next FP, GP, HP, or KP function returns the last record.

GE X'01004745'

Causing functions: FU, GU, HU, KU

Explanation: The record with the specified key does not exist.

IE X'01004945'

Causing functions: Any

Explanation: An internal error has occurred.

Action: Request support.

II X'01004949'

Causing functions: IS, RP

Explanation: The following could be true:

- IS function: An attempt was made to insert a duplicate of a key that must be unique. This is not allowed.
 - RP function: An attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.
-

LI X'01004C49'

Causing functions: RB

Explanation: The log file is inhibited.

Action: A rollback operation is not possible.

MI X'01004D49'

Causing functions: QP

Explanation: More information is pending.

NA X'01004E41'

Causing functions: CP, DL, ET, HN, HP, HU, IS, KN, KP, KU, RB, RP

Explanation: A transaction has not been opened.

NB X'01004E42'

Causing functions: Any, except GF, OB, OO, RF, SR, TS

Explanation: The function was denied because a batch process has not been opened.

Shared-file server

NC X'01004E43'

Causing functions: TS

Explanation: The shared files have not been closed. A workstation ID and a process ID are in request DATA for open transactions.

NO X'01004E4F'

Causing functions: BT, CP, DL, ET, FN, FP, FU, GN, GP, GU, HN, HP, HU, IP, IS, RB, RP, KN, KP, KU

Explanation: The function is denied because online mode has not been initialized.

NP X'01004E50'

Causing functions: Any

Explanation: The program control block (PCB) does not exist, or the PCB is not blanks or nulls. For the QP function, the wrong PCB name was requested.

NS X'01004E53'

Causing functions: OS

Explanation: No more sessions are available.

NS X'01004E53'

Causing functions: Any

Explanation: No session has been opened with the supplied session identifier.

NT X'01004E54'

Causing functions: Any

Explanation: The workstation is not customized to use the shared-file server.

OP X'01004F50'

Causing functions: Any

Explanation: The log file is not open. The file is remote and was not accessible at server loading time, or the file does not exist and you must run the GENLOG utility program.

Action: Start the OPENLOG utility to retry opening the log file. See the *LANDP Servers and System Management* book for more information.

PI X'01005049'

Causing functions: GF, RF

Explanation: The parameter for a GF or RF function is not valid.

- GF function: The request DATA length must be at least X'0001' and have 'O' and 'B' in the first byte of the data area.
- RF function: The request DATA length must be X'0000' or greater than X'0000' and have 'b', 'N', or 'F' in the first byte of the data area. (b represents a space character.)

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

RL X'0100524C'

Causing functions: HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The record is locked by another workstation. For the RP function, an attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.

Action: The following are recommended actions based on the reply DATA values:

Value	Action
R	Try again.
A	Rollback if you want to follow the deadlock avoidance protocol. Try again if you want to follow the deadlock detection protocol.
D	Rollback (deadlock detected).

TL X'0100544C'

Causing functions: Any

Explanation: The specified request DATA length does not match the expected length for the requested function.

TL X'0100544C'

Causing functions: FU, GU, HU, KU

Explanation: When using direct indexed access mode, this code could be returned when the request DATA length is set to 1, instead of 0.

TO X'0100544F'**Causing functions:** HL, IL**Explanation:** A transaction is open.**Action:** Close the transaction or close batch.

YA X'01005941'**Causing functions:** BT**Explanation:** A transaction is already open.

YB X'01005942'**Causing functions:** OB**Explanation:** The shared file is already open in batch mode.

YO X'0100594F'**Causing functions:** OO**Explanation:** The shared file is already open in online mode.

YP X'01005950'**Causing functions:** GF**Explanation:** The shared file is already open.

Critical errors

When a critical error occurs, as indicated by return codes X'01004345', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:
 - X'96'** Disk is write-protected.
 - X'97'** Unknown unit.
 - X'98'** Drive is not ready.
 - X'99'** Unknown command.
 - X'9A'** Cyclic redundancy check (CRC) error.
 - X'9B'** Bad drive request structure length.
 - X'9C'** Disk seek error.
 - X'9D'** Unknown media type.
 - X'9E'** Sector not found.
 - X'A0'** Device write fault.
 - X'A1'** Device read fault.
 - X'A2'** Hardware failure.
 - X'A3'** Sharing violation.
 - X'A4'** Lock violation.
 - X'A5'** Disk change not valid.
 - X'A6'** File control block (FCB) unavailable.
 - X'A7'** Sharing buffer overflow.
- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCIIZ string consisting of a maximum of 80 bytes. An ASCIIZ string is a normal string that ends with a null character.

When a critical error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default drive and directory.

Shared-file server

The file name is in the format:

HHmmsshh.TRC

where:

HH is hours.
mm is minutes.
ss is seconds.
hh is hundredths of seconds.

IBM support representatives request the trace file *HHmmsshh*.TRC if you contact them for assistance.

Primary input/output errors

When primary I/O errors occur, as indicated by return codes X'01004550', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:
 - X'02' File not found.
 - X'03' Path not found.
 - X'04' Too many open files.
 - X'05' File access denied.
 - X'06' Handle not valid.
 - X'0C' Access code (file mode) not valid.
 - X'0F' Drive number not valid.
 - X'64' Disk read error (attempt to read beyond end-of-file).
 - X'65' Disk is full.
 - X'66' File not assigned.
 - X'67' File not open.
 - X'DE' Transferred count not correct.
- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCII string consisting of a maximum of 80 bytes. An ASCII string is a normal string that ends with a null character.

When a primary I/O error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default drive and directory.

The file name is in the format *HHmmsshh*.TRC, where:

HH is hours.
mm is minutes.
ss is seconds.
hh is hundredths of seconds.

If you contact IBM for assistance, please supply the trace file *HHmmsshh*.TRC.

Shared-file utility programs

The following codes are returned by the shared-file BACKUP and RESTORE utility programs.

X'00' **(000)**

Explanation: The program ended successfully.

Applies to: Backup, Restore

X'01' **(001)**

Explanation: Parameters are not valid.

Applies to: Backup, Restore

X'92' **(146)**

Explanation: Old and new log files cannot be chained.

Applies to: Restore

X'96' **(150)**

Explanation: The log file does not exist.

Applies to: Backup, Restore

X'97' **(151)**

Explanation: An I/O error has occurred.

Applies to: Backup, Restore

X'98' **(152)**

Explanation: Transactions are open.

Applies to: Backup

X'A0' **(160)**

Explanation: The log file is empty.

Applies to: Backup

X'A1' **(161)**

Explanation: The log file is in use by another process.

Applies to: Backup, Restore

X'A2' **(162)**

Explanation: The old log file does not exist.

Applies to: Restore

X'A8' **(168)**

Explanation: A log file is an old version.

Action: Try running the GENLOG utility program to create a new log file.

Applies to: Backup, Restore

X'AD' **(173)**

Explanation: Log file LOG2.DAT was not found.

Applies to: Backup, Restore

X'AE' **(174)**

Explanation: Log file LOG.DAT is not at the correct level of LOG2.DAT.

Applies to: Backup, Restore

X'AF' **(175)**

Explanation: Log file LOG2.DAT is not at the correct level of LOG.DAT.

Applies to: Backup, Restore

X'B0' **(176)**

Explanation: Log file LOG.DAT is truncated. Forward recovery cannot be performed.

Applies to: Restore

X'B1' **(177)**

Explanation: Some data might not have been updated to data files, or data in the log file is needed by a parent server.

Applies to: Backup

SNA server

The following codes are returned by the SNA server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: RH, SH

Explanation: An LU-LU session is not established.

I2 X'01004932'

Causing functions: CL, CN, RH, RL, SH, OP

Explanation: The modem is powered off or the communication adapter or cabling are malfunctioning.

Action: Check the equipment.

Programming errors

P0 X'01005030'

Causing functions: CL, GS, OP, RH, RL, SH

Explanation: A previous CN function was not requested or an RL is in progress.

P0 X'01005030'

Causing functions: DC, QC

Explanation: The LU is pooled and contact has not been requested.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported. The function code is not correct or the combination of function code, parameters, and data is not consistent or not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: RH

Explanation: Length error. The reply DATA length specified in the CPRB is insufficient for a message from the host. The message has been truncated to the specified length.

Action: Check the program.

P2 X'01005032'

Causing functions: SH

Explanation: Length error. The request DATA length specified in the CPRB must be between X'0000' and X'1000'. See the *LANDP Programming Reference* book for more specific information.

Action: Check the program.

P2 X'01005032'

Causing functions: CL, OP

Explanation: Length error. The request DATA length specified does not correspond with that specified in the OP or CL function, or an INITSELF or TERMSELF was specified but was invalid.

Action: Check the program.

P2 X'01005032'

Causing functions: CN, GS, RL

Explanation: There is a length error. The request DATA and reply DATA lengths specified in the CPRB must be X'0000'.

Action: Change the program.

P2 X'01005032'**Causing functions:** DC, QC**Explanation:** Length error. The request DATA length specified in the CPRB must be X'006C'.**Action:** Change the program.

P3 X'01005033'**Causing functions:** RH**Explanation:** There are no pending messages.

P3 X'01005033'**Causing functions:** CL, CN, DC, OP, QC, RL, SH**Explanation:** The input/output buffers are full: the function was rejected.**Action:** Try one of the following:

- Check the program logic and read queued messages before sending more.
- Delay until other programs or the communication adapter have freed some buffers.
- Allocate additional communication data link buffers.

P4 X'01005034'**Causing functions:** CL, OP, SH**Explanation:** A message pending in the input queue requires a response.**Action:** Make sure the program contains logic to read the message and try again. The required response is automatically sent when the message is read.

P4 X'01005034'**Causing functions:** RH**Explanation:** There is a previous message read with flag5=R that requires a response, or a response is required at end of chain if CN flag5 was M.

P5 X'01005035'**Causing functions:** OP**Explanation:** An OP function is in progress or the LU is already in session.**Action:** Check the program.

P5 X'01005035'**Causing functions:** CN**Explanation:** A CN function is in progress, but a circuit is not yet established.

P5 X'01005035'**Causing functions:** RL**Explanation:** A previous CN function was requested, an RL function is in progress, or an RL function cannot be accepted now.**Action:** Try again.

P5 X'01005035'**Causing functions:** DC, QC**Explanation:** The X.25 link control or the network cannot satisfy the call.

P6 X'01005036'**Causing functions:** CL, OP, SH**Explanation:** A message sent was accepted with an indication that the input buffer contains messages to be read.**Action:** Check the program. All messages should be read before sending new messages.

P7 X'01005037'**Causing functions:** SH**Explanation:** Logic application error. The server detected an inconsistency between the function issued and the internal session status.**Action:** Check the program. Common situation are:

- Trying to send a response, but no response is pending
- A response to be sent is pending
- A message is being received
- Chaining protocol error
- Bracket protocol error
- Change direction protocol error
- A contention situation has occurred
- RTR must be sent between brackets

SNA server

P8 X'01005038'

Causing functions: CL

Explanation: A session is not established. The CL function was rejected.

P8 X'01005038'

Causing functions: SH

Explanation: 'Cancel' is not allowed unless a chain is in progress.

P8 X'01005038'

Causing functions: CN

Explanation: An LU was previously contacted or an RL function is in progress.

P9 X'01005039'

Causing functions: Any

Explanation: The command was rejected. The session identifier specified in request PARMLIST is not valid. SNA.CFG and LAN.CFG (and SNAPOOL.CFG if applicable) do not agree.

PA X'01005041'

Causing functions: SH

Explanation: A host message or response must be received before sending.

PB X'01005042'

Causing functions: CL, OP, SH

Explanation: The station is set to quiesce status.

Action: Wait for a host message to change the status.

PC X'01005043'

Causing functions: RH

Explanation: Compressed data arrived with the wrong format, or data arrived compressed with an algorithm that is not supported.

Action: Check the compressed data format and algorithm on the remote system.

PZ X'0100505A'

Causing functions: Any

Explanation: The PARMLIST length is not valid. It must be X'001A'.

Device errors

U1 X'01005531'

Causing functions: CN

Explanation: The workstation has not finished starting LANDP.

Action: Retry the call.

U1 X'01005531'

Causing functions: CL, OP, RH, SH

Explanation: Contact is pending.

Action: Check the host status and equipment. The LU may be pooled, and contact may be pending.

U1 X'01005531'

Causing functions: DC, QC

Explanation: The LU is pooled and contact is pending.

U4 X'01005534'

Causing functions: Any

Explanation: Bad status was received from the adapter. Normally, this is followed by a loss of contact.

Action: If the session is re-established correctly, normal operation will resume. If the error persists, verify the adapter functions and connections.

U6 X'01005536'

Causing functions: Any

Explanation: A software problem was detected. Either wrong facilities were defined in a call packet of the VCM.CFG file or in a DC (X.25) function call.

U7 X'01005538'

Causing functions: RH

Explanation:

- The compression server EHCCOMP.EXE is not loaded.

Action: Load the server.

U8 X'01005538'

Causing functions: Any

Explanation: SDLC.COM, X25DLC.EXE, or TRDLC.EXE is not loaded.

Supervisor local functions

Supervisor local functions

The following codes are returned by the supervisor local functions.

Operation successful

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Z5

Explanation: The queue for asynchronous messages is full.

Action: Try later.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: AA

Explanation: The reply DATA length is not correct.

P2 X'01005032'

Causing functions: EE, Tn, WM

Explanation: The request DATA length is not correct.

P2 X'01005032'

Causing functions: QE, SP, TP

Explanation: The request DATA length is not correct.

P2 X'01005032'

Causing functions: Tn

Explanation: The time interval is not correct.

P2 X'01005032'

Causing functions: WM

Explanation: The interval in PARMLIST area is not correct.

P3 X'01005033'

Causing functions: AA

Explanation: The reply DATA area is insufficient.

P3 X'01005033'

Causing functions: EE

Explanation: The longname specified in the request DATA does not match the longname specified at customization time.

P3 X'01005033'

Causing functions: QE, SP, TP

Explanation: The request PARMLIST length is not correct.

P3 X'01005033'

Causing functions: Tn, EE

Explanation: Either the timer is already on the desired status or a long name does not match a customized value.

P4 X'01005034'

Causing functions: EE

Explanation: The name of the internal application to be started is not known.

P4 X'01005034'

Causing functions: SP, TP

Explanation: The window handle or message value is not valid.

P5 X'01005035'

Causing functions: SP

Explanation: The event list has become too long.

P6 X'01005036'

Causing functions: TP

Explanation: The event list is empty.

P7 X'01005037'

Causing functions: QE, TP

Explanation: The event ID is not valid. It must be the value received in the first parameter of the window procedure.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

system manager server, programming errors

System manager server

The following codes are returned by the system manager server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I0 X'01004930'

Causing functions: AN, MO, UN

Explanation: Support for sending alert notifications, resolution notifications, and messages to the NetView program is deactivated.

I0 X'01004930'

Causing functions: UM, WL

Explanation: Logging is deactivated.

I1 X'01004931'

Causing functions: AN, MO, UN

Explanation: The alerts file is full.

I1 X'01004931'

Causing functions: RL, RN, R1

Explanation: The requested record was not found.

I2 X'01004932'

Causing functions: RL, R1

Explanation: The record used as a base for the retrieval of another was not found.

I5 X'01004935'

Causing functions: SD

Explanation: The date or time is not valid.

Action: Check the contents of the request DATA area.

I6 X'01004936'

Causing functions: AN, MO, UA, UN

Explanation: Support for sending alert notifications, resolution notifications, and messages to the NetView program is not defined.

I6 X'01004936'

Causing functions: RL, R1, UL, WL

Explanation: Logging is not defined.

I6 X'01004936'

Causing functions: UM, UO

Explanation: Message operator support is not defined.

I7 X'01004937'

Causing functions: MO

Explanation: Support for double-byte character set (DBCS) translation is not available.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported or the function was not included during customization.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: AN, AU, AX, CP, DU, GD, GG, GI, GL, GO, GP, GU, GW, MO, RD, RE, RK, RN, RO, RR, RU, RX, SD, SF, SN, SO, SU, UD, UI, UN, UO, UU, VR, UX, XN

Explanation: The request DATA length or reply DATA length is not correct.

Action: Correct the request parameters, and then try again. For the AN, MO, and UN functions, correct the call parameters and try again.

P2 X'01005032'

Causing functions: RF

Explanation: The request DATA length is not correct.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: RL, R1

Explanation: The following could be true:

- The request DATA length is not correct.
- The reply DATA length is not correct.
- The sum of the record length and the user message is longer than X'0400'.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: WL

Explanation: The sum of the record header length and the specified request DATA length exceeds the record length defined in customization or is longer than X'0400' bytes.

P3 X'01005033'

Causing functions: AU, AX

Explanation: The user identifier already exists or a user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: CP, DU, GU, RD, RL, RN, RU, RX, R1, SD, SU, UA, UD, UI, UL, UM, UO, UU, UX, XN

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing or the user identifier is not valid.

P3 X'01005033'

Causing functions: GI, GL, GP, GW

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing, the workstation identifier does not exist, or no user is signed on.

P3 X'01005033'

Causing functions: RE, RK, RO

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: RF

Explanation: The function was not accepted. A user is not signed on, or a user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: SF

Explanation: The workstation or user identifier do not exist or no user is signed on.

P3 X'01005033'

Causing functions: SN, SO

Explanation: The function was not accepted. The user identifier is not valid, another user is already signed on to the same workstation, or the maximum number of simultaneously signed-on users is exceeded.

P4 X'01005034'

Causing functions: GU, RD, RN, RU, RX, XN

Explanation: The requested data is locked. A 'retrieve for update' command is in progress or the requested data belongs to a signed-on user.

Action: On reply, the DATA area contains the requested data.

P4 X'01005034'

Causing functions: GO, RE, RK, RO

Explanation: There is not enough reply DATA length. On reply, the DATA area does not contain all the users.

P4 X'01005034'

Causing functions: SN, SO, UO

Explanation: The user profile was not found.

system manager server, programming errors

P4 X'01005034'

Causing functions: VR

Explanation: The record definition is damaged, or a DBCS field validation was attempted when DBCS support was unavailable.

P5 X'01005035'

Causing functions: AU, AX, GU, RD, RU, RX

Explanation: The requested data is locked. A 'retrieve for update' command is in progress or the requested data belongs to a signed-on user.

Action: Try again later.

P5 X'01005035'

Causing functions: SN, SO

Explanation: The user profile or user data are locked. A 'retrieve for update' command is in progress.

Action: Try again later.

P6 X'01005036'

Causing functions: AU, AX, CP, DU, GU, RN, RU, RX, SF, SN, SO, XN

Explanation: The user profile file was not found.

P6 X'01005036'

Causing functions: RF

Explanation: The function was not performed. The system was unable to read the password in the user profile.

P6 X'01005036'

Causing functions: RR, VR

Explanation: The record definition file was not found.

P6 X'01005036'

Causing functions: SU, UD, UU, UX

Explanation: An update is not allowed. A previous 'retrieve for update' command is missing.

P7 X'01005037'

Causing functions: AN, UN

Explanation: The following could be true:

- The LANDP files EHC#ALRN.DAT or EHC#RESN.DAT were not found.
- The user files EHC#ALRU.DAT or EHC#RESU.DAT were not found.
- The requested network management vector transport (NMVT) definition was damaged or not found.

P7 X'01005037'

Causing functions: AU, AX, UD, UI, UO, UU, UX

Explanation: The supplied data does not agree with the expected format.

P7 X'01005037'

Causing functions: DU, RD, RL, RN, R1, WL, XN

Explanation: The supplied parameter does not agree with the expected format.

P7 X'01005037'

Causing functions: RF, SF

Explanation: The function was not performed. The sign-off type is reserved.

P7 X'01005037'

Causing functions: RR, VR

Explanation: The requested record definition was not found.

P7 X'01005037'

Causing functions: SN, SO

Explanation: User signon is denied. The user profile was destroyed or modified without using the appropriate system manager functions.

P8 X'01005038'

Causing functions: CP, RF, SN, SO

Explanation: The password is not valid.

Action: Try again.

P8 X'01005038'

Causing functions: DU, UU, UX

Explanation: Deleting or updating the user profile is denied. This is the only user with authorization level A or this is the user who receives operator messages.

P8 X'01005038'

Causing functions: UO

Explanation: A new user must have authorization level O.

P8 X'01005038'

Causing functions: VR

Explanation: The data is not valid.

P9 X'01005039'

Causing functions: SN, SO

Explanation: User signon is denied. The user is already signed on at another workstation.

P9 X'01005039'

Causing functions: DU

Explanation: Deleting the user is denied. The user is signed on, the user profile is locked, or the user data is locked.

Action: Try again later.

Device errors

U1 X'01005531'

Causing functions: RL, R1, WL

Explanation: An irrecoverable error has occurred: the log file is destroyed.

Action: Delete the log file and restart LANDP.

U3 X'01005533'

Causing functions: AU, AX, CP, DU, GI, GL, GU, RD, RF, RU, RX, SF, SU, UU, UX

Explanation: A server internal error has occurred.

Action: Report the problem.

U5 X'01005535'

Causing functions: AN, AU, AX, CP, DU, MO, RD, RN, RL, RR, R1, SN, SO, SU, UN, UU, UX, VR, WL, XN

Explanation: An error occurred while accessing a DOS file.

Action: Try the request again. If the problem persists, it is probably a hardware error.

U5 X'01005535'

Causing functions: RF, SF, UA, UD, UI, UL, UM, UO

Explanation: An error occurred while accessing a DOS file. The update was made only in storage.

Action: Try the request again. If the problem persists, it is probably a hardware error.

U5 X'01005535'

Causing functions: GI, GL

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area contains the user ID.

U5 X'01005535'

Causing functions: GP, GW

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area contains the workstation ID.

U5 X'01005535'

Causing functions: RE

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area may contain some user IDs.

U5 X'01005535'

Causing functions: GO, RO

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area **date and time of last sign on** field is set to blanks.

TCP/IP wide area communications server

The following codes are placed in the file EHCTCP.TRC.

ALU

Explanation: LU name inconsistent with LOCADDR. LOCADDR is shown.

Action: Ensure constant difference between LOCADDR and numeric suffix of LU names.

CN1 through CN8

Explanation: Error returned from TCP/IP during connection. TCP/IP return code is shown.

Action: Check that session partner (for example, AnyNet®) is active.

CNP

Explanation: Invalid port number in EHCTCP.INI. Port number is shown.

Action: Correct the port number in EHCTCP.INI and re-start LANDP.

CNS

Explanation: Invalid number of sessions in LU6.2 conversation mode definition. Number of sessions is shown.

Action: Correct the mode definition in EHCTCP.INI and re-start LANDP.

CNW

Explanation: Invalid number of contention winners in LU6.2 conversation mode definition. Number of contention winners is shown.

Action: Correct the mode definition in EHCTCP.INI and re-start LANDP.

GH1

Explanation: TCP/IP unable to resolve host name to IP address. TCP/IP "ghostbyname" return code is shown.

Action: Check the name in the EHCTCP.INI file. Check your local TCP/IP HOSTS file if used. Check host name resolution with TCP/IP PING command.

IF1 through IF3

Explanation: Definition in EHCTCP.INI file not found. IF1 shows name sought, IF2 shows type sought, and IF3 shows value sought.

Action: If the missing definition should be present, correct the EHCTCP.INI file and re-start LANDP. If the missing definition should not be present, the most likely cause is incorrect parameters to a PPC server OP request, or incorrect session number on a SNA server CN request. Correct this.

IN1 through IN7

Explanation: Operating system error occurred. Operating system return code is shown.

Action: Re-boot your computer. If the error persists, contact your service representative.

INC

Explanation: Initialisation file EHCTCP.INI has invalid contents. Offset of invalid contents is shown.

Action: Correct the contents of EHCTCP.INI and re-start LANDP.

INF

Explanation: Initialisation file EHCTCP.INI not found.

Action: Place EHCTCP.INI in the directory with LANDP and re-start LANDP.

INL

Explanation: Listening port in EHCTCP.INI is invalid. Port is shown.

Action: Correct the port number in EHCTCP.INI and re-start LANDP.

INM

Explanation: Not enough memory available for sessions.

Action: Make more memory available or reduce the number of sessions and re-start LANDP.

INN

Explanation: Listening value in EHCTCP.INI is invalid. Value is shown.

Action: Correct the listening value in EHCTCP.INI and re-start LANDP.

INP

Explanation: Loading parameter error. Index of bad parameter is shown.

Action: Correct the EHCTCP loading statement and re-start LANDP.

INa through INe

Explanation: TCP/IP error occurred. TCP/IP return code shown.

Action: Make sure TCP/IP is operational and configured correctly.

MX1

Explanation: Maximum number of sessions exceeded. Maximum is shown.

Action: Increase the maximum or reduce session usage.

MX2

Explanation: Maximum number of TCP/IP connections exceeded. Maximum is shown.

Action: Reduce session usage. On DOS, it may be possible to increase the number of TCP/IP connections available.

RD1 through RD2

Explanation: Error returned reading data from TCP/IP. TCP/IP return is code shown.

Action: Check that session partner (eg AnyNet) is active.

SD1

Explanation: Error returned sending data to TCP/IP. TCP/IP return code is shown.

Action: Check that session partner (eg AnyNet) is active.

TE1 through TE2

Explanation: Unexpected TELNET command code or sub-negotiation code. Unexpected code is shown.

Action: Contact your service representative.

Chapter 9. LANDP for OS/2 return codes

LANDP return codes are values returned by servers as a result of a function or service request made by an application program. This chapter lists the codes returned by LANDP for OS/2 servers.

“Return codes” on page 5 briefly describes LANDP return codes, including the types and classes of codes. It also describes how to interpret hexadecimal and ASCII return codes.

Quick Guide

There are two types of LANDP return codes: router and server. Router return codes are stored with offset 4 in the CPRB. Server return codes are stored with offset 40 in the CPRB. Operations are successful only if the router and the server return codes are zero.

Listings include the hexadecimal return code and, if available, the translated ASCII return code. The ASCII code appears in parentheses. The first character of the ASCII return code denotes the code class, as follows:

Character Class

- | | |
|----------|--|
| I | <i>Intervention required.</i> These return codes occur when workstation operators or technical service personnel can remove the error (or fault). |
| L | <i>LAN services error.</i> These return codes can occur in any function request to any server.

NetBIOS return codes are listed and described in <i>LAN Technical Reference IEEE 802.2 and NetBIOS Application Program Interfaces</i> , SC30-3587. |
| P | <i>Programming error.</i> These return codes can occur while developing or debugging application programs. They should not occur in daily operation with error-free programs. |
| U | <i>Device error (Unable to access equipment).</i> These return codes occur when LANDP software cannot carry out a request. The most likely cause is a hardware error (or fault). |

CICS interface server

The following codes are returned by the CICS interface server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

P0 X'01005030'

Causing functions: RC

Explanation: No previous CC function has been requested.

P1 X'01005031'

Causing functions: Any

Explanation: The function is not supported. The function code is not correct or the combination of function code, parameters, and data is not consistent or supported.

Action: Fix the error in the program.

P2 X'01005032'

Causing functions: Any

Explanation: One of the following could be true:

- Data lengths are not correct for the specific function.
- The data length is not large enough to hold all data arriving from a partner.

Data is truncated to the specified length.

Action: Fix the program.

P3 X'01005033'

Causing functions: RC

Explanation: There are no messages to read.

P8 X'01005038'

Causing functions: CC

Explanation: A previous CC function in asynchronous mode has been issued with the same EventCode and no return code has been issued with this EventCode.

PY X'01005059'

Causing functions: Any

Explanation: The environment is not supported.

PZ X'0100505A'

Causing functions: Any

Explanation: The parameter length is not valid.

Device errors

U9 X'01005539'

Causing functions: Any

Explanation: An OS/2 operating system error has occurred.

Action: Check the log file.

Call CICS (CC) errors

X'FFFFFFFF7'

Causing functions: CC

Explanation: A CICS OS/2 internal error has occurred.

X'FFFFFFFF8'

Causing functions: CC

Explanation: The program tried to cancel a previous request when there was none outstanding.

X'FFFFFFF9'**Causing functions:** CC**Explanation:** CICS OS/2 accepted the request, but the transaction ended.

X'FFFFFFFA'**Causing functions:** CC**Explanation:** CICS OS/2 accepted the request, but did not finish processing it within the time-out period.

X'FFFFFFFB'**Causing functions:** CC**Explanation:** CICS OS/2 did not accept the request within the specified time-out period.

X'FFFFFFFC'**Causing functions:** CC**Explanation:** CICS OS/2 is no longer running.

X'FFFFFFFD'**Causing functions:** CC**Explanation:** CICS OS/2 is not running.

X'FFFFFFFE'**Causing functions:** CC**Explanation:** A value in the extended mode is not valid.

X'FFFFFFF'**Causing functions:** CC**Explanation:** This error is caused by either a positive user data length for a null user data area or a user data length of zero for a non-null data area.

VisualAge® Generator support

The following codes are returned by the VisualAge Generator support functions.

General

X'00000000'

Explanation: Successful operation.

Action: None required.

P2 X'01005032'

Explanation: The REQBLK or REPBLK (or both) is missing.

Bit-Oriented data handling (EZHC2CH)

X'00000000'

Explanation: Successful operation.

Action: None required.

P1 X'01005031'

Explanation: The function is not supported (not HC or CH).

P2 X'01005032'

Explanation: The length is not valid. One of the following could be true:

- The request DATA length is greater than zero, or the request PARMLIST length is zero.
- The function is CH but the reply PARMLIST length is not twice the request PARMLIST length.
- The function is HC but the request PARMLIST length is not twice the reply PARMLIST length.
- There is a mismatch between the request and reply DATA lengths.

P4 X'01005034'

Explanation: A hexadecimal character is not valid.

ASCII-EBCDIC translation (EZAE2EA)

X'00000000'

Explanation: Successful operation.

Action: None required.

P1 X'01005031'

Explanation: The function is not supported (not AE or EA).

P2 X'01005032'

Explanation: There is a mismatch between the request and reply DATA lengths.

DDE access server

The following codes are returned by the dynamic data exchange (DDE) access server. They indicate programming errors.

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

AN X'0100414E'

Causing functions: UN

Explanation: Advice was not established. The hot-link does not exist.

CE X'01004345'

Causing functions: IC, ID, GD, RC

Explanation: The allowed number of conversations was exceeded. The LANDP application has 189 open conversations.

Action: Try again after closing any other conversation.

CF X'01004346'

Causing functions: AD, EC, GD, ID, KD, PD, RC, RD, TC, UN

Explanation: The conversation ended. The DDE server application has closed the conversation. The conversation is no longer valid.

Action: Open a new conversation using the same application and topic.

CL X'0100434C'

Causing functions: IC, ID, GD, RC

Explanation: The conversation is locked. Another LANDP application has locked the access to this topic.

Action: Try again later.

CO X'0100434F'

Causing functions: CO

Explanation: A conversation is open. There are open conversations for this application and topic, or the conversation is already locked.

Action: Try again later.

DT X'01004454'

Causing functions: GD, KD, QA, PT

Explanation: Data was truncated. The reply DATA area is too small. The reply DATA area contains only the data that it can hold.

Action: Increase the reply DATA area and request the function again.

EO X'0100454F'

Causing functions: IC, ID, GD, QA, RC

Explanation: An error occurred while creating an object. The DDE access server could not open the window that manages this conversation.

IC X'01004943'

Causing functions: AD, EC, GD, ID, PD, RC, RD, TC

Explanation: The conversation is not valid. The conversation specified by the conversation handle does not exist.

X'01004944' (IM)

Causing functions: AD, EC, GD, ID, KD, PD, UN

Explanation: The message is not valid. The DDE server application has not accepted the message that was received.

DDE access server

IF X'01004946'

Causing functions: EC, IC, ID, GD, LO, LP, PD, RC, UL

Explanation: The format is not valid. The data received from the LANDP application does not conform to the DDE access server format.

Action: Check the request DATA.

IP X'01004950'

Causing functions: AD, EC, KD, PD, RD, TC, UN

Explanation: The parameter size is not valid. The request PARMLIST size is zero.

Action: Change the parameter size.

IT X'01004954'

Causing functions: KD, UN

Explanation: The transaction is not valid. The transaction specified by the transaction handle does not exist.

NA X'01004E41'

Causing functions: EC, GD, ID, KD, PD, RC, UN

Explanation: The message was not accepted. The DDE server application did not process the message because it could not understand it.

If the return code was caused by the KD function, the server has not accepted the 'request' or 'advice' request.

ND X'01004E44'

Causing functions: PT

Explanation: There is no data. The clipboard does not contain data in this format.

Action: Enter or copy the data and try again.

NF X'01004E46'

Causing functions: LP

Explanation: A file was not found. The files required for processing were not found or the path or drive do not exist.

Action: Check the path, drive, and files.

NL X'01004E4C'

Causing functions: UL

Explanation: The conversation is not locked. This LANDP application has not locked this topic.

NM X'01004E4D'

Causing functions: AD, CT, EC, GD, IC, ID, KD, LO, NM, PD, PT, QA, RC, RD, TC, UN

Explanation: There is no available memory. A system error occurred when requesting memory.

NR X'01004E52'

Causing functions: GD, IC, ID, KD, RC, QA

Explanation: The application did not respond. A DDE server application was not available when the DDE access server tried to start the conversation, or data was not available from the DDE server application.

Action: Start the DDE access server or obtain the data later.

OE X'01004F45'

Causing functions: Any

Explanation: An OS/2 operating system error has occurred. There was an unexpected return code from a system function call.

PL X'0100504C'

Causing functions: AD, GD, IC, KD, PT, QA, RD

Explanation: The reply DATA length is not valid. The reply DATA has size zero.

Action: Repeat the request using a larger reply DATA area.

X'010051AC' (QL)

Causing functions: AD, CT, EC, GD, IC, ID, LO, LP, PD, RC, RD, UL

Explanation: The request DATA length is not valid. The request DATA has size zero.

SE X'01005345'

Causing functions: Any

Explanation: A system error has occurred, that is an unexpected DDE access server error has occurred.

TA X'01005441'

Causing functions: AD, RD

Explanation: The transaction already exists. Data for this item has already been requested, but not obtained.

Action: Obtain this data or open a new conversation for this application and topic.

TE X'01005445'

Causing functions: AD, RD

Explanation: The allowed number of transactions was exceeded. The LANDP application has 189 open transactions.

Action: Close any other transactions, and try again later.

EHCFREE program

EHCFREE program

The codes that are returned by the EHCFREE program are described in “LAN and router” on page 194.

EHCLIP program

The following codes are returned by EHCLIP, the LANDP Internet Protocol program. See "EHCLIP program services" on page 43 for information about the program.

CE01

Explanation: TCP/IP returned error data to the **opensocket** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE02

Explanation: TCP/IP returned error data to the **bind** function. EHCLIP cannot start.

Action: If data is 48 (EADDRINUSE), the port number requested by EHCLIP could already be in use by another TCP/IP application. Stop the application or start EHCLIP on all the LANDP workgroup workstations using the **/N** parameter.

If data is 49 (EADDRNOTAVAIL), TCP/IP is not started or the TCP/IP network interface is not active. Make sure TCP/IP is operational.

CE03

Explanation: TCP/IP returned error data to the **setsockopt** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE04

Explanation: TCP/IP returned error data to the **ioctl** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE05

Explanation: The workstation identifier (**ws_id**) is duplicated in the configuration. EHCLIP cannot start.

Action: Correct the workstation identifier.

CE06

Explanation: TCP/IP returned error data to the **gethostbyname** function for the workstation identifier (**ws_id**). EHCLIP cannot start.

Action: Either the workstation identifier corresponding to **ws_id** is not correctly defined in the TCP/IP 'hosts' file or 'names' server, or TCP/IP could not access the 'names' server or open the 'hosts' file.

CE07

Explanation: The local workstation identifier (**ws_id**) is duplicated as a related workstation. EHCLIP cannot start.

Action: Correct the workstation identifier.

CE08

Explanation: TCP/IP returned a null address for the workstation identifier (**ws_id**). EHCLIP cannot start.

Action: Check the TCP/IP 'hosts' file format or 'names' server definition.

CE10

Explanation: TCP/IP returned error data to the **sendto** function.

Action: If data is 51 (ENETUNREACH), then the **sendto** failed because **ws_id** cannot be reached from the local workstation. If a session is still being established, then LIP checks alternative addresses for **ws_id**. If no address is reachable, then LIP cannot continue running. In this case, check the routing table and make sure there is a path to the remote workstation.

If data is not 51, then LIP cannot continue running. Make sure TCP/IP is operational.

CE11

Explanation: The **sendto** function failed because TCP/IP output buffer space was not available. EHCLIP had to retry a TCP/IP output function for lack of space in TCP/IP output buffers.

Action: This could be caused by an overloaded network. The session is continued.

CE12

Explanation: Message length data to be sent to workstation identifier (**ws_id**) is larger than the maximum allowed. An application tried to send more data than the maximum allowed. The message is not sent.

Action: Check the message length data.

EHCLIP program

CE20

Explanation: TCP/IP returned error data to the **rcvfrom** function. EHCLIP cannot continue running.

Action: Make sure TCP/IP is operational.

CE30

Explanation: A session with the workstation identifier (ws_id) closed. EHCLIP closed a session with ws_id when a segmented message send operation could not be completed.

Action: Session re-establishment procedures are started.

CE32

Explanation: A session with the workstation identifier (ws_id) closed. EHCLIP closed a session with ws_id because contact was lost.

Action: Session re-establishment procedures are started.

CE40

Explanation: A configuration error was detected. The remote workstation identifier (ws_id) and the INET address do not match local configuration data. A session with ws_id is not established.

Action: Check local TCP/IP 'hosts' file or 'names' server definitions.

CE41

Explanation: A configuration error was detected. The remote workstation identifier (ws_id) reported that the local ws_id and INET address do not match its configuration data. A session with ws_id is not established.

Action: Check remote workstation TCP/IP 'hosts' file or 'names' server definitions.

CE50

Explanation: A storage allocation request for data bytes has failed. EHCLIP cannot continue running.

Action: Check storage availability.

CS01

Explanation: A session has been established with workstation ws_id.

CS02

Explanation: Remote workstation ws_id has closed the session.

CSND

Explanation: The number of datagrams sent to workstation ws_id.

CSRD

Explanation: The number of datagrams sent to workstation ws_id that required re-transmission.

CSPF

Explanation: Minimum percentage of free space in the re-transmission table during EHCLIP activity.

CSNE

Explanation: The number of times a message could not be sent because of lack of space in the re-transmission table.

CSNW

Explanation: The number of times a message could not be sent because the send window was not sufficiently open.

SL02

Explanation: A load parameter is not valid. The reported load parameter is not correct. EHCLIP cannot start.

Action: Check the parameter.

SL03

Explanation: A load parameter is unknown. One of the load parameters is not recognized. EHCLIP cannot start.

Action: Check the parameter.

SO01 through SO14

Explanation: The OS/2 operating system returned error data.

Action: This is an internal error. EHCLIP cannot continue running.

Action: Contact your Service representative.

SX00 through SX16

Explanation: Internal error. The function may be ignored or EHCLIP may terminate.

Action: Contact your Service representative.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal server, the store-for-forwarding server, or both servers.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Electronic journal server

The following codes are returned only by the electronic journal server.

J0 X'01004A30'

Causing functions: RL

Explanation: There is no journal to release.

J1 X'01004A31'

Causing functions: IL, SL

Explanation: The logical journal environment is not selected.

J2 X'01004A32'

Causing functions: SL

Explanation: A new logical journal was not found or two (or more) SL functions occurred in sequence.

J3 X'01004A33'

Causing functions: SL

Explanation: A previous logical journal was not found.

J4 X'01004A34'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J5 X'01004A35'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J6 X'01004A36'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J7 X'01004A37'

Causing functions: AL

Explanation: A data set is already allocated.

J8 X'01004A38'

Causing functions: AL

Explanation: The next data set is not empty.

J9 X'01004A39'

Causing functions: DA

Explanation: Deallocate is not possible because the latest allocated data set already contains records.

JA X'01004A41'

Causing functions: RR

Explanation: Too many records are on hold.

JB X'01004A42'

Causing functions: DL, UP

Explanation: No records are held.

JC X'01004A43'

Causing functions: AR, RL, RR

Explanation: An electronic journal is not selected.

JD X'01004A44'

Causing functions: AR, DA, IL, IP, RL, RS, RR, SL

Explanation: A journal was not found.

JE X'01004A45'

Causing functions: DA, SL

Explanation: A data set is not allocated.

JF X'01004A46'

Causing functions: RR

Explanation: The accessed logical journal is not active.

JG X'01004A47'

Causing functions: RR

Explanation: The accessed physical journal is not in use.

JH X'01004A48'

Causing functions: DL

Explanation: The record cannot be deleted as it belongs to another logical journal.

JI X'01004A49'

Causing functions: UP

Explanation: The record cannot be updated as it belongs to another logical journal.

JJ X'01004A4A'

Causing functions: AL, SL

Explanation: The physical or logical journal name is blank.

JK X'01004A4B'

Causing functions: DL

Explanation: The record has already been deleted.

JL X'01004A4C'

Causing functions: RR

Explanation: The delete flag is not equal to Y or N.

JM X'01004A4D'

Causing functions: RR

Explanation: The hold flag is not equal to H or N.

JN X'01004A4E'

Causing functions: SL

Explanation: There are too many logical journals.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal and store-for-forwarding servers.

P0 X'01005030'

Causing functions:

Explanation: The function is not supported.

P1 X'01005031'

Causing functions: Any, except CS, IS, QD, SI, TB, TE, TI

Explanation: This is an imbedded server request error.

Action: Get more information from the system manager log file. See the *LANDP Servers and System Management* book for information about the log file.

P2 X'01005032'

Causing functions: AR, RR

Explanation: The format name is not known.

P3 X'01005033'

Causing functions: Any

Explanation: The shared file is not initialized. (A GF function was not requested.)

P4 X'01005034'

Causing functions: Any, except UP

Explanation: Transaction locking was not initialized. (A BT function was not requested.)

electronic journal and store-for-forwarding servers

P5 X'01005035'

Causing functions: Any, except UP

Explanation: The shared file is not initialized. (An OO function was not requested.)

P6 X'01005036'

Causing functions: AR, DL, RR

Explanation: A separate session is already open. (The DL function applies only to the store-for-forwarding server.)

P7 X'01005037'

Causing functions: AR, RR

Explanation: An entry is not available in separate session tables.

Action: Try later.

P8 X'01005038'

Causing functions: AR, RR

Explanation: A separate session cannot be opened.

P9 X'01005039'

Causing functions: AR, DL, RR, TS, UP

Explanation: A separate session is not open.

PA X'01005041'

Causing functions: AR, DL, RR, TS, UP

Explanation: After an error occurred, the separate session could not be rolled back.

PB X'01005042'

Causing functions: AR, DL, RR, TS, UP

Explanation: A separate session could not be closed.

PC X'01005043'

Causing functions: RR

Explanation: A record satisfying the search criteria was not found.

PD X'01005044'

Causing functions: RR

Explanation: This is an internal error.

PE X'01005045'

Causing functions: RR

Explanation: The search definition is not correct or the search mode is not valid.

PF X'01005046'

Causing functions: RR

Explanation: A record matching the search criteria was not found after the maximum number of disk accesses.

PG X'01005047'

Causing functions: Any

Explanation: Initial handling was not done. This error causes an alert to be sent to the host. The TI function does not send alerts.

PH X'01005048'

Causing functions: AR, UP

Explanation: The field length is not the same as in the defined record format.

PI X'01005049'

Causing functions: AR, UP

Explanation: The field format is not the same as in the defined record format.

PJ X'0100504A'

Causing functions: AR, DL, RR, UP

Explanation: A separate session flag is in error.

PK X'0100504B'

Causing functions: UP

Explanation: The length of the record to be updated differs from the provided record length.

PL X'0100504C'

Causing functions: UP

Explanation: An update with a key field change is not allowed. (The key in the record to be updated differs from the key of the provided record.)

PM X'0100504D'

Causing functions: UP

Explanation: The record definition differs.

PN X'0100504E'

Causing functions: AR, DL, RR, UP

Explanation: A separate session flag was used when no separate session was chosen.

PO X'0100504F'

Causing functions: RR, RS

Explanation: The record is locked by another workstation.

PP X'01005050'

Causing functions: SL, TB, TE

Explanation: The flag is not valid.

PQ X'01005051'

Causing functions: AR

Explanation: The request DATA length is greater than the buffer size (specified in the /K loading parameter) less 32.

PQ X'01005051'

Causing functions: RR

Explanation: The request DATA length is greater than X'0400'.

PR X'01005052'

Causing functions: RR

Explanation: The returned record is truncated.

Action: Try the following:

- If the sum of the actual record size and 32 is greater than the buffer size, increase the value of the /K loading parameter.
- If the sum of the actual record size and 32 is greater than the reply DATA length, increase the reply DATA length.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Store-for-Forwarding server

The following codes are returned only by the store-for-forwarding server.

S0 X'01005330'

Causing functions: DL

Explanation: The record cannot be deleted because it has not been sent by the forwarding facility.

S1 X'01005331'

Causing functions: CS

Explanation: Incomplete status data was provided.

S1 X'01005331'

Causing functions: IS

Explanation: The reply DATA length is insufficient.

S2 X'01005332'

Causing functions: AR, DL, DS, EN, IS, RR, RS, TB, TE

Explanation: The data set was not found.

S3 X'01005333'

Causing functions: TB, TE

Explanation: The session was not found.

S4 X'01005334'

Causing functions: SI

Explanation: The data format has an error.

S5 X'01005335'

Causing functions: CS, IS, QD, SI, TB, TE

Explanation: The server is waiting for an SI request from the forwarding facility.

electronic journal and store-for-forwarding servers

S6 X'01005336'

Causing functions: AR

Explanation: The data set is disabled for adding records.

Action: Issue an EN function.

S7 X'01005337'

Causing functions: RR

Explanation: Too many records are on hold.

S8 X'01005338'

Causing functions: UP

Explanation: No records are held.

S9 X'01005339'

Causing functions: DL

Explanation: The record number is not valid or the record cannot be deleted.

SA X'01005341'

Causing functions: RR

Explanation: The retrieve mode flag is not set to R, D, or U.

Financial printer server

The following codes are returned by the financial printer server. It supports the following document, passbook, and transaction printers:

- IBM 4009 Universal Banking Printer
- IBM 4712 Transaction Printer
- IBM 4722 Document Printer
- IBM 4772 Ink Jet Transaction Printer
- IBM 9055-002 Document Printer (SBCS support)
- IBM 9068-S01 Multi-purpose Passbook Printer (SBCS support)

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page. For REMS: The read and verify process did not find data. This is an encoding error.

I3 X'01004933'

Causing functions: RD

Explanation: The following could be true:

- No data was found on the magnetic stripe because the stripe is blank, there is no stripe, or the stripe is misplaced on the passbook.
- An incorrect 'Devparm' for REMS has been loaded.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of a journal, document, or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed (except for a journal that begins a new page).

I4 X'01004934'

Causing functions: CH, RD, WR

Explanation: For REMS: The passbook has been replaced while a chained sequence of operations was executed. No passbook for REMS operations.

I5 X'01004935'

Causing functions: CH, RD, WR

Explanation: The printer stop button was pressed or the printer cover is open.

Action: Press the start button or close the printer cover, insert the document, and try again.

Financial printer server

I6 X'01004936'

Causing functions: CH, CL, DF, EC, LL, OP, RD, WR

Explanation: The printer is busy. The reason may be redirection.

Action: Try again.

I7 X'01004937'

Causing functions: CH, DF, LL, WR

Explanation: The end of the journal, passbook, or document was reached or the document, passbook, or journal has not been inserted yet.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
 - On retries, the line is not printed.
-

I9 X'01004939'

Causing functions: CH, DF, EC, LL, OP, RD, RM, WR

Explanation: The resource is assigned to another workstation or another session.

ID X'01004944'

Causing functions: Any

Explanation: The printer's cover is open

Action: Close the cover.

IG X'01004947'

Causing functions: RD

Explanation: There has been a longitudinal redundancy check (LRC) error, or a parity error; or the data format is invalid.

Action: Correct any data formatting error and retry the request. If the problems persists, obtain service.

IR X'01004952'

Causing functions: RD, WR

Explanation: Intervention is required.

Action: Press the A or B button to start printing.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: CH, CL, DF, EC, LL, OP, RD, RM, WR

Explanation: The length is not correct. For the DF function the name in DATA is not a defined format description name, or the length is X'0000' or greater than X'0008'.

P3 X'01005033'

Causing functions: CH, CL, DF, EC, LL, RD, RM, WR

Explanation: A previous open function is missing.

P4 X'01005034'

Causing functions: DF, RD

Explanation: Format parameters are not correct. No REMS component is available.

P6 X'01005036'

Causing functions: AR, DU, WR

Explanation: There is a data (download images) content error. Data goes beyond the end of the display.

P7 X'01005037'

Causing functions: RD, WR

Explanation: The following could be true:

- The passbook is not in an REMS position.
- An REMS format parameter has not been loaded.
- The passbook is not usable for an REMS operation because it has already been processed by a print operation.
- The format definition contains a passbook width that is not valid.

P8 X'01005038'**Causing functions:** AR, CD, DU, WR**Explanation:** No operator panel component is available.

P9 X'01005039'**Causing functions:** Any except CD, RD**Explanation:** An AR function is in progress.**Action:** Cancel the function or wait until it finishes processing.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.**Device errors**

U1 X'01005531'**Causing functions:** Any**Explanation:** There is a printer or REMS hardware malfunction.**Action:** A printer hardware malfunction can often be cleared by powering off, and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'**Causing functions:** Any**Explanation:** There is a printer malfunction. The printer does not answer a status call (device time out).**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** An OS/2 operating system call error has occurred.**Action:** Make sure the device driver is installed.

U5 X'01005535'**Causing functions:** Any**Explanation:** There is a device driver error.**Action:** Follow service reporting procedures.

U6 X'01005536'**Causing functions:** OP**Explanation:** The device driver is not installed.

U7 X'01005537'**Causing functions:** OP**Explanation:** The printer ID byte is unknown.

U8 X'01005538'**Causing functions:** Any**Explanation:** A server internal error has occurred.**Action:** Obtain software service.

U9 X'01005539'**Causing functions:** Any**Explanation:** A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

4748 printer server

IBM 4748 printer server

The following codes are returned by the 4748 printer server. This server supports the following printers:

- IBM 4748 Document Printer
- IBM 9055-001 Document Printer (DBCS support)
- IBM 9068-D01 Multi-purpose Passbook Printer (DBCS support)

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of the document or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.

- On retries, the line is not printed.

I5 X'01004935'

Causing functions: CH, WR

Explanation: The printer stop button was pressed, the printer cover is open, or the document was not inserted.

Action: Press the start button, close the printer cover, or insert the document. Try the operation again.

I7 X'01004937'

Causing functions: CH, DF, LL, WR

Explanation: The end of the document or passbook was reached. No writing is performed.

I8 X'01004938'

Causing functions: CH, WR

Explanation: There is a server time out. The printer does not answer completion.

Action: Try the request again.

I9 X'01004939'

Causing functions: CH, DF, EC, LD, LL, OP, WR

Explanation: The resource is assigned to another workstation.

IR X'01004952'

Causing functions: WR

Explanation: Intervention is required.

Action: Press the A or B button to start printing.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'**Causing functions:****Explanation:** The function is not supported.**Action:** Check the request format and parameters.

P2 X'01005032'**Causing functions:** CH, CL, DF, EC, LD, LL, OP, WR**Explanation:** The length is not correct.

P3 X'01005033'**Causing functions:** CH, DF, EC, LD, LL, WR**Explanation:** A previous open function is missing.

P4 X'01005034'**Causing functions:** DF, LD**Explanation:** The format parameters are not correct.

P6 X'01005036'**Causing functions:** WR**Explanation:** There is a data content error.

PZ X'0100505A'**Causing functions:** Any**Explanation:** A parameter length is not valid.

Device errors

U1 X'01005531'**Causing functions:** Any**Explanation:** There is a printer hardware malfunction.**Action:** A printer hardware malfunction can often be cleared by powering off and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'**Causing functions:** Any**Explanation:** There is a printer malfunction. The printer does not answer a status call (device time out).**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** This is an OS/2 operating system error: an error occurred while invoking OS/2.**Action:** Make sure the device driver is installed.

U5 X'01005535'**Causing functions:** Any**Explanation:** There is a device driver error.**Action:** Follow the service reporting procedures.

U6 X'01005536'**Causing functions:** OP**Explanation:** The device driver is not installed.**Action:** Install the device driver.

U7 X'01005537'**Causing functions:** OP**Explanation:** A printer ID byte is unknown.

U8 X'01005538'**Causing functions:** Any**Explanation:** There is a server internal error.**Action:** Obtain software service.

U9 X'01005539'**Causing functions:** Any**Explanation:** A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

4770 printer server

IBM 4770 printer server

The following codes are returned by the 4770 printer server. This server supports the IBM 4770 Universal Financial printer.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page. For REMS: The read and verify process did not find data. This is an encoding error.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of a journal, document, or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed (except for a journal that begins a new page).

I6 X'01004936'

Causing functions: CH, CL, DF, EC, LL, OP, RD, WR

Explanation: The printer is busy. The reason may be redirection.

Action: Try again.

I7 X'01004937'

Causing functions: CH, DF, LL, WR

Explanation: The end of the journal, passbook, or document was reached or the document, passbook, or journal has not been inserted yet.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed.

I9 X'01004939'

Causing functions: CH, DF, EC, LL, OP, RD, RM, WR

Explanation: The resource is assigned to another workstation or another session.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: CH, CL, DF, EC, LL, OP, RD, RM, WR

Explanation: The length is not correct. For the DF function the name in DATA is not a defined format description name, or the length is X'0000' or greater than X'0008'.

P3 X'01005033'**Causing functions:** CH, DF, EC, LL, RD, RM, WR**Explanation:** A previous open function is missing.

P4 X'01005034'**Causing functions:** DF, RD**Explanation:** Format parameters are not correct. No REMS component is available.

P6 X'01005036'**Causing functions:** WR**Explanation:** There is a data content error.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'**Causing functions:** Any**Explanation:** There is a printer or REMS hardware malfunction.**Action:** A printer hardware malfunction can often be cleared by powering off, and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'**Causing functions:** Any**Explanation:** There is a printer malfunction. The printer does not answer a status call (device time out).**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** An OS/2 operating system call error has occurred.**Action:** Make sure the device driver is installed.

U5 X'01005535'**Causing functions:** Any**Explanation:** There is a device driver error.**Action:** Follow service reporting procedures.

U6 X'01005536'**Causing functions:** OP**Explanation:** The device driver is not installed.

U7 X'01005537'**Causing functions:** OP**Explanation:** The printer ID byte is unknown.

U8 X'01005538'**Causing functions:** Any**Explanation:** A server internal error has occurred.**Action:** Obtain software service.

U9 X'01005539'**Causing functions:** Any**Explanation:** A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

LAN and router

LAN and router

The following codes are returned when errors are detected by the LANDP workgroup server or the router. The errors can occur in any function request to any server.

X'01000402'

Explanation: The process supervisor is not initialized.

Action: Issue the process supervisor local function IN.

X'01000404'

Explanation: The SPV.EXE program is not loaded.

Action: Load the SPV.EXE program.

X'01000602'

Explanation: The request PARMLIST length is not correct. It must be the length specified for each function.

X'01000604'

Explanation: Values in the CPRB for reply PARMLIST (address or length) or reply DATA (address or length) are not valid. The following could be true:

- The reply PARMLIST address is not valid and the replied PARMLIST length is nonzero.
- The reply DATA address is not valid and the replied DATA length is nonzero.
- The reply PARMLIST length is shorter than the replied length.
- The reply DATA length is shorter than the replied length.

Action: Correct the values.

X'01000608'

Explanation: A resource-origin name is not valid.

Action: SPV.* cannot be the resource origin.

X'01000609'

Explanation: The request DATA length is not valid.

X'0100060C'

Explanation: Values in the CPRB for request PARMLIST (address or length) or request DATA (address or length) are not valid. The following could be true:

- The request PARMLIST address is not valid and the request PARMLIST length is nonzero.
- The request DATA address is not valid and the request DATA length is nonzero.

Action: Correct the values.

X'0100060E'

Explanation: The request DATA address is not valid. The request DATA address is not valid and the request DATA length is nonzero.

Action: Correct the request DATA address.

X'01000610'

Explanation: The reply PARMLIST address is not valid. The reply PARMLIST address is not valid and the reply PARMLIST length is nonzero.

Action: Correct the reply PARMLIST address.

X'01000611'

Explanation: A reply DATA length is not valid.

X'01000612'

Explanation: The reply DATA address is not valid. The reply DATA address is not valid and the reply DATA length is nonzero.

Action: Correct the reply DATA address.

L0 X'01004C30'

Explanation: The sum of the DATA length and the PARMLIST length exceeds X'E09C' bytes.

Action: Correct the connectivity programming request block (CPRB).

L1 X'01004C31'

Explanation: The resource is not defined in the resources table of this workstation.

Action: Check the configuration record.

L2 X'01004C32'

Explanation: There is no session with the called server.

Action: Connect the workstation where the requested server is installed.

L3 X'01004C33'

Explanation: A session is not defined. You are attempting to send a request to a workstation that is not defined in the LANDP workgroup configuration session table.

Action: Check the configuration record.

L5 X'01004C35'

Explanation: The server is not loaded.

Action: Check the initialization procedures.

L6 X'01004C36'

Explanation: The system detected an irrecoverable error from a local workstation.

Action: Try one or both of the following:

- Restart the workstation.
 - Check the LANDP log file to find the NetBIOS error that could be causing this L6 error.
-

L8 X'01004C38'

Explanation: There is no response from the server. The time-out value specified during configuration has been exceeded.

Action: Try the request again, check the status of the workstation, or increase the time-out value.

L9 X'01004C39'

Explanation: A LAN hardware failure has occurred.

Action: Try the following:

- Review all LAN connections and power-on status.
 - Correct any connection problems and start again, reloading any required LANDP components.
 - Check the LANDP log file to find the NetBIOS error that could be causing this L9 error.
-

LB X'01004C42'

Explanation: The CPRB or options control block format is not valid.

LE X'01004C45'

Explanation: The LAN server is not loaded.

LF X'01004C46'

Explanation: An optional parameter is not valid.

LG X'01004C47'

Explanation: A message cannot be sent.

Action: Try again.

LH X'01004C48'

Explanation: A response was received after the time-out value specified during configuration was exceeded.

LJ X'01004C4A'

Explanation: The system detected an access attempt without authorization level F.

LK X'01004C4B'

Explanation: The system detected an attempt to access protected resources from an unexpected workstation.

Action: Sign on to the system manager from this workstation.

LL X'01004C4C'

Explanation: A GETRPLY reply handle is not valid. The reply handle is zero or there is no 'RMTREQ NoWait' outstanding with this handle.

Action: Correct the value.

MQSeries Link server

MQSeries Link server

The following return codes are returned by the MQSeries Link server. The list is followed by **General actions** that apply to many of the codes, as indicated in the list entries.

X'0000' (0)

Causing functions: Any

Explanation: Successful operation.

Action: None required.

CQ X'4351'

Causing functions: BT, PQ, PI, GQ

Explanation: The call to MQCONN gave a bad reason code.

Action: See **General actions** at end of list.

DQ X'4451'

Causing functions: ES, EJ

Explanation: The call to MQDISC gave a bad reason code.

Action: See **General actions** at end of list.

ER X'4552'

Causing functions: Any

Explanation: There was general failure.

Action: See **General actions** at end of list.

GE X'4745'

Causing functions: GQ

Explanation: The call to MQGET gave a bad reason code.

Action: Check the MQSeries reason code found in the reply PARMLIST.

IT X'4954'

Causing functions: GQ

Explanation: One of the EHCGQ_BROWSE options was requested with an existing Queue Handle that is in use as part of a transaction. The GQ function is not processed.

Action: Change the program.

MX X'4D58'

Causing functions: Any

Explanation: The Maximum number of sessions has been reached.

Action: Increase the Total number of permitted sessions by use of the loader /T parameter. If this is already at the maximum, further sessions could be catered for by configuring & customizing another MQSeries Link server.

NM X'4E4D'

Causing functions: GQ

Explanation: No Message was returned by the MQGET.

Action: This may not be an error. If it is, see **General actions** at end of list.

OP X'4F50'

Causing functions: GQ, PQ & P1

Explanation: The PARMLIST options are incorrect.

Action: Change the program.

OQ X'4F51'

Causing functions: GQ, PQ

Explanation: The call to MQOPEN gave a bad reason code.

Action: See **General actions** at end of list.

P1 X'5031'**Causing functions:**

Explanation: The function called is not supported by this server.

Action: Check the request format and parameters.

P2 X'5032'

Causing functions: Any

Explanation: There is a length error.

Action: Change the program.

P4 X'5034'

Causing functions: Any

Explanation: There is an error with the PARMLIST.

Action: Change the program.

PE X'5045'

Causing functions: PQ, P1

Explanation: The call to MQPUT gave a bad reason code.

Action: See **General actions** at end of list.

SB X'5342'

Causing functions: Any

Explanation: The MQSeries Link server is already busy processing a previous request from the same session. If MQSeries Link server receives an RMTREQ NoWait request, it must receive a GETRPLY before the next RMTREQ.

Action: : Change the program.

SQ X'5351'

Causing functions: PQ, P1

Causing functions: CQ

Explanation: The call to MQCLOSE gave a bad reason code.

Action: See **General actions** at end of list.

TE X'5445'

Causing functions: CP, ET

Explanation: The call to MQCMIT gave a bad reason code.

Action: See **General actions** at end of list.

General actions: Often, a return code from MQSeries Link server is the result of a bad response from an MQSeries API call. When this occurs, check the MQSeries reason code in the Reply Parmlist against the MQSeries documentation. If logging is active, the MQSeries Link server's log file contains further details.

Magnetic stripe reader/encoder (MSR/E) server

The following codes are returned by the magnetic stripe reader/encoder (MSR/E) server. It supports the following devices:

- IBM 4717 Magnetic Stripe Reader
- IBM 4717 Magnetic Stripe Reader/Encoder
- IBM 4777 Magnetic Stripe Reader
- IBM 4777 Magnetic Stripe Reader/Encoder

Note: This server also supports the MSR/E component of the IBM 4778 PIN Pad Magnetic Stripe Reader. See “Personal identification number (PIN) pad server” on page 205 for a list of PIN pad return codes.

Successful operation

X'00000000'

Causing functions: CH, CL, DV, EC, KL, OP, RD

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR, AT, WR, WT

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I5 X'01004935'

Causing functions: CH, RD

Explanation: A previous function has not finished processing.

Action: Try again.

I9 X'01004939'

Causing functions: Any

Explanation: The resource is already assigned.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: Any

Explanation: A length is not correct.

Action: Check the data length parameters.

P3 X'01005033'

Causing functions: AR, CH, CL, DV, EC, KL, RD, WR

Explanation: A previous open is missing.

P4 X'01005034'

Causing functions: AT, DV

Explanation: A parameter is not valid.

Action: Check the contents of DATA.

P6 X'01005036'

Causing functions: AT, CH, WR, WT

Explanation: A character is not valid. Data passed does not agree with the parameters loaded in the MSR/E.

P7 X'01005037'**Causing functions:** CH, RD**Explanation:** There is no data pending to pass to the application, or there is no status pending to pass to the application.

P8 X'01005038'**Causing functions:** AR, AT, CH, CL, DV, EC, RD, WR, WT**Explanation:** A previous function is in process.**Action:** Cancel the function or wait until it finishes processing.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'**Causing functions:** Any**Explanation:** A general failure has occurred.

U3 X'01005533'**Causing functions:** Any**Explanation:** A transmission error has occurred, or the MSR/E device is attached to the wrong connector or adapter.**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** A device self-test failure or an OS/2 operating system error has occurred.**Action:** Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'**Causing functions:** Any**Explanation:** An MSR/E device internal error has occurred.**Action:** Run the personal computer system and MSR/E device diagnostic programs, and then follow the recommended action.

U6 X'01005536' MSR/E server**Causing functions:** OP**Explanation:** The device driver name is not correct, the device driver is not installed, or there is a device driver error.

Native X.25 server

Native X.25 server

The following codes are returned by the native X.25 server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: SH

Explanation: A connection is not established.

Action: Check the workstation application program logic, connection status, and equipment.

I2 X'01004932'

Causing functions: CN, RH, RL, SH

Explanation: The communication adapter or cabling are malfunctioning.

Action: Check the Communications Server for OS/2 Warp status.

I3 X'01004933'

Causing functions: CN

Explanation: No circuits are available.

Programming errors

P0 X'01005030'

Causing functions: Any

Explanation: This error is returned when the application program attempts a function before an OP function request. It occurs at the start of processing or when the LANDP session is being used by another application program.

P1 X'01005031'

Causing functions: Any

Explanation: The function is not supported. The function code is not correct or the combination of function code, parameters, and data are not consistent or not supported.

Action: Change the program.

P2 X'01005032'

Causing functions: Any

Explanation: There is a length error. The following could be true:

- Data lengths are not correct for the specified function.
- For the RH function: The data length is insufficient to hold all data arriving from the partner.

Data has been truncated to the specified length.

Action: Correct the program.

P3 X'01005033'

Causing functions: RH

Explanation: There are no pending messages.

P3 X'01005033'

Causing functions: SH

Explanation: The message could not be sent because the line is busy.

Action: Try again later.

P5 X'01005035'

Causing functions: CN, RL

Explanation: The following could be true:

- For the CN function: A previous CN function is in progress, but a circuit is not yet established.
- For the RL function: No previous CN function was requested or an RL function is in progress.

P6 X'01005036'**Causing functions:** SH**Explanation:** A message sent is accepted with an indication that the input buffer contains messages to be read.**Action:** This is provided as information only to a program that can read this message by requesting an RH function.

P7 X'01005037'**Causing functions:** CN**Explanation:** A CN function has been requested for an incoming circuit, but no call has been received for this session.**Action:** On an incoming circuit, the CN function should only be requested after an RH function with flag1 set to “f” has been received.

P8 X'01005038'**Causing functions:** CN, DC**Explanation:** A circuit was previously established.

P9 X'01005039'**Causing functions:** Any**Explanation:** The command was rejected. The session identifier specified in the request PARMLIST is not valid.**Action:** Check VCM.CFG, PIPE.CFG, and the configuration parameters.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U8 X'01005538'**Causing functions:** Any**Explanation:** Communications Server for OS/2 Warp or a link is not started.

U9 X'01005539'**Causing functions:** Any**Explanation:** An OS/2 error has occurred. There is a lack of resources or an error in the operating system.

Native X.25 server

Clear and reset packets

Native X.25 clear and reset packets can be generated and sent to the network by X.25 adapter support, X.25 coprocessor support, or the LANDP server.

Codes used in clear or reset packets sent by the X.25 adapter are explained in the *X.25 Adapter User's Guide*. The cause code is always 00.

Codes used in clear or reset packets sent by the X.25 coprocessor are processed in accordance with Telecommunication Standardization Sector (TSS) standards.²

Codes used in clear and reset packets sent by the LANDP server are as follows:

- X'E2'** Connection busy: working with somebody else.
- X'E3'** Connection not accepting incoming calls.
- X'E4'** Local application program name unknown or remote calling address incorrect.
- X'E5'** Connection cleared by application program: connection previously active.
- X'E9'** Application program does not accept calls.
- X'EA'** Reset received in a SVC.

The cause code is always set to zero.

² Formerly Comite Consultatif International Telegraphique et Telephonique or International Consultative Committee on Telegraph and Telephone (CCIT).

Object post box server

The following codes are returned by the object post box server (OPBS).

Note: Messages displayed by this server are listed under “Batch machine facility, object post box server, and MAIL program” on page 336.

X'00000000'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The function was performed.

Action: None required.

C1 X'01004331'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The request parameter length is not correct.

C2 X'01004332'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The request data length is not correct.

C3 X'01004333'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: A protocol error has occurred.

C4 X'01004334'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The reply data length is not correct.

C5 X'01004335'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The reply parameter length is not correct.

C6 X'01004336'

Causing functions:

Explanation: The function code is not valid.

ED X'01004544'

Causing functions: LI, LO, RM, WM

Explanation: The transaction closed successfully. There is no more data.

P1 X'01005031'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The initialization process was not performed.

Action: Try again later.

P2 X'01005032'

Causing functions: SM

Explanation: The destination user ID is not valid.

P3 X'01005033'

Causing functions: RM

Explanation: A message is not available.

P4 X'01005034'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: The requestor user ID is not valid.

P5 X'01005035'

Causing functions: RM

Explanation: The message is locked.

R1 X'01005231'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: There are no available resources to process the function now.

Action: Free resources or try again later.

U1 X'01005531'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: An unexpected response was received from SHFILE##.

Object post box server

U2 X'01005532'

Causing functions: BO, LI, LO, RD, RM, SM, WM

Explanation: An unexpected response was received from SMGR.

Personal identification number (PIN) pad server

The following codes are returned by the personal identification number (PIN) pad server. It supports the following devices:

- IBM 4718 PIN Key Pad
- IBM 4778 PIN Pad Magnetic Stripe Reader

Note: The PIN pad server also supports the magnetic stripe reader/encoder component of the 4778 device. It issues the same return codes as the MSR/E server, except for those codes caused by encoding functions, which are not supported by the 4778 PIN pad MSR device. See “Magnetic stripe reader/encoder (MSR/E) server” on page 198 for a list of MSR/E return codes.

Successful operation

X'00000000'

Causing functions: CL, GA, IV, KL, LM, LK, LP, OP, RD, RN, VA

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I3 X'01004933'

Causing functions: AR, GA, IV, LM, LK, LP, VA

Explanation: The referenced key is not loaded.

I4 X'01004934'

Causing functions: RD

Explanation: The PIN is not valid.

I5 X'01004935'

Causing functions: RD

Explanation: A previous function has not finished processing.

Action: Try again.

I6 X'01004936'

Causing functions: RD (AR option M)

Explanation: The pressed button is not valid.

I7 X'01004937'

Causing functions: AR (Options C and E)

Explanation: This function cannot be used in clear mode.

Action: Enter or load the master key in encrypted mode.

I9 X'01004939'

Causing functions: Any

Explanation: The resource is assigned to another personal computer.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: Any

Explanation: The length is not correct.

Action: Check the data length parameters.

P3 X'01005033'

Causing functions: AR, CL, GA, IV, KL, LM, LK, LP, RD, RN, VA

Explanation: A previous open is missing.

P4 X'01005034'

Causing functions: AR, GA, IV, LM, LK, LP, VA

Explanation: A flag is not valid.

Action: Check the PARMLIST flags.

P5 X'01005035'

Causing functions: AR, GA, LK, LM, VA

Explanation: The key parity is not valid.

Action: Correct the key.

P6 X'01005036'

Causing functions: LP

Explanation: The decimalization table is not valid.

Action: Check the contents of DATA.

P6 X'01005036'

Causing functions: VA

Explanation: The message authentication code (MAC) is not valid.

Action: Correct the contents of DATA.

P7 X'01005037'

Causing functions: RD

Explanation: There is no data pending to pass to the application.

P8 X'01005038'

Causing functions: AR, CL, GA, IV, LM, LK, LP, RN, VA

Explanation: A previous function is in process.

Action: Cancel the function or wait until it finishes.

P9 X'01005039'

Causing functions: AR, AT, DV, EC, OP, RD, WD

Explanation: The function is not supported. Magnetic stripe support is not attached or loaded, or a liquid crystal display (LCD) is not available.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: There was a general failure.

U4 X'01005534'

Causing functions: Any

Explanation: A device self-test failure or OS/2 operating system error has occurred.

Action: Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'

Causing functions: AR, IV, KL, LM, LK, LP, RD, RN

Explanation: A PIN pad device internal error has occurred.

Action: Run the personal computer system and PIN pad device diagnostic programs, and then follow the recommended action.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver installation error.

Program-to-Program communications (PPC) server

The following codes are returned by the program-to-program communications (PPC) server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

P0 X'01005030'

Causing functions: Any, except OP

Explanation: This error occurs when the transaction program requests any other function before an OP function. It occurs at the beginning or when the LANDP conversation has been released for some reason. The error also occurs if the transaction program calls PPC with an invalid conversation event/handle in the request parameter.

Action: The program must request an OP function or correct the application program.

P1 X'01005031'

Causing functions: Any

Explanation: The function is not supported. The function code is not correct or the combination of function code, parameters, and data is not consistent or supported.

Action: Fix the error in the program.

P2 X'01005032'

Causing functions: Any

Explanation: Data lengths are not correct for the specific function.

Action: Fix the program.

P3 X'01005033'

Causing functions: RD

Explanation: There are no messages to read.

P4 X'01005034'

Causing functions: RD

Explanation: A previously read message requires a response from the application program.

This occurs when the transaction program requests an RD function with flag5=R. This means that the transaction program manages the sending of responses. As the PPC server requests this response, the program must provide a positive or negative response.

P5 X'01005035'

Causing functions: Any

Explanation: An OP function is in progress.

P6 X'01005036'

Causing functions: SD

Explanation: The function was accepted and indicates that there is a message to read. This is provided as information for the application program, which in turn can issue an RD function to read this message.

Action: None (information).

P7 X'01005037'

Causing functions: CL, SD

Explanation: The system is unable to send data because of a communication protocol error. The error could be caused by the following:

- Trying to send data in 'receive' status
- A response pending to be sent
- Trying to send a response, but no response is pending

Action: Check the transaction program logic and conversation status.

P8 X'01005038'**Causing functions:** OP**Explanation:** The function request was previously requested. A conversation is already established.

P9 X'01005039'**Causing functions:** OP**Explanation:** The LU, mode_name, or tp_name identifier is not valid.**Action:** Check the Communications Server for OS/2 Warp configuration file.

P9 X'01005039'**Causing functions:** RD, SD, CL, GS**Explanation:** The transaction program calls PPC without specifying a conversation event/handle.**Action:** Check the transaction program.

PB X'01005042'**Causing functions:** Any**Explanation:** A request that is in progress has not replied.

PD X'01005044'**Causing functions:** Any**Explanation:** The PPC server has no data buffers to send data to, or receive data from, Communications Server for OS/2 Warp.

PZ X'0100505A'**Causing functions:** Any**Explanation:** A parameter length is not valid.

Device errors

U1 X'01005531'**Causing functions:** CL, OP, RD, SD**Explanation:** A conversation was not allocated for status reasons.**Action:** Check the transaction program logic, session status, conversation status, and equipment.

U2 X'01005532'**Causing functions:** OP**Explanation:** Conversation not allocated, try again later.**Action:** It may be possible to allocate the conversation by repeating the OP function after a suitable delay. (The cause of this error could, for example, be caused by a lack of free sessions and trying again later may find one free.) Limit the number of retries as the allocation request may never succeed. Limit the frequency of retries to avoid network congestion.

U8 X'01005538'**Causing functions:** Any**Explanation:** Communications Server for OS/2 Warp or the link is not started.

U9 X'01005539'**Causing functions:** Any**Explanation:** An OS/2 operating system error has occurred. It can be caused by a lack of system resources or an operating system error.

Query server

Query server

The following codes are returned by the query server.

X'0'

Mode: Any

Explanation: The operation finished successfully.

Action: None required.

AD

Mode: Any

Explanation: The specified function or operator is not valid.

Action: Check the application.

BL

Mode: 'shfile##'

Explanation: The database description (DBD) is locked.

Action: Try again later.

DH

Mode: 'shfile##'

Explanation: A database description (DBD) hold is needed for this operation. Obtain it by requesting the EX function.

Action: Check the program.

DJ

Mode: 'shfile##'

Explanation: A record lock is needed for this operation. Obtain it by requesting the functions HN, HP, HU, or KN, KP, KU.

Action: Check the program.

DQ

Mode: Any

Explanation: The requested function needs log in Query.

Action: Check the program. Log in *Query* mode with the OQ function.

ED

Mode: Query

Explanation: The end of data rows was reached.

Action: None (information).

EE

Mode: Query

Explanation: A structured query language (SQL) command error has occurred.

Action: Try the following:

- Check the code and message in the data area.
 - Check the program.
-

EP

Mode: 'shfile##'

Explanation: A primary error has occurred.

Action: Try the following:

- Check the SQL error code in the data area.
 - Check the program.
-

FD

Mode: Any

Explanation: The server has not been started.

Action: Check the program or issue the GF function.

GB

Mode: 'shfile##'

Explanation: The end of the record list was reached. There are no more records.

Action: None (information).

GE

Mode: 'shfile##'

Explanation: No such record was found in GU, HU.

Action: None (information).

IE**Mode:** Any**Explanation:** An internal error has occurred.**Action:** Contact a support representative for assistance. Save traces.

II**Mode:** 'shfile##'**Explanation:** There is a unique index repeated value for IS or RP.**Action:** None (information).

IQ**Mode:** Query**Explanation:** The query handle is not valid or there are no more handles left.**Action:** Check the program.

LI**Mode:** Any**Explanation:** Logging has been disabled.**Action:** Check the loading parameters.

ME**Mode:** Any**Explanation:** A memory allocation error has occurred: there is not enough memory.**Action:** Add memory to the server machine or check the loading parameters and the LAN configuration.

NA**Mode:** 'shfile##'**Explanation:** This function needs the transaction opened.**Action:** Check the program.

NC**Mode:** Any**Explanation:** The server is not closed: servicing is started.**Action:** None (information).

NO**Mode:** Any**Explanation:** The requested function needs log in 'shfile##' mode.**Action:** Check the program. Log in 'shfile##' mode with the OO function.

NP**Mode:** 'shfile##'**Explanation:** The following could be true:

- The program control block (PCB) is not valid or a PCB name was not supplied.
- The table or column name supplied for a new PCB is not valid.

Action: Check the program.

NQ**Mode:** Query**Explanation:** There is no open query for the requested handle.**Action:** Check the program.

NS**Mode:** Any**Explanation:** There are no more sessions for one of the client workstations or the session handle is not valid.**Action:** Customize with additional sessions by increasing the EHCSQL## loading parameter /S, or check the application.

NT**Mode:** Any**Explanation:** The requestor PC-ID is not customized to be serviced.**Action:** Check the LAN configuration.

Query server

OC

Mode: 'shfile##'

Explanation: The maximum number of concurrent requests has been exceeded.

Action: Try again later.

If code OC is returned repeatedly, increase the EHCSQL## loading parameter /T.

OP

Mode: Any

Explanation: An internal error has occurred.

Action: Open pending. Deferred open mode. Issue OpenDB2.

PE

Mode: 'shfile##'

Explanation: There are existing program control blocks (PCBs). The function requires erasing all PCB definitions that refer to the same database description (DBD).

Action: Erase all the related PCBs, and then try again.

PE

Mode: Query

Explanation: Parameters are expected. The statement contains '?' (parameter markers), but not enough were pre-fetched.

Action: Check the program and use the SP function to pre-fetch parameters.

PL

Mode: Any

Explanation: The log is playing.

Action: No service can be issued while restoring a database.

QE

Mode: Query

Explanation: A query error has occurred.

Action: Try the following:

- Check the code and message in the data area.
 - Check the program.
-

QI

Mode: 'shfile##'

Explanation: The qualifier for index creation or deletion is not valid.

Action: Check the program.

RE

Mode: 'shfile##'

Explanation: Resources are exhausted.

Action: Contact a support representative for assistance. Save traces.

RL

Mode: 'shfile##'

Explanation: The resource is locked. Time-out expired without return. Statement interrupted.

Action: Try again later.

If the code RL is returned repeatedly, parallel processes may be locking the same data. In this case, to improve performance, modify the EHCSQL## loading parameters. Reduce the /T and /P parameters, keeping the /T value one more than the /P value.

SE

Mode: Any

Explanation: A thread spawning error has occurred: the server cannot start a subprocess.

Action: Check the **OS/2 THREADS** parameter.

TE

Mode: Any

Explanation: The request was queued by the system.

Action: Perform an RW function to avoid processing the request.

If code TE is returned repeatedly, increase the EHCSQL## loading parameter /P.

TI**Mode:** 'shfile##'**Explanation:** The type is not valid. The type of the field specified in the DD function is not valid or not supported.**Action:** Try the following:

- Check the program.
- Verify the DD function input block.

TL**Mode:** Any**Explanation:** The length of the passed data or parameters is not valid.**Action:** Check the program.

TO**Mode:** 'shfile##'**Explanation:** The transaction is open. This function requires a closed transaction.**Action:** Check the program.

YA**Mode:** 'shfile##'**Explanation:** The transaction is already open.**Action:** None (information).

YO**Mode:** 'shfile##'**Explanation:** Already opened in online mode ('shfile##').**Action:** None (information).

YP**Mode:** Any**Explanation:** GF function was already requested.**Action:** None (information).

YQ**Mode:** Query**Explanation:** Already logged in query mode.**Action:** None (information).

Query server utility programs

When using the query server utility programs, error codes are returned by either the query server or the query server utility programs. If the codes are returned by the query server, the corresponding server function and return code are displayed.

The following codes are returned by the query server utility programs.

X'90' (144)

Explanation: The command line parameters contain a syntax error.

Action: Change the command line.

X'91' (145)

Explanation: A parameter value is out of range.

Action: Change the parameter value.

X'9D' (157)

Explanation: An error occurred while opening a log file. The log file could not be opened.

Action: Make sure the access path exists and the log file is not in use by another process.

X'9E' (158)

Explanation: There is an error in the log format type. The existing log file does not have a correct format.

Action: Generate a correct file or delete the existing log file.

X'9F' (159)

Explanation: A TYPELOG2 program error occurred while reading a log file record.

Action: Contact a support representative.

X'A7' (167)

Explanation: An error occurred while calling an OS/2 database utility program.

Action: Check the system software installation.

X'A8' (168)

Explanation: This is an unexpected return code from the query server.

Action: Check the LANDP for OS/2 installation and server loading parameters.

X'A9' (169)

Explanation: A user interrupted the process. The database recovery process did not finish because of operator intervention.

Action: None.

Remote change management services (RCMS)

The following codes are returned by remote change management services (RCMS).

X'082FF001'

Explanation: A logical block is out of range for recovery with the RETRIEVE command.

X'082FF004'

Explanation: No status is available.

X'0833F001'

Explanation: A logical block is out of range for recovery with the ADD or REPLACE DATA command.

X'328A0108'

Explanation: This is an unknown command.

X'32B00001'

Explanation: This is an operating system error for the ADD DATA command.

X'32B00002'

Explanation: This is a cryptographic error for the ADD DATA command.

X'32B00202'

Explanation: The ADD DATA command was rejected because the file name already exists.

X'32B10001'

Explanation: This is an operating system error for the REPLACE DATA command.

X'32B10002'

Explanation: This is a cryptographic error for the REPLACE DATA command.

X'32B10101'

Explanation: This is a coding or critical error.

X'32B20001'

Explanation: This is an operating system error for the DELETE command.

X'32B20002'

Explanation: This is a cryptographic error for the DELETE command.

X'32B20104'

Explanation: The 'delete' file was rejected. The file does not exist or the path cannot be found.

X'32B40204'

Explanation: The 'delete' file is not authorized.

X'32B50001'

Explanation: This is an operating system error for the RETRIEVE command.

X'32B50002'

Explanation: This is a cryptographic error for the RETRIEVE command.

X'32B50003'

Explanation: The 'retrieve' names were rejected because the directory is empty.

X'32B50201'

Explanation: The 'retrieve' file was rejected. The file does not exist or no path was found.

X'32B60001'

Explanation: This is an operating system error for the RETRIEVE BY CATALOG command.

X'32B60002'

Explanation: This is a cryptographic error for the RETRIEVE BY CATALOG command.

X'32B60105'

Explanation: The RETRIEVE BY CATALOG command was rejected because there was no file name in the specified catalog.

X'32B60201'

Explanation: The RETRIEVE BY CATALOG command was rejected because the catalog cannot be found.

X'32B70001'

Explanation: This is an operating system error for the CLIST command.

X'32B70002'

Explanation: This is a cryptographic error for the CLIST command.

X'32B70003'

Explanation: The CLIST file is too big or run # overflow.

X'32B70004'

Explanation: The RCMS.ACK file cannot be accessed.

X'32B70005'

Explanation: The CLIST processing failed at the node.

X'32B70007'

Explanation: The CLIST was executed, but COMMAND.COM space was not recovered.

X'32B80001'

Explanation: This is an operating system error for the SEND MSG command.

X'32B80002'

Explanation: This is a cryptographic error for the SEND MSG command.

X'32B80003'

Explanation: The phase was not found.

X'32B80004'

Explanation: This is a system manager error for the SEND MSG command.

X'32B90001'

Explanation: This is an operating system error for the QUERY command.

X'32B90002'

Explanation: This is a cryptographic error for the QUERY command.

X'32B90003'

Explanation: All acknowledge characters could not be deleted for the QUERY command.

X'32BA0001'

Explanation: An INITSELF contents error occurred while releasing a held phase.

X'32BA0002'

Explanation: An operating system error occurred while updating a plan details file.

X'32BA0003'

Explanation: An operating system error occurred while getting a phase to process. Held phases remote release stopped.

X'32BA0004'

Explanation: An operating system error occurred while updating a plan details file and getting a phase to process. Held phases remote release stopped.

X'32BA0005'

Explanation: A translation error occurred while processing a plan details file record. Held phases remote release stopped.

X'32BA0006'

Explanation: An operating system error occurred while updating a plan details file and a translation error occurred while processing a plan details file record. Held phases remote release stopped.

X'32BA0007'

Explanation: An operating system error occurred while getting a phase to process and the phase could not be found. Held phases remote release stopped.

X'32BA0008'

Explanation: A translation error occurred while processing a plan details file record and the phase could not be found. Held phases remote release stopped.

X'32BB0001'

Explanation: A translation error has occurred.

X'32E90002'

Explanation: The cryptographic process failed and first-in-chain (FIC) could not be decrypted to get the command.

X'32E90201'

Explanation: The RCMS.LNF file cannot be found.

X'32E90202'

Explanation: The logical name is not valid.

X'32E90203'

Explanation: A negative response was received while sending data.

X'32E90204'

Explanation: A cancel request was received while receiving data.

X'32E90205'

Explanation: The protocol is not valid.

X'32E90206'

Explanation: The command ended because the session has been lost. RCMS cannot determine the cause of the session loss.

Action: Check LANDP, Communications Server for OS/2 Warp, or VTAM traces for possible causes.

Shared-file servers

Shared-file servers

The following codes are returned by one or more of the following shared-file servers:

- Shared-file server
- Shared-file distributor server
- Shared-file replicator server

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

X'00000000'

Causing functions: QP

Explanation: The program control block (PCB) information has been returned.

Action: None required.

X'00000000'

Causing functions: RH

Explanation: The header information has been returned.

Action: None required.

AD X'01004144'

Causing functions:

Explanation: The function is not supported.

AD X'01004144'

Causing functions: FU, GU, HU, KU

Explanation: A search parameter is not correct or cannot be found.

BL X'0100424C'

Causing functions: EX, HN, HP, HU, IS, KN, KP, KU

Explanation: The shared file is blocked by another workstation operating in batch mode, or another application is holding the database description (DBD) in exclusive use.

Action: Rollback is recommended.

CE X'01004345'

Causing functions: Any

Explanation: Critical Error: The first byte of DATA contains the return code. If the error is returned by the shared-file distributor server, 12 bytes of additional information are returned in the reply data area, as follows:

- Server id: The server name of the server causing the error.
- WS id: The identifier of the workstation where the server causing the error is running.
- Return code: The error code returned by the server.

Action: See "Critical errors" on page 222 for more information.

CO X'0100434F'

Causing functions: BT, OB

Explanation: Job start is not allowed. The system is in the process of closing.

DA X'01004441'

Causing functions: RP

Explanation: An attempt was made to replace a record with keys that cannot be changed. Updating records with keys that have this attribute is not allowed.

DB X'01004442'

Causing functions: CB, OB

Explanation: Batch opening was denied because the shared-file server is open for online work.

DH X'01004448'

Causing functions: DL, HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The shared file must be on hold for this batch request.

DJ X'0100444A'**Causing functions:** DL, RP**Explanation:** The record is not on hold.

DO X'0100444F'**Causing functions:** BT, ET, OO**Explanation:** Online openings are denied because the shared-file server is open for batch requests.

E1 X'01004531'**Causing functions:** CB, CO, CP, DL, ET, IS, RB, RP, ZD**Explanation:** Writing to, or reading from (RB only), the first log file failed. The operation is not performed.**Action:** Try the operation again. See "Critical errors" and "Primary input/output errors" on page 223 for more information.

E2 X'01004532'**Causing functions:** CB, CO, CP, DL, ET, IS, RB, RP, ZD**Explanation:** Writing to, or reading from (RB only), the second log file has failed. The operation is not performed.**Action:** Try the operation again. See "Critical errors" and "Primary input/output errors" on page 223 for more information.

EP X'01004550'**Causing functions:** Any**Explanation:** A primary I/O error has occurred. The error is an irrecoverable failure.**Action:** See "Primary input/output errors" on page 223 for more information.

FC X'01004643'**Causing functions:** DL, IS**Explanation:** Internal error: corrupt FREECHAIN.**Action:** Restart the shared-file server with the /R: parameter.

FD X'01004644'**Causing functions:** Any, except GF, SR, TS**Explanation:** The function was denied because a GF function was not received.

GB X'01004742'**Causing functions:** FN, FP, GN, GP, HN, HP, KN, KP**Explanation:** Either the end of the shared file has been reached while processing an FN, GN, HN, or KN function, or the beginning of the shared file has been reached while processing an FP, GP, HP, or KP function.

The next FN, GN, HN, or KN function returns the first record. The next FP, GP, HP, or KP function returns the last record.

GE X'01004745'**Causing functions:** FU, GU, HU, KU**Explanation:** The record with the specified key does not exist.

II X'01004949'**Causing functions:** IS, RP**Explanation:** The following could be true:

- IS function: An attempt was made to insert a duplicate of a key that must be unique. This is not allowed.
- RP function: An attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.

LI X'01004C49'**Causing functions:** RB**Explanation:** The log file is inhibited.**Action:** A rollback operation is not possible.

MI X'01004D49'**Causing functions:** QP**Explanation:** More information is pending.

Shared-file servers

NA X'01004E41'

Causing functions: CP, DL, ET, HN, HP, HU, IS, KN, KP, KU, RB, RP

Explanation: A transaction has not been opened.

NB X'01004E42'

Causing functions: Any, except GF, OB, OO, RF, SR, TS

Explanation: The function was denied because a batch process has not been opened.

NC X'01004E43'

Causing functions: TS

Explanation: The shared files have not been closed. A workstation ID and a process ID are in request DATA for open transactions.

NO X'01004E4F'

Causing functions: BT, CP, DL, ET, FN, FP, FU, GN, GP, GU, HN, HP, HU, IP, IS, RB, RP, KN, KP, KU

Explanation: The function was denied because online mode was not initialized.

NP X'01004E50'

Causing functions: Any

Explanation: The program control block (PCB) does not exist, or the PCB is not blanks or nulls. The following could also be true:

- QP function: The wrong PCB name was requested.
- Shared-file distributor server: A request was made to a PCB owned by a server that is either not loaded or loaded but not ready to receive requests.

Action: For the shared-file distributor server, load the server owned by the PCB.

NS X'01004E53'

Causing functions: OS

Explanation: The following could be true:

- For the shared-file server: No more sessions are available.
- For the shared-file distributor and replicator servers: No more memory is available.

NS X'01004E53'

Causing functions: Any

Explanation: No session has been opened with the supplied session identifier.

NT X'01004E54'

Causing functions: Any

Explanation: The workstation is not customized to use the shared-file server.

OP X'01004F50'

Causing functions: Any

Explanation: The log file is not open. The file is remote and was not accessible at server loading time, or it does not exist and you must run the GENLOG utility program.

The following could also be true:

- The initialization process has not ended.
- The server is not ready to work. The replicator server does not have an up-to-date shared file loaded.
- The server is doing the synchronization process. The replicator server is ending the synchronization process for a shared file.

Action: When the shared-file servers return this error, a qualifier is also returned in the reply DATA area. It indicates the situation that is causing the error.

Try the following, depending on the cause of the error:

Qualifier	What to do
0	If the log file is not open, start the OPENLOG utility to retry opening the log file. See the <i>LANDP Servers and System Management</i> book for information about the utility program.
1	If the initialization process has not ended, wait until initialization ends and then try the operation again.
2	If the server is not ready to work, load an up-to-date shared file.
3	If the server is doing the synchronization process, wait until the process finishes and then try the operation again.

PI X'01005049'

Causing functions: GF, RF

Explanation: The parameter for a GF or RF function is not valid.

- GF function: The request DATA length must be at least X'0001' and have 'O' and 'B' in the first byte of the data area.
- RF function: The request DATA length must be X'0000' or greater than X'0000' and have 'b', 'N', or 'F' in the first byte of the data area. (b represents a space character.)

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

RL X'0100524C'

Causing functions: HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The record is locked by another workstation. For the RP function, an attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.

Action: The following are recommended actions based on the reply DATA values:

Value	Action
R	Retry.
A	Rollback if you want to follow the deadlock avoidance protocol. Try again if you want to follow the deadlock detection protocol.
D	Rollback (deadlock detected).

TL X'0100544C'

Causing functions: Any

Explanation: The specified request DATA length does not match the expected length for the requested function.

TL X'0100544C'

Causing functions: FU, GU, HU, KU

Explanation: When using direct indexed access mode, this code could be returned when the request DATA length is set to 1, instead of 0.

TO X'0100544F'

Causing functions: HL, IL

Explanation: A transaction is open.

Action: Close the transaction or close batch.

XI X'01005849'

Causing functions: GF

Explanation: The state of this XLR server is in doubt because EHCSAM could not confirm if the backup server did a takeover since the last time this server was run.

Action: If the backup did not take over, use EHCXLR utility to override and then perform another GF.

If the backup did take over, start it first and then restart this server.

YA X'01005941'

Causing functions: BT

Explanation: A transaction is already open.

YB X'01005942'

Causing functions: OB

Explanation: The shared file is already open in batch mode.

YO X'0100594F'

Causing functions: OO

Explanation: The shared file is already open in online mode.

YP X'01005950'

Causing functions: GF

Explanation: The shared file is already open.

Shared-file servers

Critical errors

When a critical error occurs, as indicated by return codes X'01004345', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:
 - X'13' Disk is write-protected.
 - X'14' Unknown unit.
 - X'15' Drive is not ready.
 - X'16' Unknown command.
 - X'17' Cyclic redundancy check (CRC) error.
 - X'18' Bad drive request structure length.
 - X'19' Disk seek error.
 - X'1A' Unknown media type.
 - X'1B' Sector not found.
 - X'1D' Device write fault.
 - X'1E' Device read fault.
 - X'1F' Hardware failure.
 - X'20' Sharing violation.
 - X'21' Lock violation.
 - X'22' Disk change not valid.
 - X'23' File control block (FCB) unavailable.
 - X'24' Sharing buffer overflow.
- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCII string consisting of a maximum of 80 bytes. An ASCII string is a normal string that ends with a null character.

When a critical error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default drive and directory.

The file name is in the format:

HHmmsshh.TRC

where:

HH is hours.
mm is minutes.
ss is seconds.
hh is hundredths of seconds.

IBM support representatives need the trace file *HHmmsshh*.TRC if you contact them for assistance.

Primary input/output errors

When primary I/O errors occur, as indicated by return codes X'01004550', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:

X'02' File not found.

X'03' Path not found.

X'04' Too many open files.

X'05' File access denied.

X'06' Handle not valid.

X'0C' Access code (file mode) not valid.

X'0F' Drive number not valid.

X'70' Disk is full.

Note: For any other error returned by the operating system, refer to the *OS/2 Programming Tools and Information Version 1.2: Control Program Programming Reference* book.

- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCII string consisting of a maximum of 80 bytes. An ASCII string is a normal string that ends with a null character.

When a primary I/O error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default drive and directory.

The file name is in the format:

HHmmssh.TRC

where:

HH is hours.

mm is minutes.

ss is seconds.

hh is hundredths of seconds.

IBM support representatives need the trace file *HHmmssh*.TRC if you contact them for assistance.

Shared-file utilities

Shared-file utility programs

The following codes are returned by the shared-file BACKUP and RESTORE utility programs.

X'00' **(000)**

Explanation: The program ended successfully.

Applies to: Backup, Restore

X'01' **(001)**

Explanation: Parameters are not valid.

Applies to: Backup, Restore

X'92' **(146)**

Explanation: Old and new log files cannot be chained.

Applies to: Restore

X'96' **(150)**

Explanation: The log file does not exist.

Applies to: Backup, Restore

X'97' **(151)**

Explanation: An I/O error has occurred.

Applies to: Backup, Restore

X'98' **(152)**

Explanation: Transactions are open.

Applies to: Backup

X'A0' **(160)**

Explanation: The log file is empty.

Applies to: Backup

X'A1' **(161)**

Explanation: The log file is in use by another process.

Applies to: Backup, Restore

X'A2' **(162)**

Explanation: The old log file does not exist.

Applies to: Restore

X'A8' **(168)**

Explanation: A log file is an old version.

Action: Try running the GENLOG utility program to create a new log file.

Applies to: Backup, Restore

X'AD' **(173)**

Explanation: The file LOG2.DAT was not found.

Applies to: Backup, Restore

X'AE' **(174)**

Explanation: The log file LOG.DAT is not at the correct level of LOG2.DAT.

Applies to: Backup, Restore

X'AF' **(175)**

Explanation: The log file LOG2.DAT is not at the correct level of LOG.DAT.

Applies to: Backup, Restore

X'B0' **(176)**

Explanation: Log file LOG.DAT is truncated. Forward recovery cannot be performed.

Applies to: Restore

X'B1' **(177)**

Explanation: Some data might not have been updated to data files, or data in the log file is needed by a parent server.

Applies to: Backup

SNA server

The following codes are returned by the SNA server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: RH, SH

Explanation: An LU-LU session is not established.

I2 X'01004932'

Causing functions: CL, CN, OP, RH, SH

Explanation: The communication adapter or cabling are malfunctioning.

Action: Restart Communications Server for OS/2 Warp or check the equipment.

Programming errors

P0 X'01005030'

Causing functions: CL, GS, OP, RH, RL, SH

Explanation: A previous CN function was not requested or an RL is in progress.

P1 X'01005031'

Causing functions: None

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: RH

Explanation: There is a length error. The reply DATA length specified in the CPRB is insufficient for a message from the host. The message has been truncated to the specified length.

Action: Check the program.

P2 X'01005032'

Causing functions: SH

Explanation: There is a length error. The request DATA length specified in the CPRB must be between X'0000' and X'1000'. See the *LANDP Programming Reference* book for more specific information.

Action: Check the program.

P2 X'01005032'

Causing functions: CL, OP

Explanation: There is a length error. The request DATA length specified does not correspond to that specified in the OP or CL command or an INITSELF or TERMSELF was specified and was invalid.

Action: Check the program.

P2 X'01005032'

Causing functions: CN, GS, RL

Explanation: There is a length error. The request and reply DATA length specified in the CPRB must be X'0000'.

Action: Change the program.

P2 X'01005032'

Causing functions: DC, QC

Explanation: There is a length error. The request DATA length specified in the CPRB must be X'006C'.

Action: Change the program.

SNA server

P3 X'01005033'

Causing functions: RH

Explanation: There are no pending messages.

P3 X'01005033'

Causing functions: SH

Explanation: Internal resources are temporarily unavailable. The SNA server acts appropriately.

Action: The program should wait, and then try again.

P4 X'01005034'

Causing functions: RH, CL, OP, SH

Explanation: There is a previous message read with flag5=R that requires a response, or a response is required at end of chain if CN flag5 was M.

P5 X'01005035'

Causing functions: OP

Explanation: An OP function is in progress.

Action: Check the program.

P5 X'01005035'

Causing functions: SH

Explanation: A previous SH function is in progress.

Action: The program should wait and then try again.

P5 X'01005035'

Causing functions: CN, RL, RH

Explanation: Either a CN function is in progress but an LU is not yet active, or an RL function is in progress but an LU is not yet inactive.

P5 X'01005035'

Causing functions: DC

Explanation: The X.25 link control or the network cannot satisfy the call. The connection is already established or an RL function is in progress.

P6 X'01005036'

Causing functions: CL, OP, SH

Explanation: A message sent is accepted with an indication that the input buffer contains messages to be read.

Action: Check the program. All messages should be read before sending new messages.

P7 X'01005037'

Causing functions: RH, SH

Explanation: A logic application error has occurred. The server detects an inconsistency between the function issued and the internal session status.

Action: Check the program. Common situations are:

- Trying to send a response, but no response is pending
 - A response to be sent is pending
 - A message is being received
 - Chaining protocol error
 - Bracket protocol error
 - Change direction protocol error
 - A contention situation exists
 - RTR must be sent between brackets
-

P8 X'01005038'

Causing functions: CL

Explanation: A session is not established. The CL function is rejected.

P8 X'01005038'

Causing functions: CN

Explanation: An LU was previously contacted or an RL function is in progress.

P9 X'01005039'

Causing functions: Any

Explanation: The command was rejected. A session identifier that is not valid was specified in request PARMLIST. Communications Server for OS/2 Warp configuration and LAN.CFG do not agree.

PA X'01005041'**Causing functions:** SH**Explanation:** A host message or response is pending to be received.

PB X'01005042'**Causing functions:** CL, OP, RH, SH**Explanation:** The station is set to quiesce status.**Action:** Wait for a host message to change the status.

PE X'01005045'**Causing functions:** CN**Explanation:** Server managed cryptography has been requested but ACSRENCR.DLL and ACSRDECR.DLL have not been copied to the Communications Server for OS/2 Warp DLL directory (or they are invalid).**Action:** Ensure the correct DLLs are in use. The default DLLs supplied with Communications Server for OS/2 Warp give you this error.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The PARMLIST length is not valid. The length must be X'001A'.

Device errors

U1 X'01005531'**Causing functions:** CL, CN, OP, RH, SH**Explanation:** Contact is pending or communications manager has abended or has abnormally stopped.**Action:** Check the host status, equipment, and status of communications manager.

U2 X'01005532'**Causing functions:** CN**Explanation:** A connection failure has occurred.**Action:** Wait, and then try again.

U8 X'01005538'**Causing functions:** CN, DC, QC**Explanation:** Communications Server for OS/2 Warp is not loaded or there is a communication problem (link not started).

U9 X'01005539'**Causing functions:** CL, DC, GS, OP, QC, RH, RL, SH**Explanation:** An OS/2 operating system error has occurred.**Action:** Check the log file.

Supervisor local functions

Supervisor local functions

The following codes are returned by the supervisor local functions.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

P1 X'01005031'

Causing functions: Not applicable.

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: AA

Explanation: The reply DATA length is not correct.

P2 X'01005032'

Causing functions: AS, DS, QE, SP, Tn, TP, WM

Explanation: The request DATA length is not correct.

P2 X'01005032'

Causing functions: II

Explanation: A parameter is not correct.

P2 X'01005032'

Causing functions: Tn, TT, WM

Explanation: The time interval is not correct.

P2 X'01005032'

Causing functions: WM

Explanation: The interval in the PARMLIST area is not correct.

P3 X'01005033'

Causing functions: AA, AS, II

Explanation: The reply DATA area is insufficient.

P3 X'01005033'

Causing functions: II

Explanation: The reply PARMLIST length is not correct.

P3 X'01005033'

Causing functions: II, QE, SP, TP

Explanation: The request PARMLIST length is not correct.

P3 X'01005033'

Causing functions: Tn

Explanation: The timer is already on the desired status.

P3 X'01005033'

Causing functions: WM

Explanation: The interval is not correct.

P4 X'01005034'

Causing functions: AS

Explanation: The semaphore handle is not valid.

P4 X'01005034'

Causing functions: AS, DS, QE, SP, TP

Explanation: The window handle is not valid.

P4 X'01005034'

Causing functions: DS

Explanation: The semaphore ID is not valid.

P4 X'01005034'

Causing functions: WM

Explanation: The event is not valid.

P5 X'01005035'

Causing functions: AS

Explanation: Too many semaphores are already associated.

P5 X'01005035'

Causing functions: SP

Explanation: The event list has become too long.

P6 X'01005036'

Causing functions: WM

Explanation: The monitor is not supported.

P7 X'01005037'

Causing functions: QE

Explanation: The event ID passed to QE is not valid. It must be the value received in the first parameter of the window procedure.

P7 X'01005037'

Causing functions: WM

Explanation: There are too many threads.

P8 X'01005038'

Causing functions: QE, SP, TP

Explanation: The program is not a Presentation Manager® (PM) program. To request QE, SP, or TP the program must be a PM application.

P9 X'01005039'

Causing functions: SP, Request NoWait

Explanation: There are too many requests.

System manager server

System manager server

The following codes are returned by the system manager server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I0 X'01004930'

Causing functions: AN, MO, UN

Explanation: Support for sending alert notifications, resolution notifications, and messages to the NetView program is deactivated.

I0 X'01004930'

Causing functions: UM, WL

Explanation: Logging is deactivated.

I1 X'01004931'

Causing functions: AN, MO, UN

Explanation: The alerts file is full.

I1 X'01004931'

Causing functions: RL, RN, R1

Explanation: The requested record was not found.

I2 X'01004932'

Causing functions: RL, R1

Explanation: The record used as a base for the retrieval of another was not found.

I5 X'01004935'

Causing functions: SD

Explanation: The date or time is not valid.

Action: Check the contents of the request DATA area.

I6 X'01004936'

Causing functions: AN, MO, UA, UN

Explanation: Support for sending alert notifications, resolution notifications, and messages to the NetView program is not defined.

I6 X'01004936'

Causing functions: RL, R1, UL, WL

Explanation: Logging is not defined.

I6 X'01004936'

Causing functions: UM, UO

Explanation: Message operator support is not defined.

I7 X'01004937'

Causing functions: MO

Explanation: Support for double-byte character set (DBCS) translation is not available.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported or the function was not included during customization.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: AN, GI, GL, GO, GP, GW, MO, RE, RK, RO, UN

Explanation: The request or reply DATA length is not correct.

Action: Correct the request parameters and try again. For the AN, MO, and UN functions, correct the call parameters and try again.

P2 X'01005032'

Causing functions: AU, AX, CP, DU, GD, GG, GI, GL, GU, RD, RN, RR, RU, RX, SD, SF, SN, SO, SU, UA, UD, UI, UL, UM, UO, UU, UX, VR, XN

Explanation: The following could be true:

- The request or reply DATA length is not correct.
- The request or reply PARMLIST length is not correct.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: RF

Explanation: The request DATA length is not correct.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: RL, R1

Explanation: The following could be true:

- The request DATA length or reply DATA length is not correct.
- The sum of the record length and the user message is longer than X'0400'.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: WL

Explanation: The sum of the record header length and the specified request DATA length exceeds the record length defined in customization or is longer than X'0400' bytes.

P3 X'01005033'

Causing functions: AU, AX

Explanation: The user identifier already exists or a user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: AU, AX, CP, DU, GU, RD, RL, RN, RU, RX, R1, SD, SU, UA, UD, UI, UL, UM, UO, UU, UX, XN

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing or the user identifier is not valid.

P3 X'01005033'

Causing functions: GL, GP, GW

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing, the workstation identifier does not exist, or no user is signed on.

P3 X'01005033'

Causing functions: GO, RE, RK, RO

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: RF

Explanation: The function was not accepted. A user is not signed on, or a user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: SF

Explanation: The workstation or user identifier do not exist or no user is signed on.

P3 X'01005033'

Causing functions: SN, SO

Explanation: The function was not accepted. The user identifier is not valid, another user is already signed on to the same workstation, or the maximum number of simultaneously signed-on users is exceeded.

System manager server

P4 X'01005034'

Causing functions: GU, RD, RN, RU

Explanation: The requested data is locked. A 'retrieve for update' process is in progress or the requested data belongs to a signed-on user.

Action: On reply, the DATA area contains the requested data.

P4 X'01005034'

Causing functions: GO, RE, RK, RO

Explanation: The Rep1y DATA length is too small. On reply, the DATA area does not contain all the users.

Action: Provide more storage for Rep1y DATA.

P4 X'01005034'

Causing functions: SN, SO, UO

Explanation: The user profile was not found.

P4 X'01005034'

Causing functions: VR

Explanation: The record definition is damaged or a DBCS field validation was attempted when DBCS support was unavailable.

P5 X'01005035'

Causing functions: AU, AX, GU, RD, RU, RX

Explanation: The requested data is locked. A 'retrieve for update' process is in progress or the requested data belongs to a signed-on user.

Action: Try again later.

P5 X'01005035'

Causing functions: SN, SO

Explanation: The user profile or user data are locked. A 'retrieve for update' process is in progress.

Action: Try again later.

P6 X'01005036'

Causing functions: AU, AX, CP, DU, GU, RU, RN, RX, SF, SN, SO, XN

Explanation: The user profile file was not found.

P6 X'01005036'

Causing functions: RF

Explanation: The function was not performed. The system was unable to read the password in the user profile.

P6 X'01005036'

Causing functions: RR, VR

Explanation: The record definition file was not found.

P6 X'01005036'

Causing functions: SU, UD, UU, UX

Explanation: An update is not allowed. A previous 'retrieve for update' is missing.

P7 X'01005037'

Causing functions: AN, UN

Explanation: The following could be true:

- The LANDP files EHC#ALRN.DAT or EHC#RESN.DAT were not found.
 - The user files EHC#ALRU.DAT or EHC#RESU.DAT were not found.
 - The requested network management vector transport (NMVT) definition was damaged or not found.
-

P7 X'01005037'

Causing functions: AU, AX, SU, UD, UI, UO, UU, UX

Explanation: The supplied data does not agree with the expected format.

P7 X'01005037'

Causing functions: DU, RD, RL, RN, R1, WL, XN

Explanation: The supplied parameter does not agree with the expected format.

P7 X'01005037'

Causing functions: RF, SF

Explanation: The function was not performed. The sign-off type is reserved.

P7 X'01005037'**Causing functions:** RR, VR**Explanation:** The requested record definition was not found.

P7 X'01005037'**Causing functions:** SN, SO**Explanation:** User signon is denied. The user profile was destroyed or modified without using the appropriate system manager functions.

P8 X'01005038'**Causing functions:** CP, RF, SN, SO**Explanation:** The password is not valid.**Action:** Try again.

P8 X'01005038'**Causing functions:** DU, UU, UX**Explanation:** Deleting or updating the user profile is denied. This is the only user with authorization level A or this is the user who receives operator messages.

P8 X'01005038'**Causing functions:** UO**Explanation:** A new user must have authorization level O.

P8 X'01005038'**Causing functions:** VR**Explanation:** The data is not valid.

P9 X'01005039'**Causing functions:** SN, SO**Explanation:** User signon is denied. The user is already signed on at another workstation.

P9 X'01005039'**Causing functions:** DU**Explanation:** Deleting the user is denied. The user is signed on, the user profile is locked, or the user data is locked.**Action:** Try again later.

P9 X'01005039'**Causing functions:** CP**Explanation:** The new password contains invalid characters.

Device errors

U1 X'01005531'**Causing functions:** RL, R1, WL**Explanation:** An irrecoverable error has occurred: the log file is destroyed.**Action:** Delete the log file and restart LANDP.

U3 X'01005533'**Causing functions:** AU, AX, CP, DU, GI, GL, GU, RD, RF, RU, RX, SF, SU, UO, UU, UX**Explanation:** A server internal error has occurred.**Action:** Report the problem.

U5 X'01005535'**Causing functions:** AN, AU, AX, CP, DU, MO, RD, RL, RN, RR, R1, SN, SO, SU, UN, UU, UX, VR, WL, XN**Explanation:** An error occurred while accessing an OS/2 file.**Action:** Try the request again. If the problem persists, it is probably a hardware error.

U5 X'01005535'**Causing functions:** GI, GL**Explanation:** An error occurred while accessing the FBSS#USP file. On reply, the DATA area contains the user ID.

U5 X'01005535'**Causing functions:** GP**Explanation:** An error occurred while accessing the FBSS#USP file. On reply, the DATA area contains the workstation ID.

System manager server

U5 X'01005535'

Causing functions: RE

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area may contain some user IDs.

U5 X'01005535'

Causing functions: RF, SF, UA, UD, UI, UL, UM, UO

Explanation: An error occurred while accessing an OS/2 file. The update was made only in storage.

Action: Try the request again. If the problem persists, it is probably a hardware error.

U5 X'01005535'

Causing functions: GO, RO

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area **date and time of last sign on** field is set to blanks.

TCP/IP wide area communications server

The following codes are placed in the file EHCTCP.TRC.

ALU

Explanation: LU name inconsistent with LOCADDR. LOCADDR is shown.

Action: Ensure constant difference between LOCADDR and numeric suffix of LU names.

CN1 through CN8

Explanation: Error returned from TCP/IP during connection. TCP/IP return code is shown.

Action: Check that session partner (for example, AnyNet) is active.

CNP

Explanation: Invalid port number in EHCTCP.INI. Port number is shown.

Action: Correct the port number in EHCTCP.INI and re-start LANDP.

CNS

Explanation: Invalid number of sessions in LU6.2 conversation mode definition. Number of sessions is shown.

Action: Correct the mode definition in EHCTCP.INI and re-start LANDP.

CNW

Explanation: Invalid number of contention winners in LU6.2 conversation mode definition. Number of contention winners is shown.

Action: Correct the mode definition in EHCTCP.INI and re-start LANDP.

GH1

Explanation: TCP/IP unable to resolve host name to IP address. TCP/IP "gethostbyname" return code is shown.

Action: Check the name in the EHCTCP.INI file. Check your local TCP/IP HOSTS file if used. Check host name resolution with TCP/IP PING command.

IF1 through IF3

Explanation: Definition in EHCTCP.INI file not found. IF1 shows name sought, IF2 shows type sought, and IF3 shows value sought.

Action: If the missing definition should be present, correct the EHCTCP.INI file and re-start LANDP. If the missing definition should not be present, the most likely cause is incorrect parameters to a PPC server OP request, or incorrect session number on a SNA server CN request. Correct this.

IN1 through IN7

Explanation: Operating system error occurred. Operating system return code is shown.

Action: Re-boot your computer. If the error persists, contact your service representative.

INC

Explanation: Initialisation file EHCTCP.INI has invalid contents. Offset of invalid contents is shown.

Action: Correct the contents of EHCTCP.INI and re-start LANDP.

INF

Explanation: Initialisation file EHCTCP.INI not found.

Action: Place EHCTCP.INI in the directory with LANDP and re-start LANDP.

INL

Explanation: Listening port in EHCTCP.INI is invalid. Port is shown.

Action: Correct the port number in EHCTCP.INI and re-start LANDP.

INM

Explanation: Not enough memory available for sessions.

Action: Make more memory available or reduce the number of sessions and re-start LANDP.

TCP/IP wide area communications server

INN

Explanation: Listening value in EHCTCP.INI is invalid. Value is shown.

Action: Correct the listening value in EHCTCP.INI and re-start LANDP.

INP

Explanation: Loading parameter error. Index of bad parameter is shown.

Action: Correct the EHCTCP loading statement and re-start LANDP.

INa through INe

Explanation: TCP/IP error occurred. TCP/IP return code shown.

Action: Make sure TCP/IP is operational and configured correctly.

MX1

Explanation: Maximum number of sessions exceeded. Maximum is shown.

Action: Increase the maximum or reduce session usage.

MX2

Explanation: Maximum number of TCP/IP connections exceeded. Maximum is shown.

Action: Reduce session usage.

RD1 through RD2

Explanation: Error returned reading data from TCP/IP. TCP/IP return is code shown.

Action: Check that session partner (eg AnyNet) is active.

SD1

Explanation: Error returned sending data to TCP/IP. TCP/IP return code is shown.

Action: Check that session partner (eg AnyNet) is active.

TE1 through TE2

Explanation: Unexpected TELNET command code or sub-negotiation code. Unexpected code is shown.

Action: Contact your service representative.

TCP/IP wide area communications server

Chapter 10. LANDP for Windows NT return codes

LANDP return codes are values returned by servers as a result of a function or service request made by an application program. This chapter lists the codes returned by LANDP for Windows NT servers.

“Return codes” on page 5 briefly describes LANDP return codes, including the types and classes of codes. It also describes how to interpret hexadecimal and ASCII return codes.

Quick Guide

There are two types of LANDP return codes: router and server. Router return codes are stored with offset 4 in the CPRB. Server return codes are stored with offset 40 in the CPRB. Operations are successful only if the router and the server return codes are zero.

Listings include the hexadecimal return code and, if available, the translated ASCII return code. The ASCII code appears in parentheses. The first character of the ASCII return code denotes the code class, as follows:

Character	Class
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I	<i>Intervention required.</i> These return codes occur when workstation operators or technical service personnel can remove the error (or fault).
---	---

L	<i>LAN services error.</i> These return codes can occur in any function request to any server.
---	--

NetBIOS return codes are listed and described in *LAN Technical Reference IEEE 802.2 and NetBIOS Application Program Interfaces*, SC30-3587.

P	<i>Programming error.</i> These return codes can occur while developing or debugging application programs. They should not occur in daily operation with error-free programs.
---	---

U	<i>Device error (Unable to access equipment).</i> These return codes occur when LANDP software cannot carry out a request. The most likely cause is a hardware error (or fault).
---	--

EHCLIP program

The following codes are returned by EHCLIP, the LANDP Internet Protocol program. See "EHCLIP program services" on page 43 for information about the program.

CE01

Explanation: TCP/IP returned error data to the **opensocket** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE02

Explanation: TCP/IP returned error data to the **bind** function. EHCLIP cannot start.

Action: If data is 10048 (EADDRINUSE), the port number requested by EHCLIP could already be in use by another TCP/IP application. Stop the application or start EHCLIP on all the LANDP workgroup workstations using the **/N** parameter.

If data is 10049 (EADDRNOTAVAIL), TCP/IP is not started or the TCP/IP network interface is not active. Make sure TCP/IP is operational.

CE03

Explanation: TCP/IP returned error data to the **setsockopt** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE04

Explanation: TCP/IP returned error data to the **ioctl** function. EHCLIP cannot start.

Action: Make sure TCP/IP is operational.

CE05

Explanation: The workstation identifier (**ws_id**) is duplicated in the configuration. EHCLIP cannot start.

Action: Correct the workstation identifier.

CE06

Explanation: TCP/IP returned error data to the **gethostbyname** function for the workstation identifier (**ws_id**). EHCLIP cannot start.

Action: Either the workstation identifier corresponding to **ws_id** is not correctly defined in the TCP/IP 'hosts' file or 'names' server, or TCP/IP could not access the 'names' server or open the 'hosts' file.

CE07

Explanation: The local workstation identifier (**ws_id**) is duplicated as a related workstation. EHCLIP cannot start.

Action: Correct the workstation identifier.

CE08

Explanation: TCP/IP returned a null address for the workstation identifier (**ws_id**). EHCLIP cannot start.

Action: Check the TCP/IP 'hosts' file format or 'names' server definition.

CE10

Explanation: TCP/IP returned error data to the **sendto** function.

Action: If data is 10051 (ENETUNREACH), then the **sendto** failed because **ws_id** cannot be reached from the local workstation. If a session is still being established, then LIP checks alternative addresses for **ws_id**. If no address is reachable, then LIP cannot continue running. In this case, check the routing table and make sure there is a path to the remote workstation.

If data is not 51, then LIP cannot continue running. Make sure TCP/IP is operational.

CE11

Explanation: The **sendto** function failed because TCP/IP output buffer space was not available. EHCLIP had to retry a TCP/IP output function for lack of space in TCP/IP output buffers.

Action: This could be caused by an overloaded network. The session is continued.

CE12

Explanation: Message length data to be sent to workstation identifier (**ws_id**) is larger than the maximum allowed. An application tried to send more data than the maximum allowed. The message is not sent.

Action: Check the message length data.

CE20

Explanation: TCP/IP returned error data to the **recvfrom** function. EHCLIP cannot continue running.

Action: Make sure TCP/IP is operational.

CE30

Explanation: A session with the workstation identifier (**ws_id**) closed. EHCLIP closed a session with **ws_id** when a segmented message send operation could not be completed.

Action: Session re-establishment procedures are started.

CE32

Explanation: A session with the workstation identifier (**ws_id**) closed. EHCLIP closed a session with **ws_id** because contact was lost.

Action: Session re-establishment procedures are started.

CE40

Explanation: A configuration error was detected. The remote workstation identifier (**ws_id**) and the INET address do not match local configuration data. A session with **ws_id** is not established.

Action: Check local TCP/IP 'hosts' file or 'names' server definitions.

CE41

Explanation: A configuration error was detected. The remote workstation identifier (**ws_id**) reported that the local **ws_id** and INET address do not match its configuration data. A session with **ws_id** is not established.

Action: Check remote workstation TCP/IP 'hosts' file or 'names' server definitions.

CE50

Explanation: A storage allocation request for data bytes has failed. EHCLIP cannot continue running.

Action: Check storage availability.

CS01

Explanation: A session has been established with workstation **ws_id**.

CS02

Explanation: Remote workstation **ws_id** has closed the session.

CSND

Explanation: The number of datagrams sent to workstation **ws_id**.

CSRD

Explanation: The number of datagrams sent to workstation **ws_id** that required re-transmission.

CSPF

Explanation: Minimum percentage of free space in the re-transmission table during EHCLIP activity.

CSNE

Explanation: The number of times a message could not be sent because of lack of space in the re-transmission table.

CSNW

Explanation: The number of times a message could not be sent because the send window was not sufficiently open.

SL02

Explanation: A load parameter is not valid. The reported load parameter is not correct. EHCLIP cannot start.

Action: Check the parameter.

SL03

Explanation: A load parameter is unknown. One of the load parameters is not recognized. EHCLIP cannot start.

Action: Check the parameter.

SO01 through 14

Explanation: The Windows NT operating system returned error data. This is an internal error. EHCLIP cannot continue running.

Action: Contact your Service representative.

EHCLIP program

SX01 through SX016

Explanation: This is an internal error. The function may be ignored or EHCLIP may terminate..

Action: Contact your Service representative.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal server, the store-for-forwarding server, or both servers.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Electronic journal server

The following codes are returned only by the electronic journal server.

J0 X'01004A30'

Causing functions: RL

Explanation: There is no journal to release.

J1 X'01004A31'

Causing functions: IL, SL

Explanation: The logical journal environment is not selected.

J2 X'01004A32'

Causing functions: SL

Explanation: A new logical journal was not found or two (or more) SL functions occurred in sequence.

J3 X'01004A33'

Causing functions: SL

Explanation: A previous logical journal was not found.

J4 X'01004A34'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J5 X'01004A35'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J6 X'01004A36'

Causing functions: Any

Explanation: Journal control records were destroyed. Direct access to the shared file is possible only through the electronic server.

J7 X'01004A37'

Causing functions: AL

Explanation: A data set is already allocated.

J8 X'01004A38'

Causing functions: AL

Explanation: The next data set is not empty.

J9 X'01004A39'

Causing functions: DA

Explanation: Deallocate is not possible because the latest allocated data set already contains records.

JA X'01004A41'

Causing functions: RR

Explanation: Too many records are on hold.

JB X'01004A42'

Causing functions: DL, UP

Explanation: No records are held.

JC X'01004A43'

Causing functions: AR, RL, RR

Explanation: An electronic journal is not selected.

electronic journal and store-for-forwarding servers

JD X'01004A44'

Causing functions: AR, DA, IL, IP, RL, RS, RR, SL

Explanation: A journal was not found.

JE X'01004A45'

Causing functions: DA, SL

Explanation: A data set is not allocated.

JF X'01004A46'

Causing functions: RR

Explanation: The accessed logical journal is not active.

JG X'01004A47'

Causing functions: RR

Explanation: The accessed physical journal is not in use.

JH X'01004A48'

Causing functions: DL

Explanation: The record cannot be deleted as it belongs to another logical journal.

JI X'01004A49'

Causing functions: UP

Explanation: The record cannot be updated as it belongs to another logical journal.

JJ X'01004A4A'

Causing functions: AL, SL

Explanation: The physical or logical journal name is blank.

JK X'01004A4B'

Causing functions: DL

Explanation: The record has already been deleted.

JL X'01004A4C'

Causing functions: RR

Explanation: The delete flag is not equal to Y or N.

JM X'01004A4D'

Causing functions: RR

Explanation: The hold flag is not equal to H or N.

JN X'01004A4E'

Causing functions: SL

Explanation: There are too many logical journals.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal and store-for-forwarding servers.

P0 X'01005030'

Causing functions:

Explanation: The function is not supported.

P1 X'01005031'

Causing functions: Any, except CS, IS, QD, SI, TB, TE, TI

Explanation: This is an imbedded server request error.

Action: Get more information from the system manager log file. See the *LANDP Servers and System Management* book for information about the log file.

P2 X'01005032'

Causing functions: AR, RR

Explanation: The format name is not known.

P3 X'01005033'

Causing functions: Any

Explanation: The shared file is not initialized. (A GF function was not requested.)

P4 X'01005034'

Causing functions: Any, except UP

Explanation: Transaction locking was not initialized. (A BT function was not requested.)

P5 X'01005035'

Causing functions: Any, except UP

Explanation: The shared file is not initialized. (An OO function was not requested.)

P6 X'01005036'

Causing functions: AR, DL, RR

Explanation: A separate session is already open. (The DL function applies only to the store-for-forwarding server.)

P7 X'01005037'

Causing functions: AR, RR

Explanation: An entry is not available in separate session tables.

Action: Try later.

P8 X'01005038'

Causing functions: AR, RR

Explanation: A separate session cannot be opened.

P9 X'01005039'

Causing functions: AR, DL, RR, TS, UP

Explanation: A separate session is not open.

PA X'01005041'

Causing functions: AR, DL, RR, TS, UP

Explanation: After an error occurred, the separate session could not be rolled back.

PB X'01005042'

Causing functions: AR, DL, RR, TS, UP

Explanation: A separate session could not be closed.

PC X'01005043'

Causing functions: RR

Explanation: A record satisfying the search criteria was not found.

PD X'01005044'

Causing functions: RR

Explanation: This is an internal error.

PE X'01005045'

Causing functions: RR

Explanation: The search definition is not correct or the search mode is not valid.

PF X'01005046'

Causing functions: RR

Explanation: A record matching the search criteria was not found after the maximum number of disk accesses.

PG X'01005047'

Causing functions: Any

Explanation: Initial handling was not done. This error causes an alert to be sent to the host. The TI function does not send alerts.

PH X'01005048'

Causing functions: AR, UP

Explanation: The field length is not the same as in the defined record format.

PI X'01005049'

Causing functions: AR, UP

Explanation: The field format is not the same as in the defined record format.

PJ X'0100504A'

Causing functions: AR, DL, RR, UP

Explanation: A separate session flag is in error.

PK X'0100504B'

Causing functions: UP

Explanation: The length of the record to be updated differs from the provided record length.

PL X'0100504C'

Causing functions: UP

Explanation: An update with a key field change is not allowed. (The key in the record to be updated differs from the key of the provided record.)

electronic journal and store-for-forwarding servers

PM X'0100504D'

Causing functions: UP

Explanation: The record definition differs.

PN X'0100504E'

Causing functions: AR, DL, RR, UP

Explanation: A separate session flag was used when no separate session was chosen.

PO X'0100504F'

Causing functions: RR, RS

Explanation: The record is locked by another workstation.

PP X'01005050'

Causing functions: SL, TB, TE

Explanation: The flag is not valid.

PQ X'01005051'

Causing functions: AR

Explanation: The request DATA length is greater than the buffer size (specified in the **/K** loading parameter) less 32.

PQ X'01005051'

Causing functions: RR

Explanation: The request DATA length is greater than X'0400'.

PR X'01005052'

Causing functions: RR

Explanation: The returned record is truncated.

Action: Try the following:

- If the sum of the actual record size and 32 is greater than the buffer size, increase the value of the **/K** loading parameter.
- If the sum of the actual record size and 32 is greater than the reply DATA length, increase the reply DATA length.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Store-for-Forwarding server

The following codes are returned only by the store-for-forwarding server.

S0 X'01005330'

Causing functions: DL

Explanation: The record cannot be deleted because it has not been sent by the forwarding facility.

S1 X'01005331'

Causing functions: CS

Explanation: Incomplete status data was provided.

S1 X'01005331'

Causing functions: IS

Explanation: The reply DATA length is insufficient.

S2 X'01005332'

Causing functions: AR, DL, DS, EN, IS, RR, RS, TB, TE

Explanation: The data set was not found.

S3 X'01005333'

Causing functions: TB, TE

Explanation: The session was not found.

S4 X'01005334'

Causing functions: SI

Explanation: The data format has an error.

S5 X'01005335'

Causing functions: CS, IS, QD, SI, TB, TE

Explanation: The server is waiting for an SI request from the forwarding facility.

S6 X'01005336'

Causing functions: AR

Explanation: The data set is disabled for adding records.

Action: Issue an EN function.

S7 X'01005337'

Causing functions: RR

Explanation: Too many records are on hold.

S8 X'01005338'

Causing functions: UP

Explanation: No records are held.

S9 X'01005339'

Causing functions: DL

Explanation: The record number is not valid or the record cannot be deleted.

SA X'01005341'

Causing functions: RR

Explanation: The retrieve mode flag is not set to R, D, or U.

Financial printer server

The following codes are returned by the financial printer server. It supports the following document, passbook, and transaction printers:

- IBM 4712 Transaction Printer
- IBM 4722 Document Printer
- IBM 4772 Ink Jet Transaction Printer
- IBM 9055-002 Document Printer (SBCS support)
- IBM 9068-S01 Multi-purpose Passbook Printer (SBCS support)
- IBM 9069 Document Printer (with MICR reader)

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page. For REMS: The read and verify process did not find data. This is an encoding error.

I3 X'01004933'

Causing functions: RD

Explanation: The following could be true:

- No data was found on the magnetic stripe because the stripe is blank, there is no stripe, or the stripe is misplaced.
- No magnetic ink characters were found because the characters are blank, there are no characters, or the characters are misplaced on the passbook or cheque.
- An incorrect 'Devparm' for REMS has been loaded.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of a journal, document, or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed (except for a journal that begins a new page).

I4 X'01004934'

Causing functions: CH, RD, WR

Explanation: For REMS: The passbook has been replaced while a chained sequence of operations was executed. No passbook for REMS operations.

I5 X'01004935'**Causing functions:** CH, RD, WR**Explanation:** The printer stop button was pressed or the printer cover is open.**Action:** Press the start button or close the printer cover, insert the document, and try again.

I6 X'01004936'**Causing functions:** CH, CL, DF, EC, LL, OP, RD, WR**Explanation:** The printer is busy. The reason may be redirection.**Action:** Try again.

I7 X'01004937'**Causing functions:** CH, DF, LL, WR**Explanation:** The end of the journal, passbook, or document was reached or the cheque, document, passbook, or journal has not been inserted.**Action:** If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed.

I9 X'01004939'**Causing functions:** CH, DF, EC, LL, OP, RD, RM, WR**Explanation:** The resource is assigned to another workstation or another session.

ID X'01004944'**Causing functions:** Any**Explanation:** The printer's cover is open**Action:** Close the cover.

IG X'01004947'**Causing functions:** RD**Explanation:** There has been a longitudinal redundancy check (LRC) error, or a parity error; or the data format is invalid.**Action:** Correct any data formatting error and retry the request. If the problems persists, obtain service.

IR X'01004952'**Causing functions:** RD, WR**Explanation:** Intervention is required.**Action:** Press the A or B button to start printing.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'**Causing functions:** Any**Explanation:** The function is not supported.**Action:** Check the request format and parameters.

P2 X'01005032'**Causing functions:** CH, CL, DF, EC, LL, OP, RD, RM, WR**Explanation:** The length is not correct. For the DF function the name in DATA is not a defined format description name, or the length is X'0000' or greater than X'0008'. For the 9069 MICR, the specified buffer size is invalid, and the valid size is returned in the CPRB data replied field.

P3 X'01005033'**Causing functions:** CH, CL, DF, EC, LL, RD, RM, WR**Explanation:** A previous open function is missing.

P4 X'01005034'**Causing functions:** DF, RD**Explanation:** Format parameters are not correct. No REMS component is available.

P6 X'01005036'**Causing functions:** AR, DU, WR**Explanation:** There is a data (download images) content error. Data goes beyond the end of the display.

Financial printer server

P7 X'01005037'

Causing functions: RD, WR

Explanation: The following could be true:

- The passbook is not in an REMS position.
- An REMS format parameter has not been loaded.
- The passbook is not usable for an REMS operation because it has already been processed by a print operation.
- The format definition contains a passbook width that is not valid.

P8 X'01005038'

Causing functions: AR, CD, DU, WR

Explanation: No operator panel component is available, or no MICR reader is installed or available.

P9 X'01005039'

Causing functions: Any except CD, RD

Explanation: An AR function is in progress.

Action: Cancel the function or wait until it finishes processing.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: There is a printer or REMS hardware malfunction.

Action: A printer hardware malfunction can often be cleared by powering off, and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'

Causing functions: Any

Explanation: There is a printer malfunction. The printer does not answer a status call (device time out).

Action: Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'

Causing functions: Any

Explanation: A Windows NT operating system call error has occurred.

Action: Make sure the device driver is installed.

U5 X'01005535'

Causing functions: Any

Explanation: There is a device driver error.

Action: Follow service reporting procedures.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver is not installed.

U7 X'01005537'

Causing functions: OP

Explanation: The printer ID byte is unknown.

U8 X'01005538'

Causing functions: Any

Explanation: A server internal error has occurred.

Action: Obtain software service.

U9 X'01005539'

Causing functions: Any

Explanation: A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

IBM 4748 printer server

The following codes are returned by the 4748 printer server. This server supports the following printers:

- IBM 9055-001 Document Printer (DBCS support)
- IBM 9068-D01 Multi-purpose Passbook Printer (DBCS support)

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: Any

Explanation: The device is not online.

Action: Check for broken connections.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of the document or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.

- On retries, the line is not printed.

I5 X'01004935'

Causing functions: CH, WR

Explanation: The printer stop button has been pressed, the printer cover is open, or the document was not inserted.

Action: Press the start button, close the printer cover, or insert the document. Try the operation again.

I7 X'01004937'

Causing functions: CH, DF, LL, WR

Explanation: The end of the document or passbook was reached. No writing is performed.

I8 X'01004938'

Causing functions: CH, WR

Explanation: There is a server time out. The printer does not answer completion.

Action: Try the request again.

I9 X'01004939'

Causing functions: CH, DF, EC, LD, LL, OP, WR

Explanation: The resource is assigned to another workstation.

ID X'01004944'

Causing functions: Any

Explanation: The printer's cover is open

Action: Close the cover.

IG X'01004947'

Causing functions: RD

Explanation: There has been a longitudinal redundancy check (LRC) error, or a parity error; or the data format is invalid.

Action: Correct any data formatting error and retry the request. If the problems persists, obtain service.

IR X'01004952'

Causing functions: WR

Explanation: Intervention is required.

Action: Press the A or B button to start printing.

Programming errors

Note: If flag1=P, the return code refers to the previous operation.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: CH, CL, DF, EC, LD, LL, OP, WR

Explanation: The length is not correct.

P3 X'01005033'

Causing functions: CH, DF, EC, LD, LL, WR

Explanation: A previous open function is missing.

P4 X'01005034'

Causing functions: DF, LD

Explanation: The format parameters are not correct.

P6 X'01005036'

Causing functions: WR

Explanation: There is a data content error.

PZ X'0100505A'

Causing functions: Any

Explanation: The parameter length is not valid.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: There is a printer hardware malfunction.

Action: A printer hardware malfunction can often be cleared by powering off and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'**Causing functions:** Any**Explanation:** There is a printer malfunction. The printer does not answer a status call (device time out).**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** This is a DOS error: an error occurred while invoking DOS.**Action:** Make sure the device driver is installed.

U5 X'01005535'**Causing functions:** Any**Explanation:** There is a device driver error.**Action:** Follow the service reporting procedures.

U6 X'01005536'**Causing functions:** OP**Explanation:** The device driver is not installed.

U7 X'01005537'**Causing functions:** OP**Explanation:** A printer ID byte is unknown.

U8 X'01005538'**Causing functions:** Any**Explanation:** There is a server internal error.**Action:** Obtain software service.

U9 X'01005539'**Causing functions:** Any**Explanation:** A resource entry was not found in the configuration file. A session is not defined or the file is damaged.

LAN and router

LAN and router

The following codes are returned when errors are detected by the LANDP workgroup server or the router. The errors can occur in any function request to any server.

X'01000402'

Explanation: The process supervisor is not initialized.

Action: Issue the process supervisor local function IN.

X'01000404'

Explanation: The SPV.EXE program is not loaded.

Action: Load the SPV.EXE program.

X'01000602'

Explanation: The request PARMLIST length is not correct. It must be the length specified for each function.

X'01000604'

Explanation: Values in the CPRB for reply PARMLIST (address or length) or reply DATA (address or length) are not valid. The following could be true:

- The reply PARMLIST address is not valid and the replied PARMLIST length is nonzero.
- The reply DATA address is not valid and the replied DATA length is nonzero.
- The reply PARMLIST length is shorter than the replied length.
- The reply DATA length is shorter than the replied length.

Action: Correct the values.

X'01000608'

Explanation: A resource-origin name is not valid.

Action: SPV.* cannot be the resource origin.

X'01000609'

Explanation: The request DATA length is not valid.

X'0100060C'

Explanation: Values in the CPRB for request PARMLIST (address or length) or request DATA (address or length) are not valid. The following could be true:

- The request PARMLIST address is not valid and the request PARMLIST length is nonzero.
- The request DATA address is not valid and the request DATA length is nonzero.

Action: Correct the values.

X'0100060E'

Explanation: The request DATA address is not valid. The request DATA address is not valid and the request DATA length is nonzero.

Action: Correct the request DATA address.

X'01000610'

Explanation: The reply PARMLIST address is not valid. The reply PARMLIST address is not valid and the reply PARMLIST length is nonzero.

Action: Correct the reply PARMLIST address.

X'01000611'

Explanation: A reply DATA length is not valid.

X'01000612'

Explanation: The reply DATA address is not valid. The reply DATA address is not valid and the reply DATA length is nonzero.

Action: Correct the reply DATA address.

L0 X'01004C30'

Explanation: The sum of the DATA length and the PARMLIST length exceeds X'E09C' bytes.

Action: Correct the connectivity programming request block (CPRB).

L1 X'01004C31'

Explanation: The resource is not defined in the resources table of this workstation.

Action: Check the configuration record.

L2 X'01004C32'

Explanation: There is no session with the called server.

Action: Connect the workstation where the requested server is installed.

L3 X'01004C33'

Explanation: A session is not defined. You are attempting to send a request to a workstation that is not defined in the LANDP workgroup configuration session table.

Action: Check the configuration record.

L5 X'01004C35'

Explanation: The server is not loaded.

Action: Check the initialization procedures.

L6 X'01004C36'

Explanation: The system detected an irrecoverable error from a local workstation.

Action: Try one or both of the following:

- Restart the workstation.
 - Check the LANDP log file to find the NetBIOS error that could be causing this L6 error.
-

L8 X'01004C38'

Explanation: There is no response from the server. The time-out value specified during configuration has been exceeded.

Action: Try the request again, check the status of the workstation, or increase the time-out value.

L9 X'01004C39'

Explanation: A LAN hardware failure has occurred.

Action: Try the following:

- Review all LAN connections and power-on status.
 - Correct any connection problems and start again, reloading any required LANDP components.
 - Check the LANDP log file to find the NetBIOS error that could be causing this L9 error.
-

LB X'01004C42'

Explanation: The CPRB or options control block format is not valid.

LE X'01004C45'

Explanation: The LAN server is not loaded.

LF X'01004C46'

Explanation: An optional parameter is not valid.

LG X'01004C47'

Explanation: A message cannot be sent.

Action: Try again.

LH X'01004C48'

Explanation: A response was received after the time-out value specified during configuration was exceeded.

LJ X'01004C4A'

Explanation: The system detected an access attempt without authorization level F.

LK X'01004C4B'

Explanation: The system detected an attempt to access protected resources from an unexpected workstation.

Action: Sign on to the system manager from this workstation.

LL X'01004C4C'

Explanation: A GETRPLY reply handle is not valid. The reply handle is zero or there is no 'RMTREQ NoWait' outstanding with this handle.

Action: Correct the value.

MQSeries Link server

MQSeries Link server

The following return codes are returned by the MQSeries Link server. The list is followed by **General actions** that apply to many of the codes, as indicated in the list entries.

X'0000' (0)

Causing functions: Any

Explanation: Successful operation.

Action: None required.

CQ X'4351'

Causing functions: BT, PQ, PI, GQ

Explanation: The call to MQCONN gave a bad reason code.

Action: See **General actions** at end of list.

DQ X'4451'

Causing functions: ES, EJ

Explanation: The call to MQDISC gave a bad reason code.

Action: See **General actions** at end of list.

ER X'4552'

Causing functions: Any

Explanation: There was general failure.

Action: See **General actions** at end of list.

GE X'4745'

Causing functions: GQ

Explanation: The call to MQGET gave a bad reason code.

Action: Check the MQSeries reason code found in the reply PARMLIST.

IT X'4954'

Causing functions: GQ

Explanation: One of the EHCGQ_BROWSE options was requested with an existing Queue Handle that is in use as part of a transaction. The GQ function is not processed.

Action: Change the program.

MX X'4D58'

Causing functions: Any

Explanation: The Maximum number of sessions has been reached.

Action: Increase the Total number of permitted sessions by use of the loader /T parameter. If this is already at the maximum, further sessions could be catered for by configuring & customizing another MQSeries Link server.

NM X'4E4D'

Causing functions: GQ

Explanation: No Message was returned by the MQGET.

Action: This may not be an error. If it is, see **General actions** at end of list.

OP X'4F50'

Causing functions: GQ, PQ & P1

Explanation: The PARMLIST options are incorrect.

Action: Change the program.

OQ X'4F51'

Causing functions: GQ, PQ

Explanation: The call to MQOPEN gave a bad reason code.

Action: See **General actions** at end of list.

P1 X'5031'**Causing functions:**

Explanation: The function called is not supported by this server.

Action: Check the request format and parameters.

P2 X'5032'

Causing functions: Any

Explanation: There is a length error.

Action: Change the program.

P4 X'5034'

Causing functions: Any

Explanation: There is an error with the PARMLIST.

Action: Change the program.

PE X'5045'

Causing functions: PQ, P1

Explanation: The call to MQPUT gave a bad reason code.

Action: See **General actions** at end of list.

SB X'5342'

Causing functions: Any

Explanation: The MQSeries Link server is already busy processing a previous request from the same session. If MQSeries Link server receives an RMTREQ NoWait request, it must receive a GETRPLY before the next RMTREQ.

Action: : Change the program.

SQ X'5351'

Causing functions: PQ, P1

Causing functions: CQ

Explanation: The call to MQCLOSE gave a bad reason code.

Action: See **General actions** at end of list.

TE X'5445'

Causing functions: CP, ET

Explanation: The call to MQCMIT gave a bad reason code.

Action: See **General actions** at end of list.

General actions: Often, a return code from MQSeries Link server is the result of a bad response from an MQSeries API call. When this occurs, check the MQSeries reason code in the Reply Parmlist against the MQSeries documentation. If logging is active, the MQSeries Link server's log file contains further details.

Magnetic stripe reader/encoder (MSR/E) server

The following codes are returned by the magnetic stripe reader/encoder (MSR/E) server. It supports the following device:

- IBM 4777 Magnetic Stripe Device

Note: This server also supports the MSR/E component of the IBM 4778 PIN Pad Magnetic Stripe Reader. See “Personal identification number (PIN) pad server” on page 262 for a list of PIN pad return codes.

Successful operation

X'00000000'

Causing functions: CH, CL, DV, EC, KL, OP, RD

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR, AT, WR, WT

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I5 X'01004935'

Causing functions: CH, RD

Explanation: A previous function has not finished processing.

Action: Try again.

I9 X'01004939'

Causing functions: Any

Explanation: The resource is already assigned.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: Any

Explanation: A length is not correct.

Action: Check the data length parameters.

P3 X'01005033'

Causing functions: AR, CH, CL, DV, EC, KL, RD, WR

Explanation: A previous open is missing.

P4 X'01005034'

Causing functions: AT, DV

Explanation: A parameter is not valid.

Action: Check the contents of DATA.

P6 X'01005036'

Causing functions: AT, CH, WR, WT

Explanation: A character is not valid. Data passed does not agree with the parameters loaded in the MSR/E.

P7 X'01005037'**Causing functions:** CH, RD**Explanation:** There is no data pending to pass to the application, or there is no status pending to pass to the application.

P8 X'01005038'**Causing functions:** AR, AT, CH, CL, DV, EC, RD, WR, WT**Explanation:** A previous function is in process.**Action:** Cancel the function or wait until it finishes processing.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'**Causing functions:** Any**Explanation:** A general failure has occurred.

U3 X'01005533'**Causing functions:** Any**Explanation:** A transmission error has occurred, or the MSR/E device is attached to the wrong connector or adapter.**Action:** Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'**Causing functions:** Any**Explanation:** A device self-test failure or a Windows NT operating system error has occurred.**Action:** Check the hardware installation. If the problem persists, obtain service.

U6 X'01005536' MSR/E server**Causing functions:** OP**Explanation:** The device driver name is not correct, the device driver is not installed, or there is a device driver error.

ODBC query server

The following codes are returned by the ODBC query server.

Note: If you specify the /EL parameter in the LOADER command for EHCODP## (see *LANDP Installation and Customization*), the ODBC query server displays information messages on the Windows NT event log.

X'0'

Mode: Any

Explanation: The operation finished successfully.

Action: None required.

AD

Mode: Any

Explanation: The specified function or operator is not valid.

Action: Check the application.

DQ

Mode: Any

Explanation: The requested function needs log in Query.

Action: Check the program. Log in *Query* mode with the OQ function.

ED

Mode: Query

Explanation: The end of data rows was reached.

Action: None (information).

EE

Mode: Query

Explanation: The function RI could not obtain the data successfully.

Action: Make sure that you are connected to the data source and retry.

FD

Mode: Any

Explanation: The server has not been started.

Action: Check the program or issue the GF function.

IE

Mode: Any

Explanation: An internal error has occurred.

Action: Contact a support representative for assistance. Save traces and EHCLANDP.TRP.

Mode: Query

Explanation: The query handle is not valid or there are no more handles left.

Action: Check the program.

ME

Mode: Any

Explanation: A memory allocation error has occurred: there is not enough memory.

Action: Add memory to the server machine or check the loading parameters and the LAN configuration.

NC

Mode: Any

Explanation: The server is not closed: servicing is started.

Action: None (information).

ND

Mode: Any

Explanation: Data source, user ID, or password is incorrect, or the data source is not active.

Action: Check data source, user ID, and password are correct, and re-try.

NQ

Mode: Query

Explanation: There is no open query for the requested handle.

Action: Check the program.

NS

Mode: Any

Explanation: There are no more sessions for one of the client workstations or the session handle is not valid.

Action: Customize with additional sessions by increasing the EHCODB## loading parameter /S, or check the application.

NT

Mode: Any

Explanation: The requestor PC-ID is not customized to be serviced.

Action: Check the LAN configuration.

PE

Mode: Query

Explanation: Parameters are expected. The statement contains '?' (parameter markers), but not enough were pre-fetched.

Action: Check the program and use the SP function to pre-fetch parameters.

QE

Mode: Query

Explanation: A query error has occurred.

Action: Try the following:

- Check the code and message in the data area.
 - Check the program.
-

SE

Mode: Any

Explanation: A thread spawning error has occurred: the server cannot start a worker thread.

Action: Check the EHCODB## loading parameters, /T and /MT.

TE

Mode: Any

Explanation: Timeout occurred while trying to process the request. The request has been cancelled, therefore a rollback may be needed.

Action: Retry. If the error persists, increase the EHCODB## loading parameter /W, or increase ODBC/DBMS throughput.

TL

Mode: Any

Explanation: The length of the passed data or parameters is not valid.

Action: Check the program.

YP

Mode: Any

Explanation: GF function was already requested.

Action: None (information).

YQ

Mode: Query

Explanation: Already logged in query mode.

Action: None (information).

Personal identification number (PIN) pad server

The following codes are returned by the personal identification number (PIN) pad server. It supports the following device:

- IBM 4778 PIN Pad Magnetic Stripe Reader

Note: The PIN pad server also supports the magnetic stripe reader/encoder component of the 4778 device. It issues the same return codes as the MSR/E server, except for those codes caused by encoding functions, which are not supported by the 4778 PIN pad MSR device. See “Magnetic stripe reader/encoder (MSR/E) server” on page 258 for a list of MSR/E return codes.

Successful operation

X'00000000'

Causing functions: CL, GA, IV, KL, LM, LK, LP, OP, RD, RN, VA

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I3 X'01004933'

Causing functions: AR, GA, IV, LM, LK, LP, VA

Explanation: The referenced key is not loaded.

I4 X'01004934'

Causing functions: RD

Explanation: The PIN is not valid.

I5 X'01004935'

Causing functions: RD

Explanation: A previous function has not finished processing.

Action: Try again.

I6 X'01004936'

Causing functions: RD (AR option M)

Explanation: The pressed button is not valid.

I7 X'01004937'

Causing functions: AR (Options C and E)

Explanation: This function cannot be used in clear mode.

Action: Enter or load the master key in encrypted mode.

I9 X'01004939'

Causing functions: Any

Explanation: The resource is assigned to another personal computer.

Programming errors

P1 X'01005031'

Causing functions:**Explanation:** The function is not supported.**Action:** Check the request format and parameters.

P2 X'01005032'

Causing functions: Any**Explanation:** The length is not correct.**Action:** Check the data length parameters.

P3 X'01005033'

Causing functions: AR, CL, GA, IV, KL, LM, LK, LP, RD, RN, VA**Explanation:** A previous open is missing.

P4 X'01005034'

Causing functions: AR, GA, IV, LM, LK, LP, VA**Explanation:** A flag is not valid.**Action:** Check the PARMLIST flags.

P5 X'01005035'

Causing functions: AR, GA, LK, LM, VA**Explanation:** The key parity is not valid.**Action:** Correct the key.

P6 X'01005036'

Causing functions: LP**Explanation:** The decimalization table is not valid.**Action:** Check the contents of DATA.

P6 X'01005036'

Causing functions: VA**Explanation:** The message authentication code (MAC) is not valid.**Action:** Correct the contents of DATA.

P7 X'01005037'

Causing functions: RD**Explanation:** There is no data pending to pass to the application.

P8 X'01005038'

Causing functions: AR, CL, GA, IV, LM, LK, LP, RN, VA**Explanation:** A previous function is in process.**Action:** Cancel the function or wait until it finishes.

P9 X'01005039'

Causing functions: AR, AT, DV, EC, OP, RD, WD**Explanation:** The function is not supported. Magnetic stripe support is not attached or loaded, or a liquid crystal display (LCD) is not available.

PZ X'0100505A'

Causing functions: Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'

Causing functions: Any**Explanation:** There was a general failure.

U4 X'01005534'

Causing functions: Any**Explanation:** A device self-test failure or Windows NT operating system error has occurred.**Action:** Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'

Causing functions: AR, IV, KL, LM, LK, LP, RD, RN**Explanation:** A PIN pad device internal error has occurred.**Action:** Run the personal computer system and PIN pad device diagnostic programs, and then follow the recommended action.

PIN pad server

U6 X'01005536'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver installation error.

Program-to-Program communications (PPC) server

The following codes are returned by the program-to-program communications (PPC) server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

P0 X'01005030'

Causing functions: Any, except OP

Explanation: This error occurs when the transaction program requests any other function before an OP function. It occurs at the beginning or when the LANDP conversation has been released for some reason. The error also occurs if the transaction program calls PPC with an invalid conversation event/handle in the request parameter.

Action: The program must request an OP function or correct the application program.

P1 X'01005031'

Causing functions: Any

Explanation: The function is not supported. The function code is not correct or the combination of function code, parameters, and data is not consistent or supported.

Action: Fix the error in the program.

P2 X'01005032'

Causing functions: Any

Explanation: Data lengths are not correct for the specific function.

Action: Fix the program.

P3 X'01005033'

Causing functions: RD

Explanation: There are no messages to read.

P4 X'01005034'

Causing functions: RD

Explanation: A previously read message requires a response from the application program.

This occurs when the transaction program requests an RD function with flag5=R. This means that the transaction program manages the sending of responses. As the PPC server requests this response, the program must provide a positive or negative response.

P5 X'01005035'

Causing functions: Any

Explanation: An OP function is in progress.

P6 X'01005036'

Causing functions: SD

Explanation: The function was accepted and indicates that there is a message to read. This is provided as information for the application program, which in turn can issue an RD function to read this message.

Action: None (information).

P7 X'01005037'

Causing functions: CL, SD

Explanation: The system is unable to send data because of a communication protocol error. The error could be caused by the following:

- Trying to send data in 'receive' status
- A response pending to be sent
- Trying to send a response, but no response is pending

Action: Check the transaction program logic and conversation status.

PPC server

P8 X'01005038'

Causing functions: OP

Explanation: The function request was previously requested. A conversation is already established.

P9 X'01005039'

Causing functions: OP

Explanation: The LU, mode_name, or tp_name identifier is not valid.

Action: Check the Communications Server for Windows NT or Microsoft SNA Server configuration file.

P9 X'01005039'

Causing functions: RD, SD, CL, GS

Explanation: The transaction program calls PPC without specifying a conversation event/handle.

Action: Check the transaction program.

PB X'01005042'

Causing functions: Any

Explanation: A request that is in progress has not replied.

PD X'01005044'

Causing functions: Any

Explanation: The PPC server has no data buffers to send data to, or receive data from, Communications Server for Windows NT or Microsoft SNA Server.

PZ X'0100505A'

Causing functions: Any

Explanation: A parameter length is not valid.

Device errors

U1 X'01005531'

Causing functions: CL, OP, RD, SD

Explanation: A conversation was not allocated for status reasons.

Action: Check the transaction program logic, session status, conversation status, and equipment.

U2 X'01005532'

Causing functions: OP

Explanation: Conversation not allocated, try again later.

Action: It may be possible to allocate the conversation by repeating the OP function after a suitable delay. (The cause of this error could, for example, be caused by a lack of free sessions and trying again later may find one free.) Limit the number of retries as the allocation request may never succeed. Limit the frequency of retries to avoid network congestion.

U8 X'01005538'

Causing functions: Any

Explanation: Communications Server for Windows NT or Microsoft SNA Server is not started.

U9 X'01005539'

Causing functions: Any

Explanation: A Windows NT operating system error has occurred. It can be caused by a lack of system resources or an operating system error.

Remote change management services (RCMS)

The following codes are returned by remote change management services (RCMS).

X'082FF001'

Explanation: A logical block is out of range for recovery with the RETRIEVE command.

X'082FF004'

Explanation: No status is available.

X'0833F001'

Explanation: A logical block is out of range for recovery with the ADD or REPLACE DATA command.

X'328A0108'

Explanation: This is an unknown command.

X'32B00001'

Explanation: This is an operating system error for the ADD DATA command.

X'32B00002'

Explanation: This is a cryptographic error for the ADD DATA command.

X'32B00202'

Explanation: The ADD DATA command was rejected because the file name already exists.

X'32B10001'

Explanation: This is an operating system error for the REPLACE DATA command.

X'32B10002'

Explanation: This is a cryptographic error for the REPLACE DATA command.

X'32B10101'

Explanation: This is a coding or critical error.

X'32B20001'

Explanation: This is an operating system error for the DELETE command.

X'32B20002'

Explanation: This is a cryptographic error for the DELETE command.

X'32B20104'

Explanation: The 'delete' file was rejected. The file does not exist or the path cannot be found.

X'32B40204'

Explanation: The 'delete' file is not authorized.

X'32B50001'

Explanation: This is an operating system error for the RETRIEVE command.

X'32B50002'

Explanation: This is a cryptographic error for the RETRIEVE command.

X'32B50003'

Explanation: The 'retrieve' names were rejected because the directory is empty.

X'32B50201'

Explanation: The 'retrieve' file was rejected. The file does not exist or no path was found.

X'32B60001'

Explanation: This is an operating system error for the RETRIEVE BY CATALOG command.

X'32B60002'

Explanation: This is a cryptographic error for the RETRIEVE BY CATALOG command.

Remote change management services (RCMS)

X'32B60105'

Explanation: The RETRIEVE BY CATALOG command was rejected because there was no file name in the specified catalog.

X'32B60201'

Explanation: The RETRIEVE BY CATALOG command was rejected because the catalog cannot be found.

X'32B70001'

Explanation: This is an operating system error for the CLIST command.

X'32B70002'

Explanation: This is a cryptographic error for the CLIST command.

X'32B70003'

Explanation: The CLIST file is too big or run # overflow.

X'32B70004'

Explanation: The RCMS.ACK file cannot be accessed.

X'32B70005'

Explanation: The CLIST processing failed at the node.

X'32B70007'

Explanation: The CLIST was executed, but COMMAND.COM space was not recovered.

X'32B80001'

Explanation: This is an operating system error for the SEND MSG command.

X'32B80002'

Explanation: This is a cryptographic error for the SEND MSG command.

X'32B80003'

Explanation: The phase was not found.

X'32B80004'

Explanation: This is a system manager error for the SEND MSG command.

X'32B90001'

Explanation: This is an operating system error for the QUERY command.

X'32B90002'

Explanation: This is a cryptographic error for the QUERY command.

X'32B90003'

Explanation: All acknowledge characters could not be deleted for the QUERY command.

X'32BA0001'

Explanation: An INITSELF contents error occurred while releasing a held phase.

X'32BA0002'

Explanation: An operating system error occurred while updating a plan details file.

X'32BA0003'

Explanation: An operating system error occurred while getting a phase to process. Held phases remote release stopped.

X'32BA0004'

Explanation: An operating system error occurred while updating a plan details file and getting a phase to process. Held phases remote release stopped.

X'32BA0005'

Explanation: A translation error occurred while processing a plan details file record. Held phases remote release stopped.

X'32BA0006'

Explanation: An operating system error occurred while updating a plan details file and a translation error occurred while processing a plan details file record. Held phases remote release stopped.

X'32BA0007'

Explanation: An operating system error occurred while getting a phase to process and the phase could not be found. Held phases remote release stopped.

X'32BA0008'

Explanation: A translation error occurred while processing a plan details file record and the phase could not be found. Held phases remote release stopped.

X'32BB0001'

Explanation: A translation error has occurred.

X'32E90002'

Explanation: The cryptographic process failed and first-in-chain (FIC) could not be decrypted to get the command.

X'32E90201'

Explanation: The RCMS.LNF file cannot be found.

X'32E90202'

Explanation: The logical name is not valid.

X'32E90203'

Explanation: A negative response was received while sending data.

X'32E90204'

Explanation: A cancel request was received while receiving data.

X'32E90205'

Explanation: The protocol is not valid.

X'32E90206'

Explanation: The command ended because the session has been lost. RCMS cannot determine the cause of the session loss.

Action: Check LANDP, Communications Server, Personal Communications, and MicroSoft SNA Server. or VTAM traces for possible causes.

Shared-file server

Shared-file server

The following codes are returned by the shared-file server.

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

X'00000000'

Causing functions: QP

Explanation: The program control block (PCB) information has been returned.

Action: None required.

X'00000000'

Causing functions: RH

Explanation: The header information has been returned.

Action: None required.

AD X'01004144'

Causing functions:

Explanation: The function is not supported.

AD X'01004144'

Causing functions: FU, GU, HU, KU

Explanation: A search parameter is not correct or cannot be found.

BL X'0100424C'

Causing functions: EX, HN, HP, HU, IS, KN, KP, KU

Explanation: The shared file is blocked by another workstation operating in batch mode, or another application is holding the database description (DBD) in exclusive use.

Action: Rollback is recommended.

CE X'01004345'

Causing functions: Any

Explanation: Critical Error: The first byte of DATA contains the return code. If the error is returned by the shared-file distributor server, 12 bytes of additional information are returned in the reply data area, as follows:

- Server id: The server name of the server causing the error.
- WS id: The identifier of the workstation where the server causing the error is running.
- Return code: The error code returned by the server.

Action: See "Critical errors" on page 274 for more information.

CO X'0100434F'

Causing functions: BT, OB

Explanation: Job start is not allowed. The system is in the process of closing.

DA X'01004441'

Causing functions: RP

Explanation: An attempt was made to replace a record with keys that cannot be changed. Updating records with keys that have this attribute is not allowed.

DB X'01004442'

Causing functions: CB, OB

Explanation: Batch opening was denied because the shared-file server is open for online work.

DH X'01004448'

Causing functions: DL, HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The shared file must be on hold for this batch request.

DJ X'0100444A'**Causing functions:** DL, RP**Explanation:** The record is not on hold.

DO X'0100444F'**Causing functions:** BT, ET, OO**Explanation:** Online openings are denied because the shared-file server is open for batch requests.

E1 X'01004531'**Causing functions:** CB, CO, CP, DL, ET, IS, RB, RP, ZD**Explanation:** Writing to, or reading from (RB only), the first log file failed. The operation is not performed.**Action:** Try the operation again. See "Critical errors" and "Primary input/output errors" on page 275 for more information.

E2 X'01004532'**Causing functions:** CB, CO, CP, DL, ET, IS, RB, RP, ZD**Explanation:** Writing to, or reading from (RB only), the second log file has failed. The operation is not performed.**Action:** Try the operation again. See "Critical errors" and "Primary input/output errors" on page 275 for more information.

EP X'01004550'**Causing functions:** Any**Explanation:** A primary I/O error has occurred. The error is an irrecoverable failure.**Action:** See "Primary input/output errors" on page 275 for more information.

FC X'01004643'**Causing functions:** DL, IS**Explanation:** Internal error: corrupt FREECHAIN.**Action:** Restart the shared-file server with the /R: parameter.

FD X'01004644'**Causing functions:** Any, except GF, SR, TS**Explanation:** The function was denied because a GF function was not received.

GB X'01004742'**Causing functions:** FN, FP, GN, GP, HN, HP, KN, KP**Explanation:** Either the end of the shared file has been reached while processing an FN, GN, HN, or KN function, or the beginning of the shared file has been reached while processing an FP, GP, HP, or KP function.

The next FN, GN, HN, or KN function returns the first record. The next FP, GP, HP, or KP function returns the last record.

GE X'01004745'**Causing functions:** FU, GU, HU, KU**Explanation:** The record with the specified key does not exist.

II X'01004949'**Causing functions:** IS, RP**Explanation:** The following could be true:

- IS function: An attempt was made to insert a duplicate of a key that must be unique. This is not allowed.
- RP function: An attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.

LI X'01004C49'**Causing functions:** RB**Explanation:** The log file is inhibited.**Action:** A rollback operation is not possible.

MI X'01004D49'**Causing functions:** QP**Explanation:** More information is pending.

Shared-file server

NA X'01004E41'

Causing functions: CP, DL, ET, HN, HP, HU, IS, KN, KP, KU, RB, RP

Explanation: A transaction has not been opened.

NB X'01004E42'

Causing functions: Any, except GF, OB, OO, RF, SR, TS

Explanation: The function was denied because a batch process has not been opened.

NC X'01004E43'

Causing functions: TS

Explanation: The shared files have not been closed. A workstation ID and a process ID are in request DATA for open transactions.

NO X'01004E4F'

Causing functions: BT, CP, DL, ET, FN, FP, FU, GN, GP, GU, HN, HP, HU, IP, IS, RB, RP, KN, KP, KU

Explanation: The function was denied because online mode was not initialized.

NP X'01004E50'

Causing functions: Any

Explanation: The program control block (PCB) does not exist, or the PCB is not blanks or nulls. The following could also be true:

- QP function: The wrong PCB name was requested.
- Shared-file distributor server: A request was made to a PCB owned by a server that is either not loaded or loaded but not ready to receive requests.

Action: For the shared-file distributor server, load the server owned by the PCB.

NS X'01004E53'

Causing functions: OS

Explanation: The following could be true:

- For the shared-file server: No more sessions are available.
- For the shared-file distributor and replicator servers: No more memory is available.

NS X'01004E53'

Causing functions: Any

Explanation: No session has been opened with the supplied session identifier.

NT X'01004E54'

Causing functions: Any

Explanation: The workstation is not customized to use the shared-file server.

OP X'01004F50'

Causing functions: Any

Explanation: The log file is not open. The file is remote and was not accessible at server loading time, or it does not exist and you must run the GENLOG utility program.

The following could also be true:

- The initialization process has not ended.
- The server is not ready to work. The replicator server does not have an up-to-date shared file loaded.
- The server is doing the synchronization process. The replicator server is ending the synchronization process for a shared file.

Action: When the shared-file servers return this error, a qualifier is also returned in the reply DATA area. It indicates the situation that is causing the error.

Try the following, depending on the cause of the error:

Qualifier	What to do
0	If the log file is not open, start the OPENLOG utility to retry opening the log file. See the <i>LANDP Servers and System Management</i> book for information about the utility program.
1	If the initialization process has not ended, wait until initialization ends and then try the operation again.
2	If the server is not ready to work, load an up-to-date shared file.
3	If the server is doing the synchronization process, wait until the process finishes and then try the operation again.

PI X'01005049'**Causing functions:** GF, RF**Explanation:** The parameter for a GF or RF function is not valid.

- GF function: The request DATA length must be at least X'0001' and have 'O' and 'B' in the first byte of the data area.
- RF function: The request DATA length must be X'0000' or greater than X'0000' and have 'b', 'N', or 'F' in the first byte of the data area. (b represents a space character.)

PZ X'0100505A'**Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.

RL X'0100524C'**Causing functions:** HN, HP, HU, IS, KN, KP, KU, RP**Explanation:** The record is locked by another workstation. For the RP function, an attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.**Action:** The following are recommended actions based on the reply DATA values:

Value	Action
R	Retry.
A	Rollback if you want to follow the deadlock avoidance protocol. Try again if you want to follow the deadlock detection protocol.
D	Rollback (deadlock detected).

TL X'0100544C'**Causing functions:** Any**Explanation:** The specified request DATA length does not match the expected length for the requested function.

TL X'0100544C'**Causing functions:** FU, GU, HU, KU**Explanation:** When using direct indexed access mode, this code could be returned when the request DATA length is set to 1, instead of 0.

TO X'0100544F'**Causing functions:** HL, IL**Explanation:** A transaction is open.**Action:** Close the transaction or close batch.

XI X'01005849'**Causing functions:** GF**Explanation:** The state of this XLR server is in doubt because EHCSAM could not confirm if the backup server did a takeover since the last time this server was run.**Action:** If the backup did not take over, use EHCXLR utility to override and then perform another GF.

If the backup did take over, start it first and then restart this server.

YA X'01005941'**Causing functions:** BT**Explanation:** A transaction is already open.

YB X'01005942'**Causing functions:** OB**Explanation:** The shared file is already open in batch mode.

YO X'0100594F'**Causing functions:** OO**Explanation:** The shared file is already open in online mode.

YP X'01005950'**Causing functions:** GF**Explanation:** The shared file is already open.

Shared-file server

Critical errors

When a critical error occurs, as indicated by return codes X'01004345', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:
 - X'13' Disk is write-protected.
 - X'14' Unknown unit.
 - X'15' Drive is not ready.
 - X'16' Unknown command.
 - X'17' Cyclic redundancy check (CRC) error.
 - X'18' Bad drive request structure length.
 - X'19' Disk seek error.
 - X'1A' Unknown media type.
 - X'1B' Sector not found.
 - X'1D' Device write fault.
 - X'1E' Device read fault.
 - X'1F' Hardware failure.
 - X'20' Sharing violation.
 - X'21' Lock violation.
 - X'22' Disk change not valid.
 - X'24' Sharing buffer overflow.
- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCIIZ string consisting of a maximum of 80 bytes. An ASCIIZ string is a normal string that ends with a null character.

When a critical error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default drive and directory.

The file name is in the format:

HHmmsshh.TRC

where:

HH is hours.
mm is minutes.
ss is seconds.
hh is hundredths of seconds.

IBM support representatives need the trace file *HHmmsshh*.TRC if you contact them for assistance.

Primary input/output errors

When primary I/O errors occur, as indicated by return codes X'01004550', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:

X'02'	File not found.
X'03'	Path not found.
X'04'	Too many open files.
X'05'	File access denied.
X'06'	Handle not valid.
X'0C'	Access code (file mode) not valid.
X'0F'	Drive number not valid.
X'70'	Disk is full.

Note: For any other error returned by the operating system, refer to the Microsoft Windows NT documentation.

- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCIIZ string consisting of a maximum of 80 bytes. An ASCIIZ string is a normal string that ends with a null character.

When a primary I/O error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default drive and directory.

The file name is in the format:

HHmmssh.TRC

where:

<i>HH</i>	is hours.
<i>mm</i>	is minutes.
<i>ss</i>	is seconds.
<i>hh</i>	is hundredths of seconds.

IBM support representatives need the trace file *HHmmssh*.TRC if you contact them for assistance.

Shared-file utilities

Shared-file utility programs

The following codes are returned by the shared-file BACKUP and RESTORE utility programs.

X'00' **(000)**

Explanation: The program ended successfully.

Applies to: Backup, Restore

X'01' **(001)**

Explanation: Parameters are not valid.

Applies to: Backup, Restore

X'92' **(146)**

Explanation: Old and new log files cannot be chained.

Applies to: Restore

X'96' **(150)**

Explanation: The log file does not exist.

Applies to: Backup, Restore

X'97' **(151)**

Explanation: An I/O error has occurred.

Applies to: Backup, Restore

X'98' **(152)**

Explanation: Transactions are open.

Applies to: Backup

X'A0' **(160)**

Explanation: The log file is empty.

Applies to: Backup

X'A1' **(161)**

Explanation: The log file is in use by another process.

Applies to: Backup, Restore

X'A2' **(162)**

Explanation: The old log file does not exist.

Applies to: Restore

X'A8' **(168)**

Explanation: A log file is an old version.

Action: Try running the GENLOG utility program to create a new log file.

Applies to: Backup, Restore

X'AD' **(173)**

Explanation: The file LOG2.DAT was not found.

Applies to: Backup, Restore

X'AE' **(174)**

Explanation: The log file LOG.DAT is not at the correct level of LOG2.DAT.

Applies to: Backup, Restore

X'AF' **(175)**

Explanation: The log file LOG2.DAT is not at the correct level of LOG.DAT.

Applies to: Backup, Restore

X'B0' **(176)**

Explanation: Log file LOG.DAT is truncated. Forward recovery cannot be performed.

Applies to: Restore

X'B1' **(177)**

Explanation: Some data might not have been updated to data files, or data in the log file is needed by a parent server.

Applies to: Backup

SNA server

The following codes are returned by the SNA server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: RH, SH

Explanation: An LU-LU session is not established.

I2 X'01004932'

Causing functions: CL, CN, OP, RH, SH

Explanation: The communication adapter or cabling are malfunctioning.

Action: Restart the SNA communications provider or check the equipment.

Programming errors

P0 X'01005030'

Causing functions: CL, GS, OP, RH, RL, SH

Explanation: A previous CN function was not requested or an RL is in progress.

P1 X'01005031'

Causing functions: None

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: RH

Explanation: There is a length error. The reply DATA length specified in the CPRB is insufficient for a message from the host. The message has been truncated to the specified length.

Action: Check the program.

P2 X'01005032'

Causing functions: SH

Explanation: There is a length error. The request DATA length specified in the CPRB must be between X'0000' and X'1000'. See the *LANDP Programming Reference* book for more specific information.

Action: Check the program.

P2 X'01005032'

Causing functions: CL, OP

Explanation: There is a length error. The request DATA length specified does not correspond to that specified in the OP or CL command or an INITSELF or TERMSELF was specified and was invalid.

Action: Check the program.

P2 X'01005032'

Causing functions: CN, GS, RL

Explanation: There is a length error. The request and reply DATA length specified in the CPRB must be X'0000'.

Action: Change the program.

P2 X'01005032'

Causing functions: DC, QC

Explanation: There is a length error. The request DATA length specified in the CPRB must be X'006C'.

Action: Change the program.

SNA server

P3 X'01005033'

Causing functions: RH

Explanation: There are no pending messages.

P3 X'01005033'

Causing functions: SH

Explanation: Internal resources are temporarily unavailable. The SNA server acts appropriately.

Action: The program should wait, and then try again.

P4 X'01005034'

Causing functions: RH, CL, OP, SH

Explanation: There is a previous message read with flag5=R that requires a response, or a response is required at end of chain if CN flag5 was M.

P5 X'01005035'

Causing functions: OP

Explanation: An OP function is in progress.

Action: Check the program.

P5 X'01005035'

Causing functions: SH

Explanation: A previous SH function is in progress.

Action: The program should wait and then try again.

P5 X'01005035'

Causing functions: CN, RL, RH

Explanation: Either a CN function is in progress but an LU is not yet active, or an RL function is in progress but an LU is not yet inactive.

P5 X'01005035'

Causing functions: DC

Explanation: The X.25 link control or the network cannot satisfy the call. The connection is already established or an RL function is in progress.

P6 X'01005036'

Causing functions: CL, OP, SH

Explanation: A message sent is accepted with an indication that the input buffer contains messages to be read.

Action: Check the program. All messages should be read before sending new messages.

P7 X'01005037'

Causing functions: RH, SH

Explanation: A logic application error has occurred. The server detects an inconsistency between the function issued and the internal session status.

Action: Check the program. Common situations are:

- Trying to send a response, but no response is pending
 - A response to be sent is pending
 - A message is being received
 - Chaining protocol error
 - Bracket protocol error
 - Change direction protocol error
 - A contention situation exists
 - RTR must be sent between brackets
-

P8 X'01005038'

Causing functions: CL

Explanation: A session is not established. The CL function is rejected.

P8 X'01005038'

Causing functions: CN

Explanation: An LU was previously contacted or an RL function is in progress.

P9 X'01005039'

Causing functions: Any

Explanation: The command was rejected. A session identifier that is not valid was specified in request PARMLIST. The communications provider configuration and LAN.CFG do not agree.

PA X'01005041'**Causing functions:** SH**Explanation:** A host message or response is pending to be received.

PB X'01005042'**Causing functions:** CL, OP, RH, SH**Explanation:** The station is set to quiesce status.**Action:** Wait for a host message to change the status.

PE X'01005045'**Causing functions:** CN**Explanation:** Server-managed cryptography has been requested but ACSRENCR.DLL and ACSRDECR.DLL have not been copied to the Windows NT DLL directory (or they are invalid).**Action:** Ensure the correct DLLs are in use. The default DLLs supplied with Windows NT give you this error.

PZ X'0100505A'**Causing functions:** Any**Explanation:** The PARMLIST length is not valid. The length must be X'001A'.

Device errors

U1 X'01005531'**Causing functions:** CL, CN, OP, RH, SH**Explanation:** Contact is pending or communications manager has abended or has abnormally stopped.**Action:** Check the host status, equipment, and status of communications manager.

U2 X'01005532'**Causing functions:** CN**Explanation:** A connection failure has occurred.**Action:** Wait, and then try again.

U8 X'01005538'**Causing functions:** CN, DC, QC**Explanation:** The communications provider is not loaded or there is a communication problem (link not started).

U9 X'01005539'**Causing functions:** CL, DC, GS, OP, QC, RH, RL, SH**Explanation:** A Windows NT operating system error has occurred.**Action:** Check the log file.

Supervisor local functions

Supervisor local functions

The following codes are returned by the supervisor local functions.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

P1 X'01005031'

Causing functions: Not applicable.

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: AA

Explanation: The reply DATA length is not correct.

P2 X'01005032'

Causing functions: AS, DS, QE, SP, Tn, TP, WM

Explanation: The request DATA length is not correct.

P2 X'01005032'

Causing functions: II

Explanation: A parameter is not correct.

P2 X'01005032'

Causing functions: Tn, TT, WM

Explanation: The time interval is not correct.

P2 X'01005032'

Causing functions: WM

Explanation: The interval in the PARMLIST area is not correct.

P3 X'01005033'

Causing functions: AA, AS, II

Explanation: The reply DATA area is insufficient.

P3 X'01005033'

Causing functions: II

Explanation: The reply PARMLIST length is not correct.

P3 X'01005033'

Causing functions: II, QE, SP, TP

Explanation: The request PARMLIST length is not correct.

P3 X'01005033'

Causing functions: Tn

Explanation: The timer is already on the desired status.

P3 X'01005033'

Causing functions: WM

Explanation: The interval is not correct.

P4 X'01005034'

Causing functions: AS

Explanation: The semaphore handle is not valid.

P4 X'01005034'

Causing functions: AS, DS, QE, SP, TP

Explanation: The window handle is not valid.

P4 X'01005034'

Causing functions: DS

Explanation: The semaphore ID is not valid.

P4 X'01005034'

Causing functions: WM

Explanation: The event is not valid.

P5 X'01005035'

Causing functions: AS

Explanation: Too many semaphores are already associated.

P5 X'01005035'

Causing functions: SP

Explanation: The event list has become too long.

P6 X'01005036'

Causing functions: WM

Explanation: The monitor is not supported.

P7 X'01005037'

Causing functions: QE

Explanation: The event ID passed to QE is not valid. It must be the value received in the first parameter of the window procedure.

P7 X'01005037'

Causing functions: WM

Explanation: There are too many threads.

P8 X'01005038'

Causing functions: QE, SP, TP

Explanation: The program is not a Presentation Manager (PM) program. To request QE, SP, or TP the program must be a PM application.

P9 X'01005039'

Causing functions: SP, Request NoWait

Explanation: There are too many requests.

System manager server

System manager server

The following codes are returned by the system manager server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I0 X'01004930'

Causing functions: AN, MO, UN

Explanation: Support for sending alert notifications, resolution notifications, and messages to the NetView program is deactivated.

I0 X'01004930'

Causing functions: UM, WL

Explanation: Logging is deactivated.

I1 X'01004931'

Causing functions: AN, MO, UN

Explanation: The alerts file is full.

I1 X'01004931'

Causing functions: RL, RN, R1

Explanation: The requested record was not found.

I2 X'01004932'

Causing functions: RL, R1

Explanation: The record used as a base for the retrieval of another was not found.

I5 X'01004935'

Causing functions: SD

Explanation: The date or time is not valid.

Action: Check the contents of the request DATA area.

I6 X'01004936'

Causing functions: AN, MO, UA, UN

Explanation: Support for sending alert notifications, resolution notifications, and messages to the NetView program is not defined.

I6 X'01004936'

Causing functions: RL, R1, UL, WL

Explanation: Logging is not defined.

I6 X'01004936'

Causing functions: UM, UO

Explanation: Message operator support is not defined.

I7 X'01004937'

Causing functions: MO

Explanation: Support for double-byte character set (DBCS) translation is not available.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported or the function was not included during customization.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: AN, GI, GL, GO, GP, GW, MO, RE, RK, RO, UN

Explanation: The request or reply DATA length is not correct.

Action: Correct the request parameters and try again. For the AN, MO, and UN functions, correct the call parameters and try again.

P2 X'01005032'

Causing functions: AU, AX, CP, DU, GD, GG, GI, GL, GU, RD, RN, RR, RU, RX, SD, SF, SN, SO, SU, UA, UD, UI, UL, UM, UO, UU, UX, VR, XN

Explanation: The following could be true:

- The request or reply DATA length is not correct.
- The request or reply PARMLIST length is not correct.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: RF

Explanation: The request DATA length is not correct.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: RL, R1

Explanation: The following could be true:

- The request DATA length or reply DATA length is not correct.
- The sum of the record length and the user message is longer than X'0400'.

Action: Correct the request parameters, and then try again.

P2 X'01005032'

Causing functions: WL

Explanation: The sum of the record header length and the specified request DATA length exceeds the record length defined in customization or is longer than X'0400' bytes.

P3 X'01005033'

Causing functions: AU, AX

Explanation: The user identifier already exists or a user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: AU, AX, CP, DU, GU, RD, RL, RN, RU, RX, R1, SD, SU, UA, UD, UI, UL, UM, UO, UU, UX, XN

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing or the user identifier is not valid.

P3 X'01005033'

Causing functions: GL, GP, GW

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing, the workstation identifier does not exist, or no user is signed on.

P3 X'01005033'

Causing functions: GO, RE, RK, RO

Explanation: The function was not accepted. A user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: RF

Explanation: The function was not accepted. A user is not signed on, or a user signon with the appropriate authorization level is missing.

P3 X'01005033'

Causing functions: SF

Explanation: The workstation or user identifier do not exist or no user is signed on.

P3 X'01005033'

Causing functions: SN, SO

Explanation: The function was not accepted. The user identifier is not valid, another user is already signed on to the same workstation, or the maximum number of simultaneously signed-on users is exceeded.

System manager server

P4 X'01005034'

Causing functions: GU, RD, RN, RU

Explanation: The requested data is locked. A 'retrieve for update' process is in progress or the requested data belongs to a signed-on user.

Action: On reply, the DATA area contains the requested data.

P4 X'01005034'

Causing functions: GO, RE, RK, RO

Explanation: The Rep1y DATA length is too small. On reply, the DATA area does not contain all the users.

Action: Provide more storage for Rep1y DATA.

P4 X'01005034'

Causing functions: SN, SO, UO

Explanation: The user profile was not found.

P4 X'01005034'

Causing functions: VR

Explanation: The record definition is damaged or a DBCS field validation was attempted when DBCS support was unavailable.

P5 X'01005035'

Causing functions: AU, AX, GU, RD, RU, RX

Explanation: The requested data is locked. A 'retrieve for update' process is in progress or the requested data belongs to a signed-on user.

Action: Try again later.

P5 X'01005035'

Causing functions: SN, SO

Explanation: The user profile or user data are locked. A 'retrieve for update' process is in progress.

Action: Try again later.

P6 X'01005036'

Causing functions: AU, AX, CP, DU, GU, RU, RN, RX, SF, SN, SO, XN

Explanation: The user profile file was not found.

P6 X'01005036'

Causing functions: RF

Explanation: The function was not performed. The system was unable to read the password in the user profile.

P6 X'01005036'

Causing functions: RR, VR

Explanation: The record definition file was not found.

P6 X'01005036'

Causing functions: SU, UD, UU, UX

Explanation: An update is not allowed. A previous 'retrieve for update' is missing.

P7 X'01005037'

Causing functions: AN, UN

Explanation: The following could be true:

- The LANDP files EHC#ALRN.DAT or EHC#RESN.DAT were not found.
 - The user files EHC#ALRU.DAT or EHC#RESU.DAT were not found.
 - The requested network management vector transport (NMVT) definition was damaged or not found.
-

P7 X'01005037'

Causing functions: AU, AX, SU, UD, UI, UO, UU, UX

Explanation: The supplied data does not agree with the expected format.

P7 X'01005037'

Causing functions: DU, RD, RL, RN, R1, WL, XN

Explanation: The supplied parameter does not agree with the expected format.

P7 X'01005037'

Causing functions: RF, SF

Explanation: The function was not performed. The sign-off type is reserved.

P7 X'01005037'**Causing functions:** RR, VR**Explanation:** The requested record definition was not found.

P7 X'01005037'**Causing functions:** SN, SO**Explanation:** User sign on is denied. The user profile was destroyed or modified without using the appropriate system manager functions.

P8 X'01005038'**Causing functions:** CP, RF, SN, SO**Explanation:** The password is not valid.**Action:** Try again.

P8 X'01005038'**Causing functions:** DU, UU, UX**Explanation:** Deleting or updating the user profile is denied. This is the only user with authorization level A or this is the user who receives operator messages.

P8 X'01005038'**Causing functions:** UO**Explanation:** A new user must have authorization level O.

P8 X'01005038'**Causing functions:** VR**Explanation:** The data is not valid.

P9 X'01005039'**Causing functions:** SN, SO**Explanation:** User sign on is denied. The user is already signed on at another workstation.

P9 X'01005039'**Causing functions:** DU**Explanation:** Deleting the user is denied. The user is signed on, the user profile is locked, or the user data is locked.**Action:** Try again later.

Device errors

U1 X'01005531'**Causing functions:** RL, R1, WL**Explanation:** An irrecoverable error has occurred: the log file is destroyed.**Action:** Delete the log file and restart LANDP.

U3 X'01005533'**Causing functions:** AU, AX, CP, DU, GI, GL, GU, RD, RF, RU, RX, SF, SU, UO, UU, UX**Explanation:** A server internal error has occurred.**Action:** Report the problem.

U5 X'01005535'**Causing functions:** AN, AU, AX, CP, DU, MO, RD, RL, RN, RR, R1, SN, SO, SU, UN, UU, UX, VR, WL, XN**Explanation:** An error occurred while accessing a Windows NT file.**Action:** Try the request again. If the problem persists, it is probably a hardware error.

U5 X'01005535'**Causing functions:** GI, GL**Explanation:** An error occurred while accessing the FBSS#USP file. On reply, the DATA area contains the user ID.

U5 X'01005535'**Causing functions:** GP**Explanation:** An error occurred while accessing the FBSS#USP file. On reply, the DATA area contains the workstation ID.

U5 X'01005535'**Causing functions:** RE**Explanation:** An error occurred while accessing the FBSS#USP file. On reply, the DATA area may contain some user IDs.

System manager server

U5 X'01005535'

Causing functions: RF, SF, UA, UD, UI, UL, UM, UO

Explanation: An error occurred while accessing a Windows NT file. The update was made only in storage.

Action: Try the request again. If the problem persists, it is probably a hardware error.

U5 X'01005535'

Causing functions: GO, RO

Explanation: An error occurred while accessing the FBSS#USP file. On reply, the DATA area **date and time of last sign on** field is set to blanks.

TCP/IP wide area communications server

The following codes are placed in the log by EHCTCP.EXE.

ALU

Explanation: LU name inconsistent with LOCADDR. LOCADDR is shown.

Action: Ensure constant difference between LOCADDR and numeric suffix of LU names.

CN1 through CN8

Explanation: Error returned from TCP/IP during connection. TCP/IP return code is shown.

Action: Check that session partner (for example, AnyNet) is active.

CNP

Explanation: Invalid port number in EHCTCP.INI. Port number is shown.

Action: Correct the port number in EHCTCP.INI and re-start LANDP.

CNS

Explanation: Invalid number of sessions in LU6.2 conversation mode definition. Number of sessions is shown.

Action: Correct the mode definition in EHCTCP.INI and re-start LANDP.

CNW

Explanation: Invalid number of contention winners in LU6.2 conversation mode definition. Number of contention winners is shown.

Action: Correct the mode definition in EHCTCP.INI and re-start LANDP.

GH1

Explanation: TCP/IP unable to resolve host name to IP address. TCP/IP "gethostbyname" return code is shown.

Action: Check the name in the EHCTCP.INI file. Check your local TCP/IP HOSTS file if used. Check host name resolution with TCP/IP PING command.

IF1 through IF3

Explanation: Definition in EHCTCP.INI file not found. IF1 shows name sought, IF2 shows type sought, and IF3 shows value sought.

Action: If the missing definition should be present, correct the EHCTCP.INI file and re-start LANDP. If the missing definition should not be present, the most likely cause is incorrect parameters to a PPC server OP request, or incorrect session number on a SNA server CN request. Correct this.

IN1 through IN7

Explanation: Operating system error occurred. Operating system return code is shown.

Action: Re-boot your computer. If the error persists, contact your service representative.

INC

Explanation: Initialisation file EHCTCP.INI has invalid contents. Offset of invalid contents is shown.

Action: Correct the contents of EHCTCP.INI and re-start LANDP.

INF

Explanation: Initialisation file EHCTCP.INI not found.

Action: Place EHCTCP.INI in the directory with LANDP and re-start LANDP.

INL

Explanation: Listening port in EHCTCP.INI is invalid. Port is shown.

Action: Correct the port number in EHCTCP.INI and re-start LANDP.

INM

Explanation: Not enough memory available for sessions.

Action: Make more memory available or reduce the number of sessions and re-start LANDP.

TCP/IP wide area communications server

INN

Explanation: Listening value in EHCTCP.INI is invalid. Value is shown.

Action: Correct the listening value in EHCTCP.INI and re-start LANDP.

INP

Explanation: Loading parameter error. Index of bad parameter is shown.

Action: Correct the EHCTCP loading statement and re-start LANDP.

INa through INe

Explanation: TCP/IP error occurred. TCP/IP return code shown.

Action: Make sure TCP/IP is operational and configured correctly.

MX1

Explanation: Maximum number of sessions exceeded. Maximum is shown.

Action: Increase the maximum or reduce session usage.

MX2

Explanation: Maximum number of TCP/IP connections exceeded. Maximum is shown.

Action: Reduce session usage.

RD1 through RD2

Explanation: Error returned reading data from TCP/IP. TCP/IP return is code shown.

Action: Check that session partner (eg AnyNet) is active.

SD1

Explanation: Error returned sending data to TCP/IP. TCP/IP return code is shown.

Action: Check that session partner (eg AnyNet) is active.

TE1 through TE2

Explanation: Unexpected TELNET command code or sub-negotiation code. Unexpected code is shown.

Action: Contact your service representative.

Chapter 11. LANDP for AIX return codes

LANDP return codes are values returned by servers as a result of a function or service request made by an application program. This chapter lists the codes returned by LANDP for AIX servers.

“Return codes” on page 5 briefly describes LANDP return codes, including the types and classes of codes. It also describes how to interpret hexadecimal and ASCII return codes.

The shared-file server (shfile) can produce loading codes when LANDP for AIX is started. See Chapter 7, “Loading return codes” on page 87 if a return code is produced during startup of LANDP for AIX.

Quick Guide

There are two types of LANDP return codes: router and server. Router return codes are stored with offset 4 in the CPRB. Server return codes are stored with offset 40 in the CPRB. Operations are successful only if the router and the server return codes are zero.

Listings include the hexadecimal return code and, if available, the translated ASCII return code. The ASCII code appears in parentheses. The first character of the ASCII return code denotes the code class, as follows:

Character	Class
I	<i>Intervention required.</i> These return codes occur when workstation operators or technical service personnel can remove the error (or fault).
L	<i>LAN services error.</i> These return codes can occur in any function request to any server.
P	<i>Programming error.</i> These return codes can occur while developing or debugging application programs. They should not occur in daily operation with error-free programs.
U	<i>Device error (Unable to access equipment).</i> These return codes occur when LANDP software cannot carry out a request. The most likely cause is a hardware error (or fault).

DCZYFREE program

DCZYFREE program

The codes that are returned by the DCZYFREE program are described in “LAN and router” on page 301.

DCZYLIP program

The following codes are returned by dczylip, the LANDP for AIX Internet Protocol program. See “Dczylip program services” on page 59 for information about the program.

CE01

Explanation: TCP/IP returned error data to the **opensocket** function. Dczylip cannot start.

Action: Make sure TCP/IP is operational.

CE02

Explanation: TCP/IP returned error data to the **bind** function. Dczylip cannot start.

Action: If data is 48 (EADDRINUSE), the port number requested by Dczylip could be in use by another TCP/IP application. Stop the application or start dczylip on all the LANDP workgroup workstations, using the **/N** parameter.

If data is 49 (EADDRNOTAVAIL), either TCP/IP is not started or the TCP/IP network interface is not active. Make sure TCP/IP is operational.

CE03

Explanation: TCP/IP returned error data to the **setsockopt** function. dczylip cannot start.

Action: Make sure TCP/IP is operational.

CE04

Explanation: TCP/IP returned error data to the **ioctl** function. Dczylip cannot start.

Action: Make sure TCP/IP is operational.

CE05

Explanation: The workstation identifier (**ws_id**) is duplicated in the configuration. Dczylip cannot start.

Action: Correct the workstation identifier.

CE06

Explanation: TCP/IP returned error data to the **gethostbyname** function for the workstation identifier (**ws_id**). dczylip cannot start.

Action: The workstation identifier corresponding to **ws_id** is not correctly defined in the TCP/IP 'hosts' file or 'names' server, or TCP/IP could not access the 'names' server or open the 'hosts' file.

CE07

Explanation: The local workstation identifier (**ws_id**) is duplicated as a related workstation. dczylip cannot start.

Action: Correct the workstation identifier.

CE08

Explanation: TCP/IP returned a null address for the workstation identifier (**ws_id**). dczylip cannot start.

Action: Check the TCP/IP 'hosts' file format or 'names' server definition.

CE10

Explanation: TCP/IP returned error data to the **sendto** function.

Action: If data is 81 (EHOSTUNREACH), then the **sendto** failed because **ws_id** cannot be reached from the local workstation. If a session is still being established, then LIP checks alternative addresses for **ws_id**. If no address is reachable, then LIP cannot continue running. In this case, check the routing table and make sure there is a path to the remote workstation.

If data is not 81, then LIP cannot continue running. Make sure TCP/IP is operational.

CE11

Explanation: The **sendto** function failed because TCP/IP output buffer space was not available. dczylip had to retry a TCP/IP output function for lack of space in TCP/IP output buffers.

Action: This could be caused by an overloaded network. The session is continued.

CE12

Explanation: Message length data to be sent to the workstation identifier (**ws_id**) is larger than the maximum allowed. An application tried to send more data than the maximum allowed. The message was not sent.

Action: Check the message length.

dczylip program

CE20

Explanation: TCP/IP returned error data to the **recvfrom** function. dczylip cannot continue running.

Action: Make sure TCP/IP is operational.

CE30

Explanation: A session with the workstation identifier (ws_id) closed. dczylip closed a session with ws_id when a segmented message 'send' operation could not be completed.

Action: Session re-establishment procedures are started.

CE32

Explanation: A session with the workstation identifier (ws_id) closed. dczylip closed a session with ws_id because contact was lost.

Action: Session re-establishment procedures are started.

CE40

Explanation: A configuration error was detected. The remote workstation identifier (ws_id) and the INET address do not match local configuration data. A session with ws_id was not established.

Action: Check the local TCP/IP 'hosts' file or 'names' server definitions.

CE41

Explanation: A configuration error was detected. The remote workstation identifier (ws_id) reported that the local workstation identifier and the INET address do not match its configuration data. A session with ws_id was not established.

Action: Check the remote workstation TCP/IP 'hosts' file or 'names' server definitions.

CE50

Explanation: A storage allocation request for data bytes has failed. dczylip cannot continue running.

Action: Check storage availability.

CS01

Explanation: A session has been established with workstation ws_id.

CS02

Explanation: Remote workstation ws_id closed the session.

CSND

Explanation: Number of datagrams sent to workstation ws_id.

CSRD

Explanation: Number of datagrams sent to workstation ws_id that required re-transmission.

CSPF

Explanation: Minimum percentage of free space in the re-transmission table during dczylip activity.

CSNE

Explanation: Number of times a message could not be sent because of lack of space in the re-transmission table.

CSNW

Explanation: Number of times a message could not be sent because the send window was not adequately open.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal server, the store-for-forwarding server, or both servers.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Electronic journal server

The following codes are returned only by the electronic journal server.

J1 X'01004A31'

Causing functions: IL, SL

Explanation: The logical journal environment is not selected.

J2 X'01004A32'

Causing functions: SL

Explanation: A new logical journal was not found, or two or more SL functions are in sequence.

J3 X'01004A33'

Causing functions: SL

Explanation: An active logical journal was not found.

J6 X'01004A36'

Causing functions: AL

Explanation: The journal name is already in use.

J7 X'01004A37'

Causing functions: AL

Explanation: The data set is already allocated.

J8 X'01004A38'

Causing functions: AL

Explanation: The next data set is not empty.

J9 X'01004A39'

Causing functions: DA, SL

Explanation: Deallocation is not possible because the latest allocated data set already contains records.

JA X'01004A41'

Causing functions: AR, DA, IP, RL, RR, RS

Explanation: The physical journal was not found.

JB X'01004A42'

Causing functions: DL, UP

Explanation: No record is being held.

JC X'01004A43'

Causing functions: AR, RL, RR

Explanation: No electronic journal is selected.

JD X'01004A44'

Causing functions: AR, DA, IL, RL, RR, SL

Explanation: The journal was not found.

JE X'01004A45'

Causing functions: DA, SL

Explanation: The data set is not allocated.

JF X'01004A46'

Causing functions: RR

Explanation: There are not enough active journals.

JG X'01004A47'

Causing functions: AR, RR

Explanation: The accessed physical journal is not in use or is not allocated.

EJ and SFF servers

JH X'01004A48'

Causing functions: DL, UP

Explanation: The record cannot be deleted or updated because it belongs to another logical journal.

JJ X'01004A4A'

Causing functions: AL, AR, DA, DL, RL, RR, SL, UP

Explanation: The physical or logical journal name is blank.

JK X'01004A4B'

Causing functions: DL

Explanation: The record has already been deleted.

JL X'01004A4C'

Causing functions: RR

Explanation: The delete flag is not equal to Y or N.

JM X'01004A4D'

Causing functions: RR

Explanation: The hold flag is not equal to H or N.

JN X'01004A4E'

Causing functions: SL

Explanation: There are too many logical journals.

JO X'01004A4F'

Causing functions: DA

Explanation: This journal is not the latest allocated journal.

Electronic journal and store-for-forwarding servers

The following codes are returned by the electronic journal and store-for-forwarding servers.

P0 X'01005030'

Causing functions:

Explanation: The function is not supported.

P1 X'01005031'

Causing functions: IN

Explanation: The system could not initiate the server.

P2 X'01005032'

Causing functions: AR, DL, QR, RR, UP

Explanation: The format name is unknown.

P5 X'01005035'

Causing functions: AR

Explanation: The query server is not in query mode.

P6 X'01005036'

Causing functions: AR, DL, RR, UP

Explanation: A separate session is already open.

P7 X'01005037'

Causing functions: AR, DL, DR, ER, RR, RS, UP

Explanation: The system cannot allocate an extra session.

Action: Try again later.

P9 X'01005039'

Causing functions: AR, DL, QR, RR, TS, UP

Explanation: A separate session is not open.

PC X'01005043'

Causing functions: RR

Explanation: The system could not retrieve the record from the database. The following could be true:

- No further records exist in the database.
- The database has a problem, for example the table is locked.

Action: Check the replied DATA length. If the length is greater than 0, an error in the database has occurred. The database error message can be found in replied DATA.

PE X'01005045'**Causing functions:** RR**Explanation:** The search definition has an error or the search mode is not valid.

X'01005047' (PG)**Causing functions:** Any**Explanation:** The server is not yet initialized.

PJ X'0100504A'**Causing functions:** AR, DL, RR, UP**Explanation:** A separate session flag has an error.

PM X'0100504D'**Causing functions:** DL, UP**Explanation:** A record definition differs.

PP X'01005050'**Causing functions:** RR**Explanation:** A flag is not valid.

PR X'01005052'**Causing functions:** RR**Explanation:** The returned record is truncated.

PS X'01005053'**Causing functions:** DR**Explanation:** The record format has already been defined.

PT X'01005054'**Causing functions:** AR**Explanation:** A sequence number overflow has occurred.

PW X'01005057'**Causing functions:** RR**Explanation:** A format name was not provided for the search criteria.

PX X'01005058'**Causing functions:** RR**Explanation:** The search mode is not compatible with a separate session BT/ET flag.

PY X'01005059'**Causing functions:** RR**Explanation:** The query handle is not valid. No preceding search mode F was provided.

R0 X'01005230'**Causing functions:** DR**Explanation:** The definition syntax was not valid.

R1 X'01005231'**Causing functions:** DR**Explanation:** The database table for this record format could not be created.

R2 X'01005232'**Causing functions:** DR**Explanation:** The name of a new format could not be added to the table of known formats.

R3 X'01005233'**Causing functions:** AR, DL, ER, UP**Explanation:** The record format name is not valid.

R4 X'01005234'**Causing functions:** ER**Explanation:** Records of this format are still in the database.

R5 X'01005235'**Causing functions:** ER**Explanation:** The format table could not be dropped from the database.

R6 X'01005236'**Causing functions:** ER**Explanation:** The format name could not be deleted from the table of known format names.

EJ and SFF servers

R7 X'01005237'

Causing functions: RS

Explanation: No record formats are known.

R8 X'01005238'

Causing functions: DR

Explanation: The record exceeds the maximum length.

R9 X'01005239'

Causing functions: DR

Explanation: The record format table is full.

TA X'01005441'

Causing functions: DL, UP

Explanation: Record status could not be updated in the database.

TB X'01005442'

Causing functions: AR, DL, DX, RR, RS, TS, UP

Explanation: The database 'commit' failed.

TC X'01005443'

Causing functions: DX, ER

Explanation: Records in the database could not be counted.

TD X'01005444'

Causing functions: DX, RS

Explanation: Deleting a record failed.

TE X'01005445'

Causing functions: AR, DL, RR, UP

Explanation: A database checkpoint failed.

TF X'01005446'

Causing functions: AR

Explanation: Inserting a record in the database failed.

TL X'0100544C'

Causing functions: Any

Explanation: A parameter or data length is not legal. The request has not been processed.

TM X'0100544D'

Causing functions: RR

Explanation: A created SQL command exceeds allowed limits.

Action: Reduce the length of the search criteria.

TQ X'01005451'

Causing functions: DL, DR, DX, ER, RS, RR

Explanation: The query server is not functional.

TS X'01005453'

Causing functions: DL, DR, DX, ER, RR, RS

Explanation: The structured query to query server failed.

TY X'01005459'

Causing functions: Any

Explanation: The reply DATA or parameters have been truncated.

Store-for-Forwarding server

The following codes are returned only by the store-for-forwarding server.

S0 X'01005330'

Causing functions: DL

Explanation: The record cannot be deleted because it has not been sent by the forwarding facility.

S1 X'01005331'

Causing functions: IS

Explanation: The reply DATA length is insufficient.

S2 X'01005332'

Causing functions: AR, DL, DS, EN, IS, RR, RS, TB, TE

Explanation: The data set was not found.

S3 X'01005333'

Causing functions: SI

Explanation: An SNA session number is not valid.

S4 X'01005334'

Causing functions: SI

Explanation: The data format has an error.

S5 X'01005335'

Causing functions: TB, TE

Explanation: An official forwarder is not registered.

S6 X'01005336'

Causing functions: AR

Explanation: The data set is disabled for adding records.

Action: Issue an EN function.

S8 X'01005338'

Causing functions: DL, UP

Explanation: No record is being held.

S9 X'01005339'

Causing functions: DL

Explanation: A record number is not valid, or a record cannot be deleted.

SA X'01005341'

Causing functions: RR

Explanation: The retrieve mode flag is not R, D, or U.

SB X'01005342'

Causing functions: CS, DL, DX, RR, SI

Explanation: This is not an official forwarder.

Action: Stop the other forwarder and retry.

SD X'01005344'

Causing functions: CS, DL, DX, TB, TE

Explanation: An SNA session number is not valid.

SE X'01005345'

Causing functions: CS

Explanation: An SNA session status is not valid.

SG X'01005347'

Causing functions: RR

Explanation: The status of the record could not be changed.

SJ X'0100534A'

Causing functions: RR

Explanation: A data set name was not provided.

SU X'01005355'

Causing functions: TB, TE

Explanation: A data set or session flag was not valid.

Financial printer server

The following codes are returned by the financial printer server. It supports the following document, passbook, and transaction printers:

- IBM 4009 Universal Banking Printer
- IBM 4712 Transaction Printer
- IBM 4722 Document Printer
- IBM 4772 Ink Jet Transaction Printer

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation: the function was performed.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I3 X'01004933'

Causing functions: CH, WR

Explanation: The attention line shown in the parameter definition has been reached. Writing can continue to the end of the page.

For a reader/encoder magnetic stripe (REMS) device, the read and verify process did not find data. There is an encoding error.

I3 X'01004933'

Causing functions: RD

Explanation: The following could be true:

- Data was not found on the magnetic stripe because the stripe is blank, there is no stripe, or the stripe is misplaced on the passbook.
- An incorrect *Devparm* for REMS has been loaded.

I4 X'01004934'

Causing functions: CH, WR

Explanation: The end of the journal, document, or passbook page was reached. The defined last line of the page has been written.

Action: If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed (except for a journal that begins a new page).

I4 X'01004934'

Causing functions: CH, RD, WR

Explanation: For reader/encoder magnetic stripe (REMS) devices, the passbook has been replaced while a chained sequence of operations was executed. There is no passbook for REMS operations.

I5 X'01004935'

Causing functions: CH, RD, WR

Explanation: The printer stop button was pressed or the printer cover is open.

Action: Press the start button or close the printer cover, insert the document, and then try again.

I6 X'01004936'

Causing functions: Any

Explanation: The printer is busy because of the redirection.

Action: Try again later. (This code is not supported in LANDP for AIX Version 2 Release 1.0.)

I7 X'01004937'**Causing functions:** CH, DF, WR**Explanation:** The physical end of the document, journal, or passbook was reached. There is no paper: the document, journal, or passbook has not been inserted.**Action:** If the end is reached, the following are true:

- On the first try, the line is printed correctly.
- On retries, the line is not printed.

Insert the document, journal, or passbook and try again.

I9 X'01004939'**Causing functions:** OP**Explanation:** The resource is assigned to another workstation or another session.

IR X'01004952'**Causing functions:** RD, WR**Explanation:** Intervention is required.**Action:** Press the A or B button to start printing.

Programming errors

P1 X'01005031'**Causing functions:****Explanation:** The function is not supported.**Action:** Check the request format and parameters.

P2 X'01005032'**Causing functions:** Any**Explanation:** A data length is not correct.

- DF function: The name in DATA is not a defined format description name, or the length is X'0000' or greater than X'0008'.
- WR function: A line truncated because autonewline was not selected.

P3 X'01005033'**Causing functions:** AR, CD, CH, CL, DF, DU, EC, LL, RC, RD, SC, WR**Explanation:** A previous open function is missing.

P4 X'01005034'**Causing functions:** DF, OP**Explanation:** Format parameters are not correct. An REMS component is not available.

P6 X'01005036'**Causing functions:** AR, DU, SC, WR**Explanation:** The following could be true:

- There is a data content error.
- The code page or font ID is not supported by the printer.
- Data goes beyond the display.
- There is a display download images content error.

P7 X'01005037'**Causing functions:** RD, WR**Explanation:** The following could be true:

- The passbook is not in the REMS position.
- The REMS format parameter has not been loaded.
- The passbook is not usable for an REMS operation because it has already been processed by a print operation.
- The format definition contains a passbook width that is not valid.

P8 X'01005038'**Causing functions:** AR, CD, DU, RD, WR**Explanation:** No operator panel component is available.

P9 X'01005039'**Causing functions:** Any**Explanation:** An AR function is in progress.**Action:** Cancel the function or wait until it finishes processing.

PZ X'0100505A'**Causing functions:** Any**Explanation:** A parameter length is not valid.**Action:** (This code is not supported in LANDP for AIX Version 2 Release 1.0.)

Financial printer server

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: There is a printer or REMS hardware malfunction.

Action: A printer hardware malfunction can often be cleared by powering off, and then powering on the printer. If the problem persists, obtain service.

U2 X'01005532'

Causing functions: Any

Explanation: There is a printer malfunction. The printer does not answer a status call (device time out).

Action: Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'

Causing functions: Any

Explanation: An operating system call error has occurred.

Action: Make sure the Xstation is turned on.

U5 X'01005535'

Causing functions: Any

Explanation: A device driver error has occurred.

Action: Make sure the Xstation is turned on. If the problem persists, follow service reporting procedures.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver is not installed.

Action: (This code is not supported in LANDP for AIX Version 2 Release 1.0.)

U7 X'01005537'

Causing functions: OP

Explanation: The printer ID byte is unknown.

U8 X'01005538'

Causing functions: Any

Explanation: A server internal error has occurred.

Action: Obtain software service.

U9 X'01005539'

Causing functions: Any

Explanation: A resource was not found in the configuration file. There is no defined session, or the file is damaged.

LAN and router

The following codes are returned when errors are detected by the LANDP workgroup server or the router. The errors can occur in any function request to any server.

X'01000402'

Explanation: The process supervisor is not initialized.

Action: Issue the process supervisor local function IN.

X'01000404'

Explanation: SPV.EXE is not loaded.

Action: Load the SPV.EXE program.

X'01000602'

Explanation: The request PARMLIST length is not correct.

Action: PARMLIST must be the length specified for each function.

X'01000604'

Explanation: The reply PARMLIST length is not correct.

Action: PARMLIST must be the length specified for each function.

X'01000608'

Explanation: The server name is not valid.

Action: The resource origin must not be SPV.*.

X'01000609'

Explanation: The request DATA length is not valid.

X'0100060C'

Explanation: The request PARMLIST address is not valid and the request PARMLIST length is nonzero.

Action: Correct the request PARMLIST address.

X'0100060E'

Explanation: The request DATA address is not valid the request DATA length is nonzero.

Action: Correct the request DATA address.

X'01000610'

Explanation: The reply PARMLIST address is not valid and the reply PARMLIST length is nonzero.

Action: Correct the reply PARMLIST address.

X'01000611'

Explanation: The reply DATA length is not valid (only for undocumented LAN server requests).

X'01000612'

Explanation: The reply DATA address is not valid and the reply DATA length is nonzero.

Action: Correct the reply DATA address.

L0 X'01004C30'

Explanation: The sum of the DATA length and the PARMLIST length exceeds X'1040' bytes.

Action: Correct the connectivity programming request block (CPRB).

L1 X'01004C31'

Explanation: The resource is not defined in the resources table of this workstation.

Action: Check the configuration record.

L2 X'01004C32'

Explanation: There is no session with the called server.

Action: Connect the workstation where the requested server is installed.

L3 X'01004C33'

Explanation: A session is not defined. You are attempting to send a request to a workstation that is not defined in the LANDP workgroup configuration session table.

Action: Check the configuration record.

LAN and router

L5 X'01004C35'

Explanation: The server is not loaded.

Action: Check the initialization procedures.

L6 X'01004C36'

Explanation: An irrecoverable error occurred on a local workstation.

Action: Restart the workstation.

L8 X'01004C38'

Explanation: There is no response from the server. The time-out value specified during configuration has been exceeded.

Action: Retry the request, check the status of the workstation, or increase the time-out value.

L9 X'01004C39'

Explanation: A LAN hardware failure has occurred.

Action: Review all LAN connections and power-on status. Correct any connection problem and start again, reloading any required LANDP components.

LB X'01004C42'

Explanation: The CPRB format is not valid.

LE X'01004C45'

Explanation: The LAN server is not loaded.

LG X'01004C47'

Explanation: The message cannot be sent.

Action: Try again.

LH X'01004C48'

Explanation: A response was received after the time-out value specified during configuration had been exceeded.

LJ X'01004C4A'

Explanation: Access was attempted without authorization level F.

LK X'01004C4B'

Explanation: The system detected an attempt to access protected resources from an unexpected workstation.

Action: Sign on to the system manager from this workstation.

LANDP-DCE servers and clients

LANDP for AIX provides a LANDP-DCE application programming interface. This interface enables LANDP clients to make requests of Distributed Computing Environment (DCE) servers and DCE clients to request services from LANDP servers.

For information about the LANDP-DCE API, see the *LANDP Programming Reference* book. For detailed descriptions of return codes, see the DCE server documents and the *DCE Application Development Reference* book.

LANDP clients

LANDP clients receive the following return codes when accessing DCE servers.

X'00000000'

Explanation: The server processing is error-free.

X'0100nnnn'

Explanation: DCE server return code. A well-behaved DCE server with LANDP-DCE interface should always provide return codes in this format.

X'nnnnnnnn'

Explanation: DCE communication status (comm_status) or DCE fault status (fault_status).

DCE clients

DCE clients receive the following return codes when accessing LANDP servers through the LANDP-DCE interface.

Function Call:

`error_status_t LANDP_get_context (bh,ch)`

The following list shows the value of `error_status_t` and the associated explanation.

X'00000000'

Explanation: A LANDP context was successfully assigned.

Action: None required.

X'01000001'

Explanation: This is a LANDP context error. There are no free LANDP contexts.

Action: Increase the maximum number of concurrent DCE clients when completing the LANDP for AIX configuration, or release some LANDP contexts.

X'01000002'

Explanation: This is a LANDP context error. A LANDP context could not be assigned. LANDP for AIX control point may not be started.

Action: Check the system log for additional information.

X'nnnnnnnn'

Explanation: A DCE communication or fault status has occurred.

Action: Check the status in the *DCE Application Development Reference*.

Function Call:

`error_status_t LANDP_service (ch, cprb)`

The following lists shows the value of `error_status_t` and the associated explanation.

X'00000000'

Explanation: The server processing was error-free.

Action: None required.

DCE servers and clients

X'01000003'

Explanation: This is a LANDP context error. The LANDP context is not valid.

Action: Use the LANDP context provided by the previously issued **LANDP_get_context** call.

X'01000004'

Explanation: This is a LANDP context error. The LANDP context was released.

Action: Get a new LANDP context, or issue this function call before releasing the context.

X'nnnnnnnn'

Explanation: A DCE communication or fault status has occurred.

Action: Check the status in the *DCE Application Development Reference*.

Note: Besides the **error_status_t** return code, the LANDP servers and the LANDP client-server mechanism provide the router return code and the server return code in the CPRB parameter.

Magnetic stripe reader/encoder (MSR/E) server

The following codes are returned by the magnetic stripe reader/encoder (MSR/E) server. It supports the following devices:

- IBM 4777 Magnetic Stripe Reader
- IBM 4777 Magnetic Stripe Reader/Encoder

Note: The MSR/E server also supports the MSR component of the IBM 4778 PIN Pad Magnetic Stripe Reader. See “Personal identification number (PIN) pad server” on page 308 for a list of PIN pad return codes.

Successful operation

X'00000000'

Causing functions: CH, CL, DV, EC, KL, OP, RD

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR, WR

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: AR, CH, OP, RD, WR

Explanation: The device cable is broken or the device is not attached.

Action: Check the connection cable.

I3 X'01004933'

Causing functions: OP

Explanation: This personal computer system unit model is not supported by the MSR/E device.

Action: See the *LANDP Introduction and Planning* book for information about selecting hardware components and “Bibliography” on page 423 for publications about specific MSR/E devices.

I5 X'01004935'

Causing functions: CH, RD

Explanation: A previous function is in process.

Action: Try again after the function finishes processing.

I8 X'01004938'

Causing functions: OP

Explanation: There are no more handles.

I9 X'01004939'

Causing functions: OP

Explanation: The resource is already assigned.

IA X'01004941'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver error.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: Any

Explanation: A length is not correct.

Action: Check the data length parameters.

P3 X'01005033'

Causing functions: AR, CH, CL, DV, KL, RD, WR

Explanation: A previous open function is missing.

P4 X'01005034'

Causing functions: DV

Explanation: A parameter is not valid.

Action: Check PARMLIST flags or the contents of DATA.

P6 X'01005036'

Causing functions: WR

Explanation: A character is not valid. The data passed does not agree with the parameters loaded in the MSR/E.

P7 X'01005037'

Causing functions: CH, RD

Explanation: There is no data pending to pass to the application, or there is no status pending to pass to the application.

P8 X'01005038'

Causing functions: AR, CL, DV, WR

Explanation: A previous function is in process.

Action: Cancel the function or wait until it finishes processing.

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

Device errors

U1 X'01005531'

Causing functions: Any

Explanation: A general failure has occurred. /*

U2 X'01005532'

Causing functions: Any

Explanation: There is no response from the MSR/E device.

Action: Check the hardware installation. If the problem persists, obtain service.

U3 X'01005533'

Causing functions: Any

Explanation: A transmission error has occurred, or the MSR/E device is attached to the wrong connector or adapter.

Action: Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'

Causing functions: Any

Explanation: A device self-test failure has occurred.

Action: Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'

Causing functions: Any

Explanation: An MSR/E device internal error has occurred.

Action: Run the personal computer system and MSR/E device diagnostic programs, and then follow the recommended action.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver error.

Personal identification number (PIN) pad server

The following codes are returned by the personal identification number (PIN) pad server. It supports the IBM 4778 PIN Pad Magnetic Stripe Reader.

Note: The PIN pad server also supports the magnetic stripe reader component of the 4778 device. It issues the same return codes as the MSR/E server, except for those codes caused by encoding functions, which are not supported by the 4778 PIN pad MSR device. See "Magnetic stripe reader/encoder (MSR/E) server" on page 305 for a list of MSR/E return codes.

Successful operation

X'00000000'

Causing functions: CL, DV, EC, GA, IV, KL, LK, LM, LP, OP, RD, RN, VA, WD

Explanation: A synchronous function was performed.

Action: None required.

X'00000000'

Causing functions: AR, AT

Explanation: An asynchronous function was started.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Any

Explanation: The device is not online or it is in power-on-reset sequence.

I2 X'01004932'

Causing functions: AR, OP, RD

Explanation: The device cable is broken or the device is not attached.

Action: Check the connection cable.

I3 X'01004933'

Causing functions: AR, GA, IV, LM, LK, LP, VA

Explanation: The referenced key is not loaded.

I4 X'01004934'

Causing functions: RD

Explanation: The PIN is not valid.

I5 X'01004935'

Causing functions: RD

Explanation: A previous function has not finished processing.

Action: Try again.

I6 X'01004936'

Causing functions: RD (AR option M)

Explanation: The pressed button is not valid.

I7 X'01004937'

Causing functions: AR (Options C and E)

Explanation: This function cannot be used in clear mode.

Action: Enter or load the master key in encrypted mode.

I8 X'01004938'

Causing functions: OP

Explanation: There are no more handles.

I9 X'01004939'

Causing functions: OP

Explanation: The resource is already assigned.

IA X'01004941'**Causing functions:** OP**Explanation:** The device driver name is not correct, the device driver is not installed, or there is a device driver error.**Programming errors**

P1 X'01005031'**Causing functions:****Explanation:** The function is not supported.**Action:** Check the request format and parameters.**P2 X'01005032'****Causing functions:** Any**Explanation:** A length is not correct.**Action:** Check the data length parameters.**P3 X'01005033'****Causing functions:** AR, CL, DV, GA, IV, KL, LK, LM, LP, RD, RN, VA, WD**Explanation:** A previous open function is missing.**P4 X'01005034'****Causing functions:** AR, DV, GA, IV, LK, LM, LP, VA**Explanation:** A flag is not valid.**Action:** Check the PARMLIST flags.**P5 X'01005035'****Causing functions:** AR, GA, LK, LM, VA**Explanation:** A key parity is not valid.**Action:** Correct the key.**P6 X'01005036'****Causing functions:** AR**Explanation:** An MSR track is not selected.

P6 X'01005036'**Causing functions:** LP**Explanation:** A decimalization table is not valid.**Action:** Check the contents of DATA.**P6 X'01005036'****Causing functions:** VA**Explanation:** The message authentication code (MAC) is not valid.**Action:** Correct the contents of DATA.**P7 X'01005037'****Causing functions:** RD**Explanation:** There is no data pending to pass to the application.**P8 X'01005038'****Causing functions:** AR, AT, CL, DV, GA, IV, LK, LM, LP, RN, VA**Explanation:** A previous function is in process.**Action:** Cancel the function or wait until it finishes processing.**PZ X'0100505A'****Causing functions:** Any**Explanation:** The request or reply PARMLIST length is less than X'001A'.**Device errors**

U1 X'01005531'**Causing functions:** Any**Explanation:** There was a general failure. /***U2 X'01005532'****Causing functions:** Any**Explanation:** There is no response from the PIN pad device.**Action:** Check the hardware installation. If the problem persists, obtain service.

PIN pad server

U3 X'01005533'

Causing functions: Any

Explanation: A transmission error has occurred, or the PIN pad device is attached to the wrong connector or adapter.

Action: Check the hardware installation. If the problem persists, obtain service.

U4 X'01005534'

Causing functions: Any

Explanation: A device self-test failure has occurred.

Action: Check the hardware installation. If the problem persists, obtain service.

U5 X'01005535'

Causing functions: AR, IV, KL, LM, LK, LP, RD, RN

Explanation: A PIN pad device internal error has occurred.

Action: Run the personal computer system and PIN pad device diagnostic programs, and then follow the recommended action.

U6 X'01005536'

Causing functions: OP

Explanation: The device driver name is not correct, the device driver is not installed, or there is a device driver error.

U7 X'01005537'

Causing functions: AR, LM

Explanation: The operation mode is not valid.

Action: Correct the operation mode.

Program-to-program communications (PPC) server

The following codes are returned by the program-to-program communications (PPC) server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Programming errors

P0 X'01005030'

Causing functions: Any, except OP

Explanation: This occurs when a transaction program requests any other function before an OP. This happens at the beginning or when the LANDP conversation has been released for some reason.

Action: The application must request an OP function.

P1 X'01005031'

Causing functions: Any

Explanation: The function is not supported. The function code is not correct or the combination of function code, parameters, and data is not consistent or supported.

Action: Fix the error in the program.

P2 X'01005032'

Causing functions: Any

Explanation: Data lengths are not correct for the specific function.

Action: Fix the program.

P2 X'01005032'

Causing functions: RD

Explanation: The data length is insufficient to hold all data coming from the partner application program. Data has been truncated to the specified length.

Action: Fix the program.

P3 X'01005033'

Causing functions: RD

Explanation: There are no messages to read.

P4 X'01005034'

Causing functions: RD

Explanation: A previously read message requires a response from the application program. This happens when the transaction program requests an RD with flag5=R. It means that the transaction program manages the sending of responses. As the PPC server asks for this response, the application program has to provide a positive or negative response.

P4 X'01005034'

Causing functions: SD

Explanation: The response to a previous request for confirmation has not yet been read.

P6 X'01005036'

Causing functions: SD

Explanation: The function is accepted with an indication that there is a message to read. This is provided as information for the application program, which in turn can issue an RD to read the message.

PPC server

P7 X'01005037'

Causing functions: SD

Explanation: The system is unable to send data because of a communication protocol error, such as:

- Trying to send data in *receive* status
- Response pending to be sent
- Trying to send a response, but no response is pending

Action: Check the transaction program logic and conversation status.

P8 X'01005038'

Causing functions: OP

Explanation: A function request was previously requested. A conversation is already established.

P9 X'01005039'

Causing functions: OP

Explanation: The LU, mode_name, parameter error, tp_name, or LU 6.2 side information identification is not valid.

Action: Check the profile set that was defined during SNA LU_6.2 configuration.

P9 X'01005039'

Causing functions: SD, CL, RD

Explanation: The connection is broken.

Action: Check the partner application for an unexpected termination.

PA X'01005041'

Causing functions: OP

Explanation: The conn_profile_name was not passed to the server or the resource_ID is not valid.

PB X'01005042'

Causing functions: OP

Explanation: The conn_profile_name is already in use.

Action: Use a different conn_profile_name.

PZ X'0100505A'

Causing functions: Any

Explanation: A parameter length is not valid.

Device errors

U1 X'01005531'

Causing functions: CL, OP, RD, SD

Explanation: The conversation was not allocated for status reasons.

Action: Check the transaction program logic, session status, conversation status, and equipment.

U2 X'01005532'

Causing functions: OP

Explanation: Conversation not allocated, try again later.

Action: It may be possible to allocate the conversation by repeating the OP function after a suitable delay. (The cause of this error could, for example, be caused by a lack of free sessions and trying again later may find one free.) Limit the number of retries as the allocation request may never succeed. Limit the frequency of retries to avoid network congestion.

U8 X'01005538'

Causing functions: Any

Explanation: An SNA/6000 system failure has occurred.

Action: Make sure the system has been set up correctly.

Query server

The following codes are returned by the query server. If you get SQL error codes, you should see the AIX system log for further information.

X'0'

Mode: Any

Explanation: Operation completed successfully.

Action: None required.

X'90' (144)

Mode: Any

Explanation: Syntax error parsing parameters.

Action: Check startup parameters.

X'91' (145)

Mode: Any

Explanation: Value error parsing parameters.

Action: Check startup parameters.

X'92' (146)

Mode: Any

Explanation: Read error services file.

Action: Configuration problem - please reconfigure.

X'93' (147)

Mode: Any

Explanation: Wrong data found in services file.

Action: Configuration problem - please reconfigure.

X'95' (149)

Mode: Any

Explanation: Error allocating shared memory.

Action: Check the system error log file.

X'96' (150)

Mode: Any

Explanation: Error while allocating memory.

Action: Check the system error log file.

AD

Mode: Any

Explanation: The specified function or operator is not valid.

Action: Check the application.

AN

Mode: Any

Explanation: Not authorized

Action: Check the authorization level for the database.

AQ

Mode: Any

Explanation: Access queue failed

Action: Check the system error log file.

BL

Mode: 'shfile'

Explanation: The database description (DBD) is locked.

Action: Try again later.

B0 (176)

Mode: Any

Explanation: Error setting signal handler.

Action: Check the system error log file.

B1 (177)

Mode: Any

Explanation: Error creating queue.

Action: Check the system error log file.

B2 (178)

Mode: Any

Explanation: Error creating semaphore.

Action: Check the system error log file.

Query server

B3 (179)

Mode: Any

Explanation: Internal error.

Action: Check the system error log file.

B4 (180)

Mode: Any

Explanation: Error initializing SSP.

Action: Check the system error log file.

X'B5' (181)

Mode: Any

Explanation: Error reading SQL type field.

Action: Check the system error log file.

CE

Mode: Any

Explanation: Table EHCSQLTB cannot be created. The query server working session has been closed.

Action: Grant necessary privileges to "root". Check the system log file.

CF

Mode: Any

Explanation: A checkpoint failed.

Action: Check the system error log file.

CI

Mode: Any

Explanation: Invalid column for DP

Action: Check the program.

CO

Mode: Any

Explanation: A conversion error has occurred.

Action: Check the program and system error log file.

DB

Mode: Any

Explanation: The database was not set.

Action: Check the program and system error log file.

DH

Mode: 'shfile'

Explanation: This operation needs DBD hold.

Action: Obtain DBD hold by requesting the EX function. Check the program.

DJ

Mode: 'shfile'

Explanation: This operation needs record lock.

Action: Obtain record lock by requesting the HN, HP, or HU functions. Check the program.

DQ

Mode: Any

Explanation: The requested functions need log in Query.

Action: Check the program.

DS

Mode: shfile

Explanation: A drop sequence failed. The sequence of the database description (DBD), which was dropped successfully, cannot be dropped.

Action: Check the system error log file.

ED

Mode: Query

Explanation: End of data rows was reached.

Action: None (information).

EE

Mode: Query

Explanation: An SQL command error has occurred.

Action: Check the code and message in the data area.

EP**Mode:** 'shfile'**Explanation:** A primary error has occurred.**Action:** Check the SQL error code in the data area.

FC**Mode:** Any**Explanation:** The function is not customized.**Action:** Check the configuration.

FD**Mode:** Any**Explanation:** The server has not been started.**Action:** Check the program or issue the GF function.

FS**Mode:** Any**Explanation:** The function is not supported.**Action:** Check the program.

GB**Mode:** 'shfile'**Explanation:** End of record list was reached. There are no more records.**Action:** None (information).

GE**Mode:** 'shfile'**Explanation:** No such record was found in GU or HU.**Action:** None (information).

GS**Mode:** Any**Explanation:** A semaphore operation failed.**Action:** Check the system log error file.

IE**Mode:** Any**Explanation:** An internal error has occurred.**Action:** Contact a support representative for assistance. Save traces.

II**Mode:** 'shfile'**Explanation:** Unique index repeated value for IS or RP.**Action:** None (information).

IQ**Mode:** Query**Explanation:** The query handle is not valid or there are no more handles left.**Action:** Check the program.

ME**Mode:** Any**Explanation:** A memory allocation error has occurred. There is not enough memory.**Action:** Add memory to the server machine or check the load parameters and LAN configuration.

NA**Mode:** 'shfile'**Explanation:** This function needs transaction opened.**Action:** Check the program.

NC**Mode:** Any**Explanation:** The server is not closed: servicing is started.**Action:** None (information).

ND**Mode:** 'shfile'**Explanation:** The supplied DBD name is not valid.**Action:** Check the program.

Query server

NL

Mode: Any

Explanation: The function requires logging, but logging is not supported.

Action: Check the database type and program.

NN

Mode: Any

Explanation: The function can be requested only in *not-logged-on* mode.

Action: Check the program.

NO

Mode: Any

Explanation: The requested function needs log in *shfile* mode.

Action: Check the program. Log in *shfile* mode with the OO function.

NP

Mode: 'shfile'

Explanation: The following could be true:

- The supplied program control block (PCB) is not valid.
- A PCB name was not supplied.
- A supplied name for a new PCB table or column was not valid.

Action: Check the program.

NQ

Mode: Query

Explanation: There is no query opened for the requested handle.

Action: Check the program.

NS

Mode: Any

Explanation: No more sessions

Action: Increase the number of sessions on startup parameters.

NT

Mode: Any

Explanation: The requestor PC-ID is not customized to be serviced.

Action: Check the LAN configuration.

PE

Mode: 'shfile'

Explanation: Program control blocks (PCBs) already exist. The function requires erasing all PCB definitions that refer to the same DBD.

Action: Erase all the related PCBs and try again.

PE

Mode: Query

Explanation: Parameters are expected. The statement contains '?' (parameter markers) but not enough were pre-fetched.

Action: Check the program and use the SP function to pre-fetch parameters.

QE

Mode: Query

Explanation: A query error has occurred.

Action: Check the code and message in the data area.

QI

Mode: 'shfile'

Explanation: A qualifier for index creation or deletion is not valid.

Action: Check the program.

RE

Mode: 'shfile'

Explanation: Resources are exhausted.

Action: Contact a support representative for assistance. Save traces.

RF**Mode:** Any**Explanation:** The request failed.**Action:** Check the system error log file.

RL**Mode:** 'shfile'**Explanation:** The resource is locked. Time-out expired without return. Statement interrupted.**Action:** Try again later.

RS**Mode:** Any**Explanation:** The relational database management system (RDBMS) engine or the LANDP for AIX query server session terminated unexpectedly.**Action:** Check the system error log file and refer to the documentation for the installed RDBMS products.

SP**Mode:** Any**Explanation:** The start process failed.**Action:** Check the system error log file.

SR**Mode:** Any**Explanation:** A send request failed.**Action:** Check the system error log file.

TC**Mode:** Any**Explanation:** A table has too many columns.**Action:** Check the program and table. The maximum supported number of columns per table is 128.

TE**Mode:** Any**Explanation:** A request has been ended or rejected because of *time expired*.**Action:** Try again later.

TI**Mode:** 'shfile'**Explanation:** A type is not valid. The type of the field specified in the DD function is not valid or not supported.**Action:** Check the program. Verify the DD function input block.

TL**Mode:** Any**Explanation:** A length in the passed data or parameters is not valid.**Action:** Check the program.

US**Mode:** Any**Explanation:** The user is not set.**Action:** Check the program and the system error log file.

YA**Mode:** 'shfile'**Explanation:** The transaction is already open.**Action:** None (information).

YO**Mode:** 'shfile'**Explanation:** The shared file is already open in online mode ('shfile').**Action:** None (information).

YP**Mode:** Any**Explanation:** The GF function was already requested.**Action:** None (information).

YQ**Mode:** Query**Explanation:** Already logged in query mode.**Action:** None (information).

Shared-file server

Shared-file server

The following codes are returned by the shared-file server. You should see Chapter 7, "Loading return codes" on page 87 for the loading return codes.

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

X'00000000'

Causing functions: QP

Explanation: The program control block (PCB) information has been returned.

Action: None required.

X'00000000'

Causing functions: RH

Explanation: The header information has been returned.

Action: None required.

AD X'01004144'

Causing functions: Not applicable

Explanation: The function is not supported.

AD X'01004144'

Causing functions: FU, GU, HU, KU

Explanation: A search parameter is not correct or cannot be found.

BL X'0100424C'

Causing functions: EX, HN, HP, HU, IS, KN, KP, KU

Explanation: The shared file is blocked by another workstation operating in batch mode, or another application is holding the database description (DBD) in exclusive use.

Action: Rollback is recommended.

CE X'01004345'

Causing functions: Any

Explanation: Critical Error: The first byte of DATA contains the return code.

Action: See "Critical errors" on page 321 for more information.

CO X'0100434F'

Causing functions: BT, OB

Explanation: Job start is not allowed. The system is in the process of closing.

DA X'01004441'

Causing functions: RP

Explanation: An attempt was made to replace a record with keys that cannot be changed. Updating records with keys that have this attribute is not allowed.

DB X'01004442'

Causing functions: CB, OB

Explanation: Batch opening was denied because the shared-file server is open for online work.

DH X'01004448'

Causing functions: DL, HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The shared file must be on hold for this batch request.

DJ X'0100444A'

Causing functions: DL, RP

Explanation: The record is not on hold.

DO X'0100444F'

Causing functions: BT, ET, OO

Explanation: Online openings are denied because the shared-file server is open for batch requests.

E1 X'01004531'

Causing functions: CB, CO, CP, DL, ET, IS, RB, RP, ZD

Explanation: Writing to, or reading from (RB only), the first log file failed. The operation is not performed.

Action: Try the operation again. See "Critical errors" on page 321 and "Primary input/output errors" on page 322 for more information.

E2 X'01004532'

Causing functions: CB, CO, CP, DL, ET, IS, RB, RP, ZD

Explanation: Writing to, or reading from (RB only), the second log file has failed. The operation is not performed.

Action: Try the operation again. See "Critical errors" on page 321 and "Primary input/output errors" on page 322 for more information.

EP X'01004550'

Causing functions: Any

Explanation: A primary input/output (I/O) error has occurred. The error is an irrecoverable failure.

Action: See "Primary input/output errors" on page 322 for more information.

FD X'01004644'

Causing functions: Any, except GF, SR, TS

Explanation: The function was denied because a GF function was not received.

GB X'01004742'

Causing functions: FN, FP, GN, GP, HN, HP, KN, KP

Explanation: Either the end of the shared file has been reached while processing an FN, GN, HN, or KN function, or the beginning of the shared file has been reached while processing a FP, GP, HP, or KP function.

The next FN, GN, HN, or KN function returns the first record. The next FP, GP, HP, or KP function returns the last record.

GE X'01004745'

Causing functions: FU, GU, HU, KU

Explanation: The record with the specified key does not exist.

II X'01004949'

Causing functions: IS, RP

Explanation: The following could be true:

- IS function: An attempt was made to insert a duplicate of a key that must be unique. This is not allowed.
 - RP function: An attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.
-

LI X'01004C49'

Causing functions: RB

Explanation: The log file is inhibited.

Action: A rollback operation is not possible.

MI X'01004D49'

Causing functions: QP

Explanation: More information is pending.

NA X'01004E41'

Causing functions: CP, DL, ET, HN, HP, HU, IS, KN, KP, KU, RB, RP

Explanation: A transaction has not been opened.

NB X'01004E42'

Causing functions: Any, except GF, OB, OO, RF, SR, TS

Explanation: The function was denied because a batch process has not been opened.

NC X'01004E43'

Causing functions: TS

Explanation: The shared files have not been closed. A workstation ID and a process ID are in request DATA for open transactions.

Shared-file server

NO X'01004E4F'

Causing functions: BT, CP, DL, ET, FN, FP, FU, GN, GP, GU, HN, HP, HU, IP, IS, RB, RP, KN, KP, KU

Explanation: The function was denied because online mode was not initialized.

NP X'01004E50'

Causing functions: Any

Explanation: The program control block (PCB) does not exist, or the PCB is not blanks or nulls. For the QP function, the wrong PCB name was requested.

NS X'01004E53'

Causing functions: OS

Explanation: No more sessions are available.

NS X'01004E53'

Causing functions: Any

Explanation: No session has been opened with the supplied session identifier.

NT X'01004E54'

Causing functions: Any

Explanation: The workstation is not customized to use the shared-file server.

OP X'01004F50'

Causing functions: Any

Explanation: The log file is not open. The file is remote and was not accessible at server loading time, or it does not exist and you must run the genlog utility program.

Action: Start the openlog utility to retry opening the log file. See the *LANDP Servers and System Management* book for information about the utility program.

PI X'01005049'

Causing functions: GF, RF

Explanation: The parameter for a GF or RF function is not valid.

- GF function: The request DATA length must be at least X'0001' and have 'O' and 'B' in the first byte of the data area.
- RF function: The request DATA length must be X'0000' or greater than X'0000' and have 'b', 'N', or 'F' in the first byte of the data area. (b represents a space character.)

PZ X'0100505A'

Causing functions: Any

Explanation: The request or reply PARMLIST length is less than X'001A'.

RL X'0100524C'

Causing functions: HN, HP, HU, IS, KN, KP, KU, RP

Explanation: The record is locked by another workstation. For the RP function, an attempt was made to replace a record with keys that can be changed, but that must be unique. You cannot duplicate keys that must be unique.

Action: The following are recommended actions based on the reply DATA values:

Value	Action
R	Retry.
A	Rollback if you want to follow the deadlock avoidance protocol. Try again if you want to follow the deadlock detection protocol.
D	Rollback (deadlock detected).

TL X'0100544C'

Causing functions: Any

Explanation: The specified request DATA length does not match the expected length for the requested function.

TL X'0100544C'

Causing functions: FU, GU, HU, KU

Explanation: When using direct indexed access mode, this code could be returned when the request DATA length is set to 1, instead of 0.

TO X'0100544F'**Causing functions:** HL, IL**Explanation:** A transaction is open.**Action:** Close the transaction or close batch.

YA X'01005941'**Causing functions:** BT**Explanation:** A transaction is already open.

YB X'01005942'**Causing functions:** OB**Explanation:** The shared file is already open in batch mode.

YO X'0100594F'**Causing functions:** OO**Explanation:** The shared file is already open in online mode.

YP X'01005950'**Causing functions:** GF**Explanation:** The shared file is already open.

Critical errors

When a critical error occurs, as indicated by X'01004345', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:
 - X'2F'** Write-protected media.
 - X'30'** Unformatted media.
- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCIIZ string consisting of a maximum of 80 bytes. An ASCIIZ string is a normal string that ends with a null character.

When a critical error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default directory.

The file name is in the format:

HHmmsshh.TRC

where:

HH is hours.
mm is minutes.
ss is seconds.
hh is hundredths of seconds.

IBM support representatives requests the trace file *HHmmsshh*.TRC if you contact them for assistance.

Shared-file server

Primary input/output errors

When primary I/O errors occur, as indicated by X'01004550', X'01004531', or X'01004532', the following information is returned in DATA:

- A 1-byte error code, as follows:
 - X'02' No such file or directory.
 - X'05' I/O error.
 - X'06' No such device or address.
 - X'09' Bad file descriptor.
 - X'0C' Not enough space.
 - X'0D' Permission denied.
 - X'13' No such device.
 - X'14' Not a directory.
 - X'17' Too many open files in system.
 - X'18' Too many open files.
 - X'19' Inappropriate I/O control operation.
 - X'1B' File too large.
 - X'1C' No space left on device.
 - X'1D' Invalid seek.
 - X'1E' Read only file system.
 - X'2E' Device not ready.
- The 4-byte record number of the record in-process when the error occurred. If the error occurred while opening or closing a file, the value 0 is returned in this area.
- The name of the file where the error occurred. The file name is an ASCIIZ string consisting of a maximum of 80 bytes. An ASCIIZ string is a normal string that ends with a null character.

When a critical error occurs, the server creates a file that contains a trace of the internal work performed before the error occurred. The server creates the file on the default directory.

The file name is in the format:

HHmmsshh.TRC

where:

HH is hours.
mm is minutes.
ss is seconds.
hh is hundredths of seconds.

IBM support representatives need the trace file *HHmmsshh*.TRC if you contact them for assistance.

Shared-File utility programs

The following codes are returned by the shared-file BACKUP and RESTORE utility programs.

X'00' **(000)**

Explanation: The program ended successfully.

Applies to: Backup, Restore

X'01' **(001)**

Explanation: Parameters are not valid.

Applies to: Backup, Restore

X'92' **(146)**

Explanation: Old and new log files cannot be chained.

Applies to: Restore

X'96' **(150)**

Explanation: The log file does not exist.

Applies to: Backup, Restore

X'97' **(151)**

Explanation: An I/O error has occurred.

Applies to: Backup, Restore

X'98' **(152)**

Explanation: Transactions are open.

Applies to: Backup

X'A0' **(160)**

Explanation: The log file is empty.

Applies to: Backup

X'A1' **(161)**

Explanation: The log file is in use by another process.

Applies to: Backup, Restore

X'A2' **(162)**

Explanation: The old log file does not exist.

Applies to: Restore

X'A8' **(168)**

Explanation: A log file is an old version.

Action: Try running the genlog utility program to create a new log file.

Applies to: Backup, Restore

X'AD' **(173)**

Explanation: The file LOG2.DAT was not found.

Applies to: Backup, Restore

X'AE' **(174)**

Explanation: The log file LOG.DAT is not at the correct level of LOG2.DAT.

Applies to: Backup, Restore

X'AF' **(175)**

Explanation: The log file LOG2.DAT is not at the correct level of LOG.DAT.

Applies to: Backup, Restore

X'B0' **(176)**

Explanation: Log file LOG.DAT is truncated. Forward recovery cannot be performed.

Applies to: Restore

X'B1' **(177)**

Explanation: Some data might not have been updated to data files, or data in the log file is needed by a parent server.

Applies to: Backup

SNA server

The following codes are returned by the SNA server.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: RH, SH

Explanation: An LU-LU session is not established.

Programming errors

P0 X'01005030'

Causing functions: CL, GS, OP, RH, RL, SH

Explanation: No previous CN function was requested.

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: RH

Explanation: A length error was detected. The reply DATA length specified in the connectivity programming request block (CPRB) is insufficient for a message from the host. The message has been truncated to the specified length.

Action: Check the program.

P2 X'01005032'

Causing functions: SH

Explanation: A length error was detected. The request DATA length specified in the CPRB must be between X'0000' and X'1000'. See the *LANDP Programming Reference* manual for more specific information.

Action: Check the program.

P2 X'01005032'

Causing functions: CL, OP

Explanation: A length error was detected. The request DATA length specified does not correspond to that specified in the OP or CL command, or an INITSELF or TERMSELF was specified and was not valid.

Action: Check the program.

P2 X'01005032'

Causing functions: CN, GS, RL

Explanation: A length error was detected. The request and reply DATA lengths specified in the CPRB must be X'0000'.

Action: Change the program.

P3 X'01005033'

Causing functions: RH

Explanation: There are no pending messages.

P3 X'01005033'

Causing functions: SH

Explanation: Internal resources are temporarily unavailable. The SNA server acts appropriately.

Action: The application program should wait and retry.

P4 X'01005034'

Causing functions: CL, OP, SH

Explanation: A message pending in the input queue requires a response.

Action: Make sure the program contains logic to read the message, and then try again. The required response is automatically sent when the message is read.

P4 X'01005034'

Causing functions: RH

Explanation: There is a previous message read with flag5=R that requires a response or a response is required at end of chain if CN flag5 was M.

P5 X'01005035'

Causing functions: OP

Explanation: An OP function is in progress.

Action: Check the program.

P5 X'01005035'

Causing functions: RL

Explanation: An RL function is in progress but the LU is not yet inactive.

P6 X'01005036'

Causing functions: CL, OP, SH

Explanation: A message sent was accepted and indicates that the input buffer contains messages to be read.

Action: Check the program. All messages should be read before sending new messages.

P7 X'01005037'

Causing functions: SH

Explanation: A logic application error has occurred. The server detected an inconsistency between the function issued and the internal session status.

Action: Check the program. Common situations are:

- Trying to send a response, but no response is pending
 - Response pending to be sent
 - A message is being received
 - Chaining protocol error
 - Bracket protocol error
 - Change direction protocol error
 - A contention situation exists
 - RTR (Ready to Receive) must be sent between brackets
-

P8 X'01005038'

Causing functions: CL

Explanation: A session is not established. The CL function was rejected.

P8 X'01005038'

Causing functions: CN

Explanation: The LU was previously contacted, or an RL function is in progress.

P9 X'01005039'

Causing functions: Any

Explanation: The command was rejected. A session identifier or workstation identifier in the CPRB do not match the SNA configuration file. The POSTSNA.CFG and LAN.CFG files do not agree.

PA X'01005041'

Causing functions: SH

Explanation: A host message or response is pending to be received.

SNA server

PB X'01005042'

Causing functions: CL, SH

Explanation: A station is set to quiesce status.

Action: Wait for a host message to change the status.

PZ X'0100505A'

Causing functions: Any

Explanation: A PARMLIST length is not valid.

Action: The length must be X'001A'.

Device errors

U1 X'01005531'

Causing functions: CL, OP, RH, SH

Explanation: Contact is pending.

Action: Check the host status and equipment.

U2 X'01005532'

Causing functions: CN

Explanation: A connection failure has occurred.

Action: Wait and try again.

U8 X'01005538'

Causing functions: CN

Explanation: SNA/6000 is not loaded or there is a communication problem (link not started).

U9 X'01005539'

Causing functions: CL, GS, OP, RH, RL, SH

Explanation: A RISC/6000 system error has occurred.

Action: Check the log file.

Supervisor local functions

The following codes are returned by the supervisor local functions.

Successful operation

X'00000000'

Causing functions: Any

Explanation: Successful operation.

Action: None required.

Intervention required

I1 X'01004931'

Causing functions: Z5

Explanation: The queue for asynchronous messages is full.

Action: Try again later.

I2 X'01004932'

Causing functions: SP

Explanation: The system cannot start a new process.

Action: Try again later.

I3 X'01004933'

Causing functions: SP

Explanation: The system cannot create a message queue.

Programming errors

P1 X'01005031'

Causing functions:

Explanation: The function is not supported.

Action: Check the request format and parameters.

P2 X'01005032'

Causing functions: TN

Explanation: The time interval is not correct.

P2 X'01005032'

Causing functions: AA, QE

Explanation: The reply DATA length is not correct.

P2 X'01005032'

Causing functions: AA, QE, SP, TN, TP, WM

Explanation: The request DATA length is not correct.

P2 X'01005032'

Causing functions: WM

Explanation: An interval in the PARMLIST area is not correct.

P3 X'01005033'

Causing functions: TN

Explanation: The timer is already on the desired status.

P3 X'01005033'

Causing functions: WM

Explanation: An interval is not correct.

P3 X'01005033'

Causing functions: AA

Explanation: The reply DATA area is insufficient.

P3 X'01005033'

Causing functions: QE, SP, TP

Explanation: The request PARMLIST length is not correct.

P4 X'01005034'

Causing functions: QE, TP

Explanation: A window handle or message type is not valid.

Supervisor local functions

P5 X'01005035'

Causing functions: SP

Explanation: The event list has become too long.

P7 X'01005037'

Causing functions: QE

Explanation: An event handle is not valid.

P9 X'01005039'

Causing functions: SP

Explanation: There are too many requests.

Chapter 12. LANDP family messages

Some LANDP family components display messages in addition to, or instead of, generating return codes. For example, they display or report messages in the following situations:

- In response to an unexpected event
- When something undesirable could occur
- To convey information about an operation

This chapter contains a list of LANDP product messages.

LANDP loading messages

The following messages are displayed or reported when loading LANDP family components.

EHCVAL utility program

EHC0121E FBSSPATH.DAT file is not correct.

Action: Run customization again.

EHC0122E Server name in FBSSPATH.DAT is not in a valid list.

Action: Run customization again.

EHC0123I The path *pathname* does not exist.
Do you want to create it? (Yes=1 / No=2)

Action: Answer 1 to create the path, or correct the path name.

EHC0125W The *filename* does not exist.

Action: Run customization again or correct the file name.

EHC0126W *Filename* file already exists in *directoryname*.
Do you want to update it? (Yes=1 / No=2)

Action: Answer 1 to update the file.

EHC0130I Checking files and sub-directories.
Please wait.

Action: None required.

EHC0131I Process completed successfully.

Action: None required.

EHC0132E Error trying to read FBSSPATH.DAT file.

Action: Try again. If the error persists, check the hardware.

EHC0134E Error trying to create path.

Action: Make sure the disk on which you are trying to create the path is not write-protected. If the error persists, check the hardware.

EHC0137E Error trying to copy files.

Action: Make sure the disk on which you are trying to copy the files is not write-protected. If the error persists, check the hardware.

EHC0138E Error trying to delete files.

Action: Make sure the disk on which you are trying to delete the files is not write-protected. If the error persists, check the hardware.

LANDP loading messages

**EHC0141E Syntax error in FBSSPATH.DAT file.
Drive not alphabetic.**

Action: Run customization again.

**EHC0142E Syntax error in FBSSPATH.DAT file.
Missing :**

Action: Run customization again.

**EHC0143E Syntax error in FBSSPATH.DAT file.
Missing **

Action: Run customization again.

**EHC0144E Syntax error in FBSSPATH.DAT file.
Character not allowed.**

Action: Run customization again.

**EHC0145E Syntax error in FBSSPATH.DAT file.
Too many path levels.**

Action: Run customization again.

EHC0151E Hardware error.

Action: Check the hardware.

EHC0154E Drive not ready.

Action: Check the hardware.

EHC0155E Invalid drive.

Action: Make sure you specified a valid drive letter. If the drive letter is correct, check the hardware.

EHC0159E Invalid file or path name.

Action: Correct the file or path name, or run customization again.

EHC0160E File validation error.

Action: One of the files to be validated is damaged. Re-create the file.

LANDP for DOS messages

The following messages are displayed or reported by LANDP for DOS.

File transfer facility and 3270 send/receive facility

The following messages are reported by the SEND and RECEIVE programs of the LANDP for DOS file transfer facility and 3270 send/receive facility. Messages 26 through 43 are reported only by the 3270 send/receive facility.

Note: If the SEND and RECEIVE programs are running and an error occurs, the error code returned coincides with the number of the last message produced.

0001

Explanation: A host computer file specification was not entered in the command line.

Action: Re-enter the command with a valid host computer file specification.

0002

Explanation: The host computer file name or the data set name specified in the command line has a length that is not valid or contains a character that is not valid.

Action: Re-enter the command with a valid host computer file name or data set name.

0003

Explanation: The host computer file type specified in the command line has a length that is not valid or contains a character that is not valid.

Action: Re-enter the command with a valid host computer file type.

0004

Explanation: The host computer file mode specified in the command line has a length that is not valid or contains a character that is not valid.

Action: Re-enter the command with a valid host computer file mode.

0005

Explanation: A workstation file specification was not entered in the command line.

Action: Re-enter the command with a valid workstation file specification.

0006

Explanation: The workstation drive specified in the command line does not exist or contains a character that is not valid.

Action: Re-enter the command with a valid workstation drive specification.

0007

Explanation: The workstation file specified in the SEND command does not exist in the current directory on the specified drive.

Action: Re-enter the command with the correct workstation file specification.

0008

Explanation: The workstation path specified in the command line does not exist on the specified drive.

Action: Re-enter the command with the correct workstation path specification.

0009

Explanation: The workstation file could not be created or opened.

Action: Check the workstation diskette, the workstation disk or diskette drive, and the workstation file attributes.

LANDP for DOS messages

0010

Explanation: An invalid option was entered in the command line or in the DOS command processor environment.

Action: Try the following:

- Re-enter the command with a valid option.
- Check the options in the environment with the DOS SET command.

0011

Explanation: Mutually exclusive options were entered in the command line and in the DOS command processor environment.

Action: Try the following:

- Re-enter the command with valid options.
- Check the options in the environment with the DOS SET command.

0012

Explanation: The workstation was unable to send the command to the host computer.

Action: Check the workstation-to-host computer connection.

0013

Explanation: The workstation was unable to establish a connection with the host computer.

Action: Check the workstation-to-host computer physical connection. The emulator short name parameter does not match the loaded emulator.

0014

Explanation: The workstation timed out while expecting data from the host computer, or an error occurred while receiving data.

0015

Explanation: The workstation timed out while expecting an acknowledgement from the host computer, or an error notification was received from the host computer.

0016

Explanation: The workstation disk or diskette is full.

Action: Make workstation disk or diskette space available.

0017

Explanation: The LANDP for DOS 3270 emulator is not present on the workstation.

Action: Rerun LANDP configuration and define the LANDP for DOS 3270 emulator as a required option.

0018

Explanation: A file with zero data length was received.

Action: Check the host computer file.

0019

Explanation: The workstation is transmitting data to the host computer.

Action: Information only.

0020

Explanation: The workstation is receiving data from the host computer or from the 4700 processor.

Action: Information only.

0021

Explanation: The workstation is transmitting the file transfer command to the 4700 processor.

Action: Information only.

0022

Explanation: The workstation is transmitting the file transfer command to the host computer.

Action: Information only.

0023

Explanation: The file has been transferred successfully.

Action: Information only.

0024

Explanation: An invalid parameter was found in the command line.

Action: Re-enter the command with valid parameters.

0025

Explanation: An error has occurred at the host computer.

Action: Check the error message on the host computer session screen.

0026

Explanation: Time-out expired while waiting for a host response.

Action: Check the workstation-to-host connection or the error message displayed on the host computer session screen.

0027

Explanation: The arrival sequence from the host is not allowed.

Action: Check the workstation-to-host connection or the error message displayed on the host computer session screen.

0028

Explanation: An unexpected message was received from the host. The message is displayed on the screen, as follows.

0029

Explanation: The specified time out is not correct.

Action: Enter a valid time-out value.

0030

Explanation: An internal processing error has occurred.

Action: Contact IBM to obtain service.

0031

Explanation: The ASCII option is not supported when SEND or RECEIVE is running in a VDM under a DBCS version of OS/2.

Action: If possible, use a DOS system to transfer the file. Alternatively, omit the ASCII option to transfer the file in binary format.

0032

Explanation: The file being transferred contains invalid DBCS data and cannot be translated.

Action: Correct the input file and re-enter the command.

0033

Explanation: The ASCII—EBCDIC translate server (EHADBTR) was not defined to LANDP.

Action: Reconfigure your LANDP system to include the EHADBTR server.

0034

Explanation: The ASCII—EBCDIC translate server (EHADBTR) was not loaded.

Action: Ensure the EHADBTR server is loaded.

0035

Explanation: The ASCII—EBCDIC translate server (EHADBTR) detected an abnormal condition.

Action: The EHADBTR return codes are documented in Chapter 8, “LANDP for DOS return codes” on page 115. If you cannot determine the cause of the error, contact IBM for support.

0036

Explanation: An internal processing error occurred during the Set DDM buffer function.

Action: Contact IBM to obtain service.

0037

Explanation: An internal processing error occurred during the Release DDM buffer function.

Action: Contact IBM to obtain service.

LANDP for DOS messages

0038

Explanation: An internal processing error occurred during the Write DDM buffer function.

Action: Contact IBM to obtain service.

0039

Explanation: An internal processing error occurred during the Connect function.

Action: Contact IBM to obtain service.

0040

Explanation: An internal processing error occurred during the Disconnect function.

Action: Contact IBM to obtain service.

0041

Explanation: Time-out expired during the indicated DDM function.

Action: Check the workstation-to-host connection and the error message displayed on the host computer session screen. If you cannot determine the cause of the error, contact IBM for support.

0042

Explanation: An invalid sequence arrived from the host during the indicated DDM function.

Action: Check the workstation-to-host connection and the error message displayed on the host computer session screen. If you cannot determine the cause of the error, contact IBM for support.

0043

Explanation: An unexpected message arrived from the host during the indicated DDM function.

Action: Check the workstation-to-host connection and the error message displayed on the host computer session screen. If you cannot determine the cause of the error, contact IBM for support.

Note: For messages 0041—0043, the indicated DDM function will be one of the following:

- Open For Download
- Open For Upload
- Open For Messages
- Insert
- Data To Insert

- Set Cursor
- Get
- Close
- Error

High-Level language application program interface

The following messages are displayed by the high-level language application program interface (HLLAPI) of the IBM LANDP 3270 emulator.

FHL000 LANDP High-Level Language API

This message is followed by the copyright notice.

FHL001 FBHLLAPI is installed and ready to use

Explanation: The program has been successfully loaded and is available for use.

FHL003 FBHLLAPI is already loaded

Explanation: The FBHLLAPI command is entered, but LANDP HLLAPI is already loaded and available.

FHL004 Unable to load FBHLLAPI

Explanation: An error occurred while trying to load the program. The program is not available.

FHL005 Incorrect 3270 emulator loaded

Explanation: The 3270 emulator is required. The correct emulator is not present.

FHL006 Incorrect level of the LANDP 3270 emulator

Explanation: LANDP HLLAPI requires the 3270 emulator. The correct emulator is not available for use.

FHL007 LANDP 3270 emulator is not loaded

Explanation: LANDP HLLAPI requires that the 3270 emulator is loaded, but it is not loaded.

FHL009 System error *nnnn*

Explanation: An error was found while trying to load LANDP HLLAPI. *nnnn* is a four-digit diagnostic code.

FHL012 FBHLLAPI removed from memory

Explanation: The operator specified */u* on the command line. LANDP HLLAPI is removed.

FHL013 FBHLLAPI turned off, but not removed

Explanation: The operator specified */u* on the command line. LANDP HLLAPI has stopped processing, but memory is not released.

FHL014 FBHLLAPI is not loaded

Explanation: The operator specified */u* on the command line. LANDP HLLAPI is not installed.

FHL030 FBHLLAPI Trace. Request: *nn*

Explanation: TRON (trace on) specified with the Set Session Parameters function or the operator specified */t* in the command line. This message is displayed each time a function is invoked.

nn contains the function number in hexadecimal. The trace messages may conflict with application program messages.

FHL031 FBHLLAPI Trace. Return code: *nnnn*

Explanation: This message is displayed after FHL030. *nnnn* contains the return code in hexadecimal. The trace messages may conflict with application program messages.

LANDP for OS/2 messages

The following messages are displayed or reported by LANDP for OS/2.

Batch machine facility, object post box server, and MAIL program

The batch machine facility and object post box server (OPBS) display the following messages when abnormal situations occur.

Notes:

1. "Object post box server" on page 203 lists return codes issued by this server in the LANDP for OS/2 environment.
2. Chapter 7, "Loading return codes" on page 87 lists codes generated by this server during the loading process.

MAIL/OPBS server not initialized

Explanation: The OPBS is waiting for the SHFILE## or SMGR servers to start running.

Action: Check the shared-file and system manager servers initialization.

Unexpected server RC : xx , function yy to server jjjjjjj

Explanation: An unexpected response came from the specified server.

Invalid LANDP user ID

Explanation: The supplied user ID is not a valid SMGR user ID.

Unknown user ID to the OPBS

Explanation: The OPBS does not accept the 'given user' as a 'destination user' because the given user never issued a request to the OPBS.

The LOG-ON command from the MAIL program does not generate an OPBS access, but issues 'sign-on' to the SMGR.

Server busy. Retry later.

Explanation: The OPBS does not have an available SHFILE## session to process the request.

File on hold. Retry later.

Explanation: The requested message is still being updated (sent or received).

Action: No further work can be done on it until the operation in process ends.

REXX application programming support

The dynamic link library EHCREXX.DLL, which provides support for REXX application development, provides the following messages in the REXX variable *result* when abnormal situations occur.

EHCREXX: Incorrect number of arguments

Explanation: A LANDP function has been called with the wrong number of arguments.

User Response: Check the number of arguments that are appropriate for the LANDP function.

EHCREXX: Stem variable name too long

Explanation: A LANDP function has been called with a user-defined variable name of more than 32 characters.

User Response: Restrict user-defined variable names to 32 characters or fewer.

EHCREXX: Unable to obtain memory

Explanation: The LANDP REXX interface could not get sufficient memory from the operating system.

User Response: Contact your Service representative if the problem persists.

EHCREXX: Unable to locate original CPRB

Explanation: A RMTRPLY cannot be completed because the original CPRB has been lost.

User Response: Contact your Service representative if the problem persists.

In addition, the following messages are displayed when abnormal situations occur.

EHXREXX: Error n registering <f>

Explanation: The LANDP function *f* could not be registered with REXX.

User Response: Contact your Service representative if the problem persists.

EHXREXX: Error n de-registering <f>

Explanation: The LANDP function *f* could not be de-registered from REXX.

User Response: Contact your Service representative if the problem persists.

Chapter 13. LANDP for DOS alerts

This chapter lists alerts defined for LANDP for DOS programs, servers, or operations. The listings contain the following information:

- Alert ID number (32 bits)
- Problem severity indicator and problem description
- List of probable causes, including any user causes, install causes, or failure causes
- List of recommended actions for the operator
- Additional subvectors (SVs) with subfields (SFs) to be included in the alert

This is a partial list. Required subvectors are not listed.

“Alerts” on page 7 briefly introduces alerts and LANDP alert functions management. The alert listings in this chapter are for users who are familiar with NetView programs and SNA networks. Refer to the books *LANDP Servers and System Management* and the *SNA Formats* book for additional information. See “Bibliography” on page 423 for full titles and order numbers.

Electronic journal server

The following alert occurs when, during initialization, the electronic journal server cannot call the shared-file server successfully.

EJ1—Unsuccessful call to shared-file server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'C5D3C5C3D1D67B7B' (ELECJO## in EBCDIC) Type = X'19' (Program Product)

Financial printer server

The following alert occurs when a device used by the financial printer server reports an irrecoverable hardware error.

PS1—Hardware error

Alert ID number		X'030C2A29'
Alert type	X'01'	Permanent
Alert description	X'1201'	Printer error
Probable causes	X'6210'	Printer
User causes	(none)	
Install causes	(none)	
Failure causes	X'6210'	Printer
Actions	X'0300' X'3000' X'1806'	Check for damage Contact service representative Replace printer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7D9F4F7E7F27B7B' (PR47X2## in EBCDIC) Type = X'13' (Printer)

Forwarding server

Forwarding server

The following alert occurs when, during initialization, the forwarding server cannot call the store-for-forwarding server successfully.

FF1—Unsuccessful call to store-for-forwarding server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'C6D6D9E6C1D9C440' (FORWARD in EBCDIC) Type = X'19' (Program Product)

LANDP 3270 emulator

The following alert occurs when the data stream received from the host contains data that is not valid.

EM1—Data stream error

Alert ID number		X'6AA3491A'
Alert type	X'01'	Permanent
Alert description	X'2100'	Software error
Probable causes	X'1010'	Host program
User causes	(none)	
Install causes	(none)	
Failure causes	X'1010'	Host program
Actions	X'3110'	Contact the communication system programmer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation)

MSR/E server

Magnetic stripe reader/encoder (MSR/E) server

The following alerts occur when errors are reported by devices used by the magnetic stripe reader/encoder (MSR/E) server.

MSR1—Hardware error

This alert occurs when an MSR/E device reports an irrecoverable hardware error.

Alert ID number		X'D365D39D'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6114'	Magnetic stripe reader
User causes	(none)	
Install causes	(none)	
Failure causes	X'6114'	Magnetic stripe reader
Actions	X'0300' X'3000' X'1808'	Check for damage Contact service representative Replace MSR or MSR/E
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D4E2D9C5F4F77B7B' (MSRE47## in EBCDIC) Type = X'00' (Unspecified Device)

MSR2—Device not connected

This alert occurs when an MSR/E device is not installed properly.

Alert ID number		X'F3F95A9C'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6114'	Magnetic stripe reader
User causes	(none)	
Install causes	X'3451'	Device cable installed incorrectly
Actions	X'1500'	Correct installation problem
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D4E2D9C5F4F77B7B' (MSRE47## in EBCDIC) Type = X'00' (Unspecified Device)

PIN pad server

Personal identification number (PIN) pad server

The following alerts occur when errors are reported by devices used by the personal identification number (PIN) pad server report errors.

PIN1—Hardware error

This alert occurs when a PIN key pad device reports an irrecoverable hardware error.

Alert ID number		X'F3E19DD1'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6111'	Key pad
User causes	(none)	
Install causes	(none)	
Failure causes	X'6111'	Key pad
Actions	X'0300' X'3000' X'1800'	Check for damage Contact service representative Replace defective equipment
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7C9D5D7F4F77B7B' (PINP47## in EBCDIC) Type = X'29' (Keyboard)

PIN2—Device not connected

This alert occurs when a PIN key pad device is not installed properly.

Alert ID number		X'C4B87FBB'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6111'	Key pad
User causes	(none)	
Install causes	X'3451'	Device cable installed incorrectly
Actions	X'1500'	Correct installation problem
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7C9D5D7F4F77B7B' (PINP47## in EBCDIC) Type = X'29' (Keyboard)

Remote change management services (RCMS)

The following alert occurs when a hard disk used by RCMS reports an irrecoverable I/O error.

RC1—File operation error

Alert ID number		X'FAC0FE4C'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'6310'	DASD device
User causes	(none)	
Install causes	(none)	
Failure causes	X'6310'	Disk drive
Actions	X'F006' X'F0D0' X'82' SF	Reoccurrence of same error suggests media failure. Failing component location (Unit)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D9C3D4E2' (RCMS in EBCDIC) Type = X'19' (Program Product)

SNA server

The following alerts result from errors detected by the SNA server.

SN1—SNA protocol error

The SNA server detects this error in the following situations:

- Bracket error
- Chaining error
- Segmentation error
- Sequence number not valid
- Receiver in transmit mode
- Resource unknown or not valid

Alert ID number		X'0DB0DB49'
Alert type	X'01'	Permanent
Alert description	X'3100'	SNA protocol error
Probable causes	X'1022' X'1023'	Communication program Communication program in remote node
User causes	(none)	
Install causes	X'1501'	Incorrect customization parameters
Actions	X'1502'	Correct customization parameters
Failure causes	X'1022' X'1023'	Communication program Communication program in remote node
Actions	X'3110' X'32A0' X'82' SF	Contact communication system programmer. Report the following (Sense code)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2D5C17B7B4040' (SNA## in EBCDIC) ¹ Type = X'80' (Controller)
¹ ## is updated with the session ID.		

Shared DOS directory server

Shared DOS directory server

The following alerts occur when disks used by the shared DOS directory server report errors.

SH1—Error by disk read or write

This alert occurs when the hard disk used by shared directory support reports an irrecoverable I/O error.

Alert ID number		X'FAC0FE4C'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'6310'	DASD device
User causes	(none)	
Install causes	(none)	
Failure causes	X'6310'	Disk drive
Actions	X'F006' X'F0D0' X'82' SF	Reoccurrence of same error suggests media failure. Failing component location (Unit)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8D9C4C9D94040' (SHRDIR in EBCDIC) Type = X'11' (Disk)

SH2—File full

This alert occurs when a hard disk used by shared directory support is full.

Alert ID number		X'FEBF883E'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'5001'	DASD media
User causes	X'7300'	File full
Actions	X'32A0' X'82' SF	Report the following (Unit)
Install causes	(none)	
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8D9C4C9D94040' (SHRDIR in EBCDIC) Type = X'11' (Disk)

Shared-file server

Shared-File server

The following alerts occur when the shared-file server detects errors.

SF1—Error by disk read

This alert occurs when a hard disk reports an irrecoverable I/O error.

Alert ID number		X'FAC0FE4C'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'6310'	DASD device
User causes	(none)	
Install causes	(none)	
Failure causes	X'6310'	Disk drive
Actions	X'F006' X'F0D0' X'82' SF	Reoccurrence of same error suggests media failure. Failing component location (Unit)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8C6C9D3C57B7B' (SHFILE## in EBCDIC) Type = X'11' (Disk)

SF2—File full

This alert occurs when a disk used by the shared-file server is full.

Alert ID number		X'FEBF883E'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'5001'	DASD media
User causes	X'7300'	File full
Actions	X'32A0' X'82' SF	Report the following (Unit)
Install causes	(none)	
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8C6C9D3C57B7B' (SHFILE## in EBCDIC) Type = X'11' (Disk)

SFF server

Store-for-forwarding server

The following alert occurs when, during initialization, the store-for-forwarding server cannot call the shared-file server successfully.

SFF1—Unsuccessful call to shared-file server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C6D6D9C6D6D9E6' (SFORFORW in EBCDIC) Type = X'19' (Program Product)

Synchronous data link control (SDLC)

The following alerts result from errors detected by synchronous data link control (SDLC).

S1—Unexpected SNRM command received

This alert occurs when, during the normal flow of traffic, a set normal response mode (SNRM) command is received.

Alert ID number		X'5E500C5'
Alert type	X'01'	Permanent
Alert description	X'3300'	Link error
Probable causes	X'2104'	SDLC communication or remote node
User causes	(none)	
Install causes	(none)	
Failure causes	X'2104' X'F015'	SDLC communication or remote node SNRM received while in NRM
Actions	X'3302' X'3110'	If the problem occurs repeatedly contact a communication system programmer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'80' (Controller) Fourth resource below sender Name = X'E2C4D3C3404040' (SDLC in EBCDIC) Type = X'82' (Communication Controller)

S2—Invalid or unsupported frame received

This alert occurs when, during the normal flow of traffic, a frame that is not valid or not supported is received.

Alert ID number		X'9DA7063E'
Alert type	X'01'	Permanent
Alert description	X'3300'	Link error
Probable causes	X'2104'	SDLC communication or remote node
User causes	(none)	
Install causes	(none)	
Failure causes	X'2104' X'F020'	SDLC communication or remote node not valid, or unsupported command or response received
Actions	X'3302' X'3110'	If the problem occurs repeatedly contact a communication system programmer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'80' (Controller) Fourth resource below sender Name = X'E2C4D3C3404040' (SDLC in EBCDIC) Type = X'82' (Communication Controller)

S3—Frame exceeding allowable length received

This alert occurs when, during the normal flow of traffic, a frame which is too long is received.

Alert ID number		X'90E420E7'
Alert type	X'01'	Permanent
Alert description	X'3300'	Link error
Probable causes	X'2104'	SDLC communication or remote node
User causes	(none)	
Install causes	(none)	
Failure causes	X'2104' X'F023'	SDLC communication or remote node Received I-Field exceeded maximum length
Actions	X'3302' X'3110'	If the problem occurs repeatedly contact a communication system programmer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'80' (Controller) Fourth resource below sender Name = X'E2C4D3C3404040' (SDLC in EBCDIC) Type = X'82' (Communication Controller)

S4—Timer expired without receiving polling

The following alert occurs when, during the normal flow of traffic, the timer that controls the polling expires without receiving a poll.

Alert ID number		X'0E2DDF11'
Alert type	X'01'	Permanent
Alert description	X'3300'	Link error
Probable causes	X'2104' X'2031'	SDLC communication or remote node Line
User causes	X'0209'	Remote device power off
Actions	X'0200'	Check power
Install causes	(none)	
Failure causes	X'2104' X'3511'	SDLC communication or remote node Line
Actions	X'2010' X'3110'	Review link configuration detail data Contact a communication system programmer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'80' (Controller) Fourth resource below sender Name = X'E2C4D3C340404040' (SDLC in EBCDIC) Type = X'82' (Communication Controller)

S5—Modem power off

The following alert occurs when the remote modem is powered off.

Alert ID number		X'C9793D22'
Alert type	X'01'	Permanent
Alert description	X'3300'	Link error
Probable causes	X'2004' X'3601'	SDLC communication Local modem
User causes	X'0213'	Modem power off
Actions	X'0200'	Check power
Install causes	X'1202' X'3400'	Local modem Cable installed incorrectly
Failure causes	X'2004' X'3601' X'F035'	SDLC communication Local modem DSR dropped
Actions	X'0003' X'0301' X'0403'	Determine the reason for line shutdown Check cable and its connections Run modem tests
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'80' (Controller) Fourth resource below sender Name = X'E2C4D3C3404040' (SDLC in EBCDIC) Type = X'82' (Communication Controller)

X.25 DLC

X.25 data link control (DLC)

The following alerts result from errors detected by X.25 data link control (DLC).

X1—Invalid or unsupported command received

This alert occurs when a received Q-frame is unexpected, unordered, invalid, or unsupported.

Alert ID number		X'11A865CF'
Alert type	X'01'	Permanent
Alert description	X'3320'	X.25 error
Probable causes	X'2052'	Logical link control
User causes	(none)	
Install causes	(none)	
Failure causes	X'2006' X'F020'	X.25 communication error Invalid or unsupported command or response received
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF	If the problem occurs repeatedly contact X.25 network information service Report the following: (DTE address called) (DTE address calling) (Local DTE address)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E7F2F5C4D3C34040' (X25DLC in EBCDIC) Type = X'82' (Communication Controller)

X2—DCE-Originated clear indication received

This alert occurs when the DTE receives a CLEAR_INDICATION packet containing a DCE-originated cause code and a diagnostic code.

Alert ID number		X'D484ED27'
Alert type	X'01'	Permanent
Alert description	X'3320'	X.25 error
Probable causes	X'2050' X'2008' X'2006' X'2200'	Packet layer control X.25 communication X.25 network Remote node
User causes	(none)	
Install causes	(none)	
Failure causes	X'20C1' X'82' SF X'82' SF X'2006' X'2200'	X.25 communication error - The following indication packet was received (Packet type and cause code) (Diagnostic code) X.25 communication error Remote node
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'3123'	If the problem occurs repeatedly contact X.25 network information service Report the following (DTE address called) (DTE address calling) (Local DTE address) Contact remote DTE's operator
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E7F2F5C4D3C34040' (X25DLC in EBCDIC) Type = X'82' (Communication Controller)

X3—Reset indication packet sent by the DTE

This alert occurs when, because of an abnormal situation, the X25DLC server resets a virtual circuit and some information is lost in the DTE.

Alert ID number		X'6A837F72'
Alert type	X'02'	Temporary
Alert description	X'3320'	X.25 error
Probable causes	X'2050' X'2008' X'2200' X'2006'	Packet layer control X.25 communication Remote node X.25 network
User causes	(none)	
Install causes	(none)	
Failure causes	X'20C2' X'82' SF X'82' SF X'2200' X'2006'	X.25 communication error - DTE sent the following request packet to the network (Packet type and cause code) (Diagnostic code) Remote node X.25 communication error
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF X'3123'	If the problem occurs repeatedly contact X.25 network information service Report the following (DTE address called) (DTE address calling) (Local DTE address) Contact remote DTE's operator
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E7F2F5C4D3C34040' (X25DLC in EBCDIC) Type = X'82' (Communication Controller)

X4—Clear request packet sent by the DTE

This alert occurs when the DTE sends a CLEAR_REQUEST packet containing a DTE-originated cause code and a diagnostic code.

Alert ID number		X'056A9521'
Alert type	X'01'	Temporary
Alert description	X'3320'	X.25 error
Probable causes	X'2050' X'2008'	Packet layer control X.25 communication
User causes	(none)	
Install causes	(none)	
Failure causes	X'20C2' X'82' SF X'82' SF	X.25 communication error - The DTE sent the following request packet: (Packet type and cause code) (Diagnostic code)
Actions	X'3302' X'3107' X'32D0' X'82' SF X'82' SF X'82' SF	If the problem occurs repeatedly contact X.25 network information service Report the following (DTE address called) (DTE address calling) (Local DTE address)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E7F2F5C4D3C34040' (X25DLC in EBCDIC) Type = X'82' (Communication Controller)

Chapter 14. LANDP for OS/2 alerts

This chapter lists alerts defined for LANDP for OS/2 programs, servers, or operations. The listings contain the following information:

- Alert ID number (32 bits)
- Problem severity indicator and problem description
- List of probable causes, including any user causes, install causes, or failure causes
- List of recommended actions for the operator
- Additional subvectors (SVs) with subfields (SFs) to be included in the alert

This is a partial list. Required subvectors are not listed.

“Alerts” on page 7 briefly introduces alerts and LANDP alert functions management. The alert listings in this chapter are for users who are familiar with NetView programs and SNA networks. Refer to the books *LANDP Servers and System Management* and *SNA Formats* for additional information. See “Bibliography” on page 423 for full titles and order numbers.

Electronic journal server

The following alert occurs when, during initialization, the electronic journal server cannot call the shared-file server successfully.

EJ1—Unsuccessful call to shared-file server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'C5D3C5C3D1D67B7B' (ELECJO## in EBCDIC) Type = X'19' (Program Product)

Financial printer server

The following alert occurs when a device used by the financial printer server reports an irrecoverable hardware error.

PS1—Hardware error

Alert ID number		X'030C2A29'
Alert type	X'01'	Permanent
Alert description	X'1201'	Printer error
Probable causes	X'6210'	Printer
User causes	(none)	
Install causes	(none)	
Failure causes	X'6210'	Printer
Actions	X'0300' X'3000' X'1806'	Check for damage Contact appropriate service representative Replace printer
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7D9F4F7E7F27B7B' (PR47X2## in EBCDIC) Type = X'13' (Printer)

Forwarding server

Forwarding server

The following alert occurs when, during initialization, the forwarding server cannot call the store-for-forwarding server successfully.

FF1—Unsuccessful call to store-for-forwarding server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'C6D6D9E6C1D9C440' (FORWARD in EBCDIC) Type = X'19' (Program Product)

Magnetic stripe reader/encoder (MSR/E) server

The following alerts occur when devices used by the magnetic stripe reader/encoder (MSR/E) server report errors.

MSR1—Hardware error

This alert occurs when an MSR/E device reports an irrecoverable hardware error.

Alert ID number		X'D365D39D'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6114'	Magnetic stripe reader
User causes	(none)	
Install causes	(none)	
Failure causes	X'6114'	Magnetic stripe reader
Actions	X'0300' X'3000' X'1808'	Check for damage Contact appropriate service representative Replace MSR or MSR/E
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D4E2D9C5F4F77B7B' (MSRE47## in EBCDIC) Type = X'00' (Unspecified Device)

MSR/E server

MSR2—Device not connected

This alert occurs when an MSR/E device is not installed properly.

Alert ID number		X'F3F95A9C'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6114'	Magnetic stripe reader
User causes	(none)	
Install causes	X'3451'	Device cable installed incorrectly
Actions	X'1500'	Correct installation problem
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D4E2D9C5F4F77B7B' (MSRE47## in EBCDIC) Type = X'00' (Unspecified Device)

Personal identification number (PIN) pad server

The following alerts occur when devices used by the personal identification number (PIN) pad server report errors.

PIN1—Hardware error

This alert occurs when a PIN key pad device reports an irrecoverable hardware error.

Alert ID number		X'F3E19DD1'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6111'	Key pad
User causes	(none)	
Install causes	(none)	
Failure causes	X'6111'	Key pad
Actions	X'0300' X'3000' X'1800'	Check for damage Contact appropriate service representative Replace defective equipment
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7C9D5D7F4F77B7B' (PINP47## in EBCDIC) Type = X'29' (Keyboard)

PIN pad server

PIN2—Device not connected

This alert occurs when a PIN key pad device is not installed properly.

Alert ID number		X'C4B87FBB'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6111'	Key pad
User causes	(none)	
Install causes	X'3451'	Device cable installed incorrectly
Actions	X'1500'	Correct installation problem
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7C9D5D7F4F77B7B' (PINP47## in EBCDIC) Type = X'29' (Keyboard)

Shared-File server

The following alerts occur when the shared-file server detects errors.

SF1—Error by disk read

This alert occurs when a hard disk reports an irrecoverable I/O error.

Alert ID number		X'FAC0FE4C'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'6310'	DASD device
User causes	(none)	
Install causes	(none)	
Failure causes	X'6310'	Disk drive
Actions	X'F006' X'F0D0' X'82' SF	Reoccurrence of same error suggests media failure. Failing component location (Unit)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8C6C9D3C57B7B' (SHFILE## in EBCDIC) Type = X'11' (Disk)

Shared-file server

SF2—File full

This alert occurs when a disk used by the shared-file server is full.

Alert ID number		X'FEBF883E'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'5001'	DASD media
User causes	X'7300'	File full
Actions	X'32A0' X'82' SF	Report the following (Unit)
Install causes	(none)	
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8C6C9D3C57B7B' (SHFILE## in EBCDIC) Type = X'11' (Disk)

Store-for-forwarding server

The following alert occurs when, during initialization, the store-for-forwarding server cannot call the shared-file server successfully.

SFF1—Unsuccessful call to shared-file server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C6D6D9C6D6D9E6' (SFORFORW in EBCDIC) Type = X'19' (Program Product)

Chapter 15. LANDP for Windows NT alerts

This chapter lists alerts defined for LANDP for Windows NT programs, servers, or operations. The listings contain the following information:

- Alert ID number (32 bits)
- Problem severity indicator and problem description
- List of probable causes, including any user causes, install causes, or failure causes
- List of recommended actions for the operator
- Additional subvectors (SVs) with subfields (SFs) to be included in the alert

This is a partial list. Required subvectors are not listed.

“Alerts” on page 7 briefly introduces alerts and LANDP alert functions management. The alert listings in this chapter are for users who are familiar with NetView programs and SNA networks. Refer to the books *LANDP Servers and System Management* and *SNA Formats* for additional information. See “Bibliography” on page 423 for full titles and order numbers.

Electronic journal server

The following alert occurs when, during initialization, the electronic journal server cannot call the shared-file server successfully.

EJ1—Unsuccessful call to shared-file server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'C5D3C5C3D1D67B7B' (ELECJO## in EBCDIC) Type = X'19' (Program Product)

Forwarding server

The following alert occurs when, during initialization, the forwarding server cannot call the store-for-forwarding server successfully.

FF1—Unsuccessful call to store-for-forwarding server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'C6D6D9E6C1D9C440' (FORWARD in EBCDIC) Type = X'19' (Program Product)

MSR/E server

Magnetic stripe reader/encoder (MSR/E) server

The following alerts occur when devices used by the magnetic stripe reader/encoder (MSR/E) server report errors.

MSR1—Hardware error

This alert occurs when an MSR/E device reports an irrecoverable hardware error.

Alert ID number		X'D365D39D'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6114'	Magnetic stripe reader
User causes	(none)	
Install causes	(none)	
Failure causes	X'6114'	Magnetic stripe reader
Actions	X'0300' X'3000' X'1808'	Check for damage Contact appropriate service representative Replace MSR or MSR/E
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D4E2D9C5F4F77B7B' (MSRE47## in EBCDIC) Type = X'00' (Unspecified Device)

MSR2—Device not connected

This alert occurs when an MSR/E device is not installed properly.

Alert ID number		X'F3F95A9C'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6114'	Magnetic stripe reader
User causes	(none)	
Install causes	X'3451'	Device cable installed incorrectly
Actions	X'1500'	Correct installation problem
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D4E2D9C5F4F77B7B' (MSRE47## in EBCDIC) Type = X'00' (Unspecified Device)

PIN pad server

Personal identification number (PIN) pad server

The following alerts occur when devices used by the personal identification number (PIN) pad server report errors.

PIN1—Hardware error

This alert occurs when a PIN key pad device reports an irrecoverable hardware error.

Alert ID number		X'F3E19DD1'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6111'	Key pad
User causes	(none)	
Install causes	(none)	
Failure causes	X'6111'	Key pad
Actions	X'0300' X'3000' X'1800'	Check for damage Contact appropriate service representative Replace defective equipment
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7C9D5D7F4F77B7B' (PINP47## in EBCDIC) Type = X'29' (Keyboard)

PIN2—Device not connected

This alert occurs when a PIN key pad device is not installed properly.

Alert ID number		X'C4B87FBB'
Alert type	X'01'	Permanent
Alert description	X'1100'	Input device error
Probable causes	X'6111'	Key pad
User causes	(none)	
Install causes	X'3451'	Device cable installed incorrectly
Actions	X'1500'	Correct installation problem
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'D7C9D5D7F4F77B7B' (PINP47## in EBCDIC) Type = X'29' (Keyboard)

Shared-file server

Shared-File server

The following alerts occur when the shared-file server detects errors.

SF1—Error by disk read

This alert occurs when a hard disk reports an irrecoverable I/O error.

Alert ID number		X'FAC0FE4C'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'6310'	DASD device
User causes	(none)	
Install causes	(none)	
Failure causes	X'6310'	Disk drive
Actions	X'F006' X'F0D0' X'82' SF	Reoccurrence of same error suggests media failure. Failing component location (Unit)
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8C6C9D3C57B7B' (SHFILE## in EBCDIC) Type = X'11' (Disk)

SF2—File full

This alert occurs when a disk used by the shared-file server is full.

Alert ID number		X'FEBF883E'
Alert type	X'01'	Permanent
Alert description	X'1312'	Disk operation error
Probable causes	X'5001'	DASD media
User causes	X'7300'	File full
Actions	X'32A0' X'82' SF	Report the following (Unit)
Install causes	(none)	
Failure causes	(none)	
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C8C6C9D3C57B7B' (SHFILE## in EBCDIC) Type = X'11' (Disk)

Store-for-forwarding server

The following alert occurs when, during initialization, the store-for-forwarding server cannot call the shared-file server successfully.

SFF1—Unsuccessful call to shared-file server

Alert ID number		X'434247A4'
Alert type	X'01'	Permanent
Alert description	X'7001'	Resources not active
Probable causes	X'7001' X'8002'	Local system operator Workstation configuration
User causes	X'7005'	Device is not in the proper position
Install causes	(none)	
Failure causes	(none)	
Actions	X'1004'	Perform LAN recovery procedures
Additional SVs	X'05' SV X'10' SF	Hierarchy or resource list Hierarchy name list First resource below sender Name = (Workstation group ID) Type = X'81' (Service point) Second resource below sender Name = LANDP Type = X'18' (Transaction program) Third resource below sender Name = (Workstation ID) Type = X'84' (Programmable workstation) Fourth resource below sender Name = X'E2C6D6D9C6D6D9E6' (SFORFORW in EBCDIC) Type = X'19' (Program Product)

Chapter 16. 3270 emulator operator information area

The 3270 emulator uses the last line of the screen, the operator information area, to provide status information. The format of the operator information area depends on whether you use the emulator in SBCS mode or in DBCS mode.

Deriving the status indicator codes

This explains the derivation of the three digit Status Indicator Codes that LANDP's 3270 emulator places in the Operator Information Area (OIA) .

The codes fall into several ranges:#

- 3xx - Cryptography errors
- 4xx - Host data stream errors
- 6xx - Release errors
- 7xx - Connect errors
- 8xx - Read Host errors
- 9xx - Send Host errors

Cryptography errors

Codes in the 3xx range indicate cryptography errors and are individually defined, as follows:

- 394** A hardware or software error occurred while generating the encryption key or initial value.
- 395** A hardware or software error occurred while sending the encryption initial value to the host.
- 396** A hardware or software error occurred while verifying the encryption data sent from the host.
- 397** A hardware or software error occurred while sending the encryption verification response to the host.
- 398** A hardware or software error occurred while decrypting data sent from the host.
- 399** A hardware or software error occurred while encrypting data to be sent to the host.

Host data stream errors

Codes in the 4xx range indicate host data stream errors and are individually defined, as follows:

- 401** Host data stream contained an invalid command code, an invalid data stream order sequence, or invalid structured field.
- 402** Host data stream contained an invalid address in a Set Buffer Address Erase Unprotected to Address or Repeat to Address data stream order sequence.

3270 emulator operator information area

- 403 Host data stream contained a Read Modified, Read Modified All, Read Buffer or Erase All Unprotected command which was followed by subsequent data.
- 498 An unexpected negative response was received from the host. This probably indicates a host protocol or communications error.

To further diagnose the exact reason for the failure, examine the contents of the host datastream to determine the cause of the error.

Other error codes

Codes of 6xx and above are generated when a SNA function ends with a return code which indicates that an error has occurred. The first digit indicates the SNA function which failed (6=Release, 7=Connect, 8=Read Host and 9=Send Host), and the last two digits are derived from the last three bits of each character of the LANDP return code received from the SNA server, the LANDP workgroup server or the router.

For example, a timeout on a send causes an L8 return code to be returned. 'L8' in ASCII is hex '4C38', and so the OIA error code is 940, which is derived as follows:

- 9 - means 'Send'
- 4 - from 'L'. In ASCII this is hex 4C, binary 0100 1100;
The last three bits are 100, which is decimal 4.
- 0 - from '8'. In ASCII this is hex 38, binary 0011 1000;
The last three bits are 000, which is decimal 0.

Each digit of the xx can therefore only be in the range 0-7 and can be derived from several alternative return code characters:

OIA	:	x'30'	-	x'38'	-	x'40'	-	x'48'	-	x'50'	-	x'58'	-
digit	:	x'37'		x'3F'		x'47'		x'4F'		x'57'		x'5F'	
----	:	-----		-----		-----		-----		-----		-----	
0	:	0		8				H		P		X	
1	:	1		9		A		I		Q		Y	
2	:	2				B		J		R		Z	
3	:	3				C		K		S			
4	:	4				D		L		T			
5	:	5				E		M		U			
6	:	6				F		N		V			
7	:	7				G		O		W			

In practise, only certain codes are used. This table gives the OIA error codes for return codes in the ranges I1-I4, L0-LM, P0-PF, PZ and U1-U9.

```
OIA : LANDP
code : return codes
---- : -----
x00 : P0, P8
x01 : P1, P9, PA
x02 : P2, PB, PZ
x03 : P3, PC
x04 : P4, PD
x05 : P5, PE
x06 : P6, PF
x07 : P7
x11 : I1
x12 : I2
x13 : I3
x14 : I4
x40 : L0, L8, LH
x41 : L1, L9, LA, LI
x42 : L2, LB, LJ
x43 : L3, LC, LK
x44 : L4, LD, LL
x45 : L5, LE, LM
x46 : L6, LF
x47 : L7, LG
x50 : U8
x51 : U1, U9
x52 : U2
x53 : U3
x54 : U4
x55 : U5
x56 : U6
x57 : U7
```

To further diagnose the exact reason for the failure, examine the LANDP function trace to determine the failing SNA function and its return code.

Status indicator codes

If there is an error condition, then the operator information area includes a status indicator code. The following tables list the common reasons for some of the status indicator codes that may be generated.

Status indicator codes

701	LUA definition error <ul style="list-style-type: none">• DOS: SNA.CFG and LAN.CFG mismatch• OS/2: Communications Server LUA definitions mismatch• AIX: POSTSNA.CFG and LVA.CFG files do not agree
703	No communication buffers. Configuration error.
705	LANDP internal error. For example, (OS/2) server-managed cryptography has been requested but the Communications Server exits are missing or invalid.
712	Modem powered off, or communication adapter or cabling hardware problem.
713	No X.25 circuit available.
740	LAN time-out.
741	Hardware failure or configuration error (LAN.CFG or COM.CFG).
742	The gateway is not accessible for one of the following reasons: <ul style="list-style-type: none">• Configuration error• The gateway is powered off• LANDP not loaded at the gateway
743	Session not defined, configuration error.
744	Irrecoverable gateway error.
745	Server not loaded. Configuration error.
746	Irrecoverable workstation error.
747	LAN adapter not present or support software not loaded.
750	<ul style="list-style-type: none">• DOS: No DLC loaded, configuration problem• OS/2: Communications Server not started or link not started• AIX: SNA/6000 not started or link not started• AS/400: communication problem
751	Pending contact. Communications error.

Status indicator codes

754	Communication adapter hardware error.
756	Communication adapter software microcode error.
801	LUA definition error or LANDP internal error <ul style="list-style-type: none">• DOS: SNA.CFG and LAN.CFG mismatch• OS/2: Communications Server LUA definitions mismatch• AIX: POSTSNA.CFG and LVA.CFG files do not agree
803	An attempt has been made to read a message from the host when there were no pending messages, or to send a message to the host when the host was not ready to receive messages. If a program is running that uses either the LANDP 3270 emulator API or the LANDP 3270 emulator high-level language API (HLLAPI) to communicate with the host, check the logic of this program to ensure it is not trying to communicate with the host at the wrong time.
811	No session with the host.
812	Modem powered off, or communication adapter or cabling hardware problem.
840	LAN time-out.
841	Hardware failure or configuration error (LAN.CFG or COM.CFG).
842	The gateway is not accessible due to one of the following reasons: <ul style="list-style-type: none">• Configuration error• The gateway is powered off• LANDP not loaded at the gateway
843	Session not defined, configuration error.
844	Irrecoverable gateway error.
845	Server not loaded. Configuration error.
846	Irrecoverable workstation error.
847	LAN adapter not present or support software not loaded.

Status indicator codes

- 850**
 - DOS: No DLC loaded, configuration problem
 - OS/2: Communications Server not started or link not started
 - AIX: SNA/6000 not started or link not started
- 851** Pending contact. Communications error.
- 854** Communication adapter hardware error.
- 856** Communication adapter software microcode error.
- 901** LUA definition error
 - DOS: SNA.CFG and LAN.CFG mismatch
 - OS/2: Communications Server LUA definitions mismatch
 - AIX: POSTSNA.CFG and LVA.CFG files do not agree
- 903** No communication buffers. Configuration error.
- 907** Communication server protocol error.
- 911** No session.
- 912** Modem powered off, or communication adapter or cabling hardware problem.
- 940** LAN time-out.
- 941** Hardware failure or configuration error (LAN.CFG or COM.CFG).
- 942** The gateway is not accessible due to one of the following reasons:
 - Configuration error
 - The gateway is powered off
 - LANDP not loaded at the gateway
- 943** Session not defined, configuration error.
- 944** Irrecoverable gateway error.
- 945** Server not loaded.
- 946** Irrecoverable workstation error.
- 947** LAN adapter not present or support software not loaded.

Status indicator codes

- 950**
 - DOS: No DLC loaded, configuration problem
 - OS/2: Communications Server not started or link not started
 - AIX: SNA/6000 not started or link not started
- 951** Pending contact.
- 954** Communication adapter hardware error.
- 956** Communication adapter software microcode error.

status indicator codes, 3270 emulator

Column	SBCS operator information
1	4 System available
2	B Secondary LU: B SNA protocol
3	Primary LU:
	⊙ System operator
	? Unowned
	□ My job
10	X Inhibited keyboard
12	M Machine check
	* Terminal wait
	? Retry
	S System wait
	f Minus function
	⊙ Operation action not valid
	# Numeric field
	√ Communication check
	P Program check
	D Device not working
	O Operator communication check
14 – 16	SIC Status indicator code (see "Status indicator codes" on page 390)
20	√ Communication check reminder
21 – 24	X.25 cause and diagnostic (CLEAR/RESET packet)
26	# Cursor in numeric field
35	↑ Shift key pressed
36	C Ctrl key pressed
37	A Alt key pressed
39	‡ Caps locked
41	N Numeric pad locked
43	â Insert on
49 – 50	Workstation ID
52	Session short name
54 – 61	Session long name (8 characters)
70 – 71	Cursor row
72	/ Separator
73 – 74	Cursor column (80 column screen)
73 – 75	Cursor column (132 column screen)

Column	DBCS operator information
1	4 System available
2	B Secondary LU: B SNA protocol
3	Primary LU: <input checked="" type="checkbox"/> System operator ? Unowned <input type="checkbox"/> My job
5 – 8	Keyboard status, defined by DOS/V FEP
9	↑ In shift status
10 – 13	Keyboard status, defined by DOS/V FEP
17	DBCS translation mode, defined by DOS/V FEP
20	X Inhibited keyboard
22	M Machine check * Terminal wait ? Retry S System wait f Minus function <input checked="" type="checkbox"/> Operation action not valid # Numeric field X Communication check P Program check D Device not working O Operator communication check
24 – 26	SIC Status indicator code (see "Status indicator codes" on page 390)
30	X Communication check reminder
31 – 34	X.25 cause and diagnostic (from CLEAR/RESET packet)
36	# Cursor in numeric field
55	C Ctrl key pressed
56	A Alt key pressed
57	⚡ Caps locked
58	N Numeric lock
59	^ Insert on
61 – 62	Workstation ID
64	Session short name
66 – 73	Session long name
75 – 76	Cursor row
77	/ Separator
78 – 79	Cursor column (80 column screen)
78 – 80	Cursor column (132 column screen)

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A

abend. Abnormal end of task.

abnormal end of task (abend). Termination of a task before its completion because of an error condition that cannot be resolved by recovery facilities while the task is executing.

abstract class. A class that provides common information for subclasses, and that therefore cannot be instantiated. Abstract classes provide at least one abstract method.

abstract method. A method with a signature, but no implementation. You provide the implementation of the method in the subclass of the abstract class that contains the abstract method.

account. In the AIX operating system, the log-in directory and other information that gives a user access to the system.

ACF. Advanced Communications Function.

ACF/NCP. Advanced Communications Function for the Network Control Program.

activate logical unit request (ACTLU). A request, sent by the host to the LANDP SNA server, to establish a logical session. The LANDP SNA server sends a positive response if the logical unit has been defined for this workstation.

activate physical unit request (ACTPU). A request, sent by the host to the LANDP SNA server, to establish a physical session.

active. In an XLR environment, the server (and, by implication, the workstation) that handles client requests and sends logging data to the backup.

ACTLU. Activate logical unit request.

ACTPU. Activate physical unit request.

adapter. (1) A part that electrically or physically connects a device to a computer or to another device. (2) A printed circuit board that modifies the system unit to allow it to operate in a particular way.

address. The unique code assigned to each device or workstation connected to a network. A standard Internet address is a 32-bit address field. This field can be broken into two parts. The first part contains the network address; the second part contains the host number.

Advanced Communications Function (ACF). (1) A group of IBM licensed programs, principally VTAM programs, TCAM, NCP, and SSP, that use the concepts of Systems Network Architecture (SNA), including distribution of function and resource sharing. (2) See also Network Control Program (NCP).

Advanced Communications Function for the Network Control Program (ACF/NCP). (1) An IBM program product that provides communication controller support for single-domain, multiple-domain, and interconnected network capability. (2) See also Advanced Communications Function (ACF) and Network Control Program (NCP).

advanced program-to-program communication (APPC). The general facility characterizing the LU 6.2 architecture and its various implementations in products.

AID. Attention identifier.

AIX (Advanced Interactive Executive). IBM's licensed version of the UNIX operating system.

alert. (1) A message sent to a management services focal point in a network to identify a problem or an impending problem. (2) In the NetView program, a high-priority event that warrants immediate attention. A database record is generated for certain event types that are defined by user-constructed filters.

alert condition. A problem or impending problem for which information is collected and possibly forwarded for problem determination, diagnosis, or resolution.

alert description. Information in an alert table that defines the contents of a Systems Network Architecture (SNA) alert for a particular message ID.

alert focal point. The system in a network that receives and processes (logs, displays, and optionally forwards) alerts. An alert focal point is a subset of a problem management focal point.

alert ID number. A value created from specific fields in the alert using a cyclic redundancy check. A focal point uses this value to refer to a particular alert, for example, to filter out duplicate alerts.

alert type. A value in an alert that indicates the problem being reported.

American National Standards Institute (ANSI). An organization consisting of producers, consumers, and general interest groups, that establishes the procedures by which accredited organizations create and maintain voluntary industry standards in the United States. (A)

ANSI. American National Standards Institute.

APAR. Authorized program analysis report.

API. Application program interface.

APPC. Advanced program-to-program communication.

applet. A Java program designed to run within a Web browser. Contrast with application.

application. (1) In LANDP, a program using IBM LANDP for DOS, IBM LANDP for OS/2, IBM LANDP for Windows NT, IBM LANDP for AIX, IBM FBSS/2, IBM PC/Integrator, or IBM PC Integrator/2, tailored to the needs of the workstation user. (2) The use to which an information processing system is put; for example, a payroll application, an airline reservation application, a network application. (3) A collection of software components used to perform specific types of user-oriented work on a computer. (4) In Java programming, a self-contained, stand-alone Java program that includes a static main method. It does not require an applet viewer. Contrast with applet.

application program. (1) A program that is specific to the solution of an application problem. Synonymous with application software. (T) (2) A program written for or by a user that applies to the user's work, such as a program that does inventory control or payroll. (3) A program used to connect and communicate with stations in a network, enabling users to perform application-oriented activities.

application program interface (API). (1) In LANDP, the common interface by which server functions are requested. Requests are expressed by issuing a call to the supervisor. (2) A functional interface supplied by the operating system or by a separately orderable licensed program that allows an application program written in a high-level language to use specific data or functions of the operating system or the licensed program. (3) The interface through which an application program interacts with an access method.

application software. (1) Software that is specific to the solution of an application problem. (T) Synonymous with application program. (2) Software coded by or for an end user that performs a service or relates to the user's work. (3) Software products such as games, spreadsheets, and word processing programs designed for use on a personal computer.

argument. (1) An independent variable. (I) (A) (2) Any value of an independent variable; for example, a search key; a number identifying the location of an item in a table. (I) (A) (3) A parameter passed between a calling program and a called program.

arrival sequence. An order in which records are retrieved that is based on the order in which records are stored in a physical file.

AS/400®. IBM Application System/400®.

ASCII (American National Standard Code for Information Interchange). The standard code, using a coded character set consisting of 7-bit coded characters (8-bits including parity check), used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters. (A)

Note: IBM has defined an extension to ASCII code (characters 128-255).

ASCIIZ format. A string of ASCII characters ending with a null character (X'00').

ASYNC. Asynchronous.

asynchronous (ASYNC). (1) Pertaining to two or more processes that do not depend upon the occurrence of specific events such as common timing signals. (T) (2) Without regular time relationship; unexpected or unpredictable with respect to the execution of program instructions.

attention identifier (AID). (1) A code in the inbound 3270 data stream that identifies the source or type of data that follow. (2) A character in a data stream indicating that the user has pressed a key, such as the Enter key, that requests an action by the system.

authorization. (1) In computer security, the right granted to a user to communicate with or make use of a computer system. (T) (2) An access right. (3) The process of granting a user either complete or restricted access to an object, resource, or function.

authorized program analysis report (APAR). A report of a problem caused by a suspected defect in a current unaltered release of a program.

B

back-out. To restore a file to a previous condition by removing changes in the inverse chronological order from which the changes were originally made.

backup. In an XLR environment, the server (and, by implication, the workstation) that accepts logging data from the active and maintains a mirror set of databases (at a transaction level).

BASIC. (1) Beginner's all-purpose symbolic instruction code. A procedural algebraic language originally designed for ease of learning with a small instruction repertoire. (A) (2) A high-level programming language with a small number of statements and a simple syntax that is designed to be easily learned and used and that is widely used for interactive applications on microcomputers.

Basic Input/Output System (BIOS). (1) Code that controls basic hardware operations, such as interactions with diskette drives, hard disk drives, and the keyboard. (2) See also NetBIOS.

BAT, bat. (1) A DOS batch file extension (.BAT). (2) A batch file that contains a series of commands to be processed sequentially.

BB. Begin bracket.

begin bracket (BB). (1) An SNA bracket protocol term issued by the LANDP SNA server when bracket protocol is requested in the bind session. (2) Contrast with end bracket.

BID. In SNA, a request to start a bracket.

bind. To associate a variable with an absolute address, identifier, or virtual address, or with a symbolic address or label in a program.

BIND. (1) In SNA, a request to start a session between two logical units. (2) Contrast with UNBIND.

binding. (1) In programming, an association between a variable and a value for that variable that holds within a defined scope. The scope may be that of a rule, a function call, or a procedure invocation. (T) (2) In the AIX operating system, a temporary association between

a client and both an object and a server that exports an interface to the object. A binding is meaningful only to the program that sets it and is represented by a bound handle.

BIOS. Basic Input/Output System.

block. (1) The smallest complete unit of data that can be transmitted between units in a communication network. The maximum size of a block depends on the characteristics of the sending or receiving unit. (2) A group of contiguous characters recorded as a unit. (3) See also connectivity programming request block, program control block.

browser. An Internet-based tool that lets users browse web sites.

buffer. (1) A routine or storage used to compensate for a difference in rate of flow of data, or time of occurrence of events, when transferring data from one device to another. (A) (2) A portion of storage used to hold input or output data temporarily.

C

C language. A language used to develop software applications in compact, efficient code that can be run on different types of computers with minimal change.

call. In LANDP, the invocation of one of the LANDP API routines, RMTREQ, GETRPLY and RMTAREQ (client calls) and GETREQ, RMTRPLY, and SRVINIT (server calls). A LANDP client uses the RMTREQ call to request a LANDP function. Calls use the connectivity programming request block (CPRB) to pass and receive information. The syntax of a call varies with the programming language. The following examples are for COBOL and C respectively

```
CALL "RMTREQ" USING BY REFERENCE EHC-CPRB  
                  BY VALUE      EHC-RESERVED
```

```
retcode = GETREQ(&mycprb, EHC_RESERVED);
```

CCITT. Comité Consultatif International Télégraphique et Téléphonique. The International Telegraph and Telephone Consultative Committee.

CD. Compact disc.

CD-ROM. Compact disc-read-only memory.

CICS®. Customer Information Control System.

CID. Configuration, Installation, and Distribution. An IBM standard methodology for installing and distributing products under DOS, OS/2, and Windows 3.1.

ciphertext. (1) In computer security, text produced by encryption. (2) Synonym for enciphered data.

cleartext. (1) Nonencrypted data. (2) Synonym for plaintext.

class. An encapsulated collection of data and methods to operate on data. A class can be instantiated to produce an object that is an instance of the class.

CLASSPATH. In your deployment environment, the environment variable keyword that specifies the directories in which to look for class and record files.

client. (1) A functional unit that receives shared services from a server. (T) (2) A user. (3) See also client/server, client workstation, server, and user.

client workstation. (1) In IBM LANDP for DOS, IBM LANDP for OS/2, IBM LANDP for AIX, IBM LANDP for Windows NT, IBM FBSS/2, IBM PC/Integrator, and IBM PC Integrator/2, a workstation in a LAN that uses a service. (2) See also client, client/server, server, and user.

client/server. (1) In communications, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server. (2) See also client, client workstation, server, and user.

CLIST, clist. Command list.

close. (1) A LANDP family function used to release a server. (2) To end the processing of a file. (3) A data manipulation function that ends the connection between a file and a program. (4) Contrast with open.

COBOL. Common business-oriented language. A high-level programming language, based on English, that is used primarily for business applications.

code page. An assignment of graphic characters and control function meanings to all code points; for example, assignment of characters and meanings to 256 code points for an 8-bit code, assignment of characters and meanings to 128 code points for a 7-bit code.

collating sequence. A specified arrangement used in sequencing. (I) (A)

COM, com. A DOS file with the file extension .COM.

command. (1) Loosely, a mathematical or logic operator. (A) (2) A request from a terminal for performance of an operation or processing of a program. (3) A character string from a source external to a system that represents a request for system action.

command list (CLIST, clist). A list of commands and statements designed to perform a specific function for the user.

Common User Access™ architecture. Guidelines for the dialog between a human and a workstation or terminal. One of the three SAA architectural areas.

communication configuration. In LANDP, the process of selecting and describing to the LANDP programs the particular arrangement of communication functions about a particular user.

communication controller. (1) A device that directs the transmission of data over the data links of a network; its operation may be controlled by a program executed in a processor to which the controller is connected or it may be controlled by a program executed within the device. (T) (2) A type of communication control unit whose operations are controlled by one or more programs stored and executed in the unit. It manages the details of line control and the routing of data through a network.

communication server. A server that communicates with a remote computer for various workstations in a local area network.

Communications Server. An IBM licensed program that supports the development and use of OS/2 applications involving two or more connected systems or workstations. IBM SecureWay Communications Server for OS/2 Warp provides multiple concurrent connectivities using different protocols for IBM 3270 and 5250 emulation sessions, printer sessions, and file transfers. It supports a range of application programming interfaces (API), which may be called concurrently and are designed for a variety of applications. IBM SecureWay Communications Server for OS/2 Warp includes the necessary interfaces for network management.

compact disc (CD). (1) A disc, usually 4.75 inches in diameter, from which data is read optically by means of a laser. (2) A disc with information stored in the form of pits along a spiral track. The information is decoded by

a compact-disc player and interpreted as digital audio data, which most computers can process.

compact disc-read-only memory (CD-ROM). A 4.75-inch optical memory storage medium, capable of storing about 550 megabytes of data. The standards for CD-ROM storage are known as the "Yellow Book."

compaction. (1) Any method for encoding data to reduce the storage it requires. (2) In SNA, the transformation of data by packing two characters in a byte so as to take advantage of the fact that only a subset of the allowable 256 characters is used; the most frequently sent characters are compacted. (3) See also compression and encode.

compression. (1) The process of eliminating gaps, empty fields, redundancies, and unnecessary data to shorten the length of records or blocks. (2) In SNA, the replacement of a string of up to 64 repeated characters by an encoded control byte to reduce the length of the data stream sent to the LU-LU session partner. The encoded control byte is followed by the character that was repeated (unless that character is the prime compression character). (3) Contrast with decompression.

config.sys. A file created during the customization process that holds the details about the system configuration. The CONFIG.SYS file is used during system operation.

configuration. (1) The manner in which the hardware and software of an information processing system are organized and interconnected. (T) (2) The physical and logical arrangement of devices and programs that make up a data processing system. (3) The devices and programs that make up a system, subsystem, or network.

connection. (1) An association established between functional units for conveying information. (2) The path between two protocol modules that provide reliable stream delivery service. On the Internet, a connection extends from a TCP module on one machine to a TCP module on the other.

connectivity. The capability to attach a variety of functional units without modifying them.

connectivity programming request block (CPRB). The control block used for communication between a server and a client. This control block contains the information that is exchanged between clients and

servers, and the information required for routing the requests and replies.

constructor. A method called to set up a new instance of a class.

control program. A computer program designed to schedule and supervise the execution of programs of a computer system. (I) (A)

coprocessor. (1) A supplementary processor that performs operations in conjunction with another processor. (2) In personal computers, a microprocessor on an expansion board that extends the address range of the processor in the system unit or adds specialized instructions to handle a particular category of operations; for example, an I/O coprocessor, math coprocessor, or networking coprocessor.

corrective service diskette. A diskette provided by IBM to registered service coordinators for resolving user-identified problems with previously installed software. This diskette includes program updates designed to resolve problems.

CPRB. Connectivity programming request block.

CRC. The cyclic redundancy check character. (A)

critical error handler. A routine that the operating system calls automatically if an error occurs in an operating system function call. There is a standard error handler or the user can provide one for special functions.

CRV. Cryptography verification request.

cryptography. (1) The transformation of data to conceal its meaning. (2) In computer security, the principles, means, and methods for encrypting plaintext and decrypting ciphertext.

cryptography key. A parameter that determines cryptographic transformations between plaintext and ciphertext.

cryptography verification (CRV) request. A request unit sent by the primary logical unit (PLU) to the secondary logical unit (SLU) as part of cryptographic session establishment, to allow the SLU to verify that the PLU is using the correct session cryptography key and initialization vector (IV).

CTS. Clear to Send.

CUA™ architecture. Common User Access™ architecture.

cursor. (1) A movable, visible mark used to show a position of interest on a display surface. (A) (2) In SAA Common User Access architecture, a visual cue that shows a user where keyboard input will appear on the screen.

Customer Information Control System (CICS®). An IBM licensed program that allows transactions entered at remote terminals to be processed concurrently by user-written application programs. It includes facilities for building, using, and maintaining databases.

Customer Information Control System for Virtual Storage (CICS/VS). An IBM licensed program used in a communications network.

customization. The process of designing a data processing installation or network to meet the requirements of particular users.

customization workstation. A workstation on which LANDP is installed, and which is used to customize a LANDP workgroup.

cyclic redundancy check character (CRC). A character used in a modified cyclic code for error detection and correction. (A)

D

DASD. Direct access storage device.

data circuit-terminating equipment (DCE). In a data station, the equipment that provides the signal conversion and coding between the data terminal equipment (DTE) and the line. (I)

Notes:

1. The DCE may be separate equipment or a part of the DTE or an integral part of the DTE or of the intermediate equipment.
2. A DCE may perform other functions that are usually performed at the network end of the line.

Data Encryption Standard (DES). In computer security, the National Institute of Standards and Technology (NIST) Data Encryption Standard, adopted by the U.S. government as Federal Information Processing Standard (FIPS) Publication 46, which allows only hardware implementations of the data encryption algorithm.

data flow control (DFC). In SNA, a request/response unit (RU) category used for requests and responses exchanged between the data flow control layer in one half-session and the data flow control layer in the session partner. Half duplex, flip-flop is the only LANDP-supported data flow control for both send and receive.

data link control (DLC). (1) In SNA, the layer that consists of the link stations that schedule data transfer over a link between two nodes and perform error control for the link. Examples of data link control are SDLC for serial-by-bit link connection and data link control for the System/370™ channel. (2) See also Systems Network Architecture (SNA). (3) In SNA, a set of rules used by two nodes on a data link to accomplish an orderly exchange of information.

data set. The major unit of data storage and retrieval, consisting of a collection of data in one of several prescribed arrangements and described by control information to which the system has access. Sometimes called a file.

data terminal equipment (DTE). The part of a data station that serves as a data source, data sink, or both. (I) (A)

database description (DBD). (1) In LANDP, the shared-file server descriptor. (2) In IMS/VS, the collection of macro-parameter statements that describes an IMS/VS database. These statements describe the hierarchical structure, IMS/VS organization, device type, segment length, sequence fields, and alternate search fields. The statements are assembled to produce database description blocks.

datagram. The basic unit of information that is passed across the Internet. It consists of one or more data packets.

DBCS. Double-byte character set.

DBD. Database description.

DBM. Database manager.

DCA. Direct communication adapter.

DCE. (1) Data circuit-terminating equipment. (2) Distributed Computing Environment.

DDE. Dynamic data exchange.

DDT. Diagnostic and debugging tool.

decipher. (1) To convert enciphered data in order to restore the original data. (T) (2) In computer security, to convert ciphertext into plaintext by means of a cipher system. (3) To convert enciphered data into clear data. (4) Synonymous with decrypt. (5) Contrast with encipher.

decompression. (1) A function that expands data to the length that preceded data compression. (2) Contrast with compression.

decrypt. (1) In computer security, to decipher or decode. (2) Synonymous with decipher. (T)

default. A value, attribute or option that is assumed when none is explicitly specified.

delimiter. (1) A character used to show the beginning and end of a character string. (T) (2) A character that groups or separates words or values in a line of

deprecation. An obsolete component that may be deleted from a future release of a product.

DES. Data Encryption Standard.

development workstation. A workstation which is part of a LANDP workgroup, and which is customized via a customization workstation.

device driver. In Advanced DOS, a file that contains the code needed to attach and use a device.

DFC. Data flow control.

DIN. Deutsches Institut für Normung.

direct access. (1) The capability to obtain data from a storage device, or to enter data into a storage device, in a sequence independent from their relative position, by means of addresses indicating the physical position of the data. (T) (2) Contrast with sequential access.

direct access storage device (DASD). A device where access time is effectively independent of the location of the data.

directory. (1) A table of identifiers and references to the corresponding items of data. (I) (A) (2) A type of file containing the names and controlling information for other files or other directories. (3) An index that is used by a control program to locate one or more blocks of data that are stored in separate areas of a data set in direct access storage. (4) A listing of the files stored on a diskette.

directory service (DS). An application service element that translates the symbolic names used by application processes into the complete network addresses used in an OSI environment. (T)

disk. (1) A round, flat data medium that is rotated to read or write data. (T) (2) Loosely, a magnetic disk unit.

disk operating system. An operating system for computer systems that use disks and diskettes for auxiliary storage of programs and data.

diskette. (1) A thin, flexible magnetic disk and a semi-rigid protective jacket, where the disk is permanently enclosed. (2) Contrast with hard disk.

Distributed Computing Environment (DCE). The Open Software Foundation (OSF) specification (or a product derived from this specification) that assists in networking. DCE provides such functions as authentication, directory service (DS), and remote procedure call (RPC).

distributed system. A data processing system where processing, storage, and control functions, and also input and output operations, are distributed among remote locations.

distribution diskette. A diskette on which IBM sends programs and documentation to a customer.

DLC. Data link control.

DLL. Dynamic link library.

DMA. Direct memory access.

domain. (1) The part of a computer network where the data processing resources are under common control. (T) (2) In a database, all the possible values of an attribute or a data element. (3) In SNA, a system services control point (SSCP) and the physical units (PUs), logical units (LUs), links, link stations, and all associated resources that the SSCP could control with activation requests and deactivation requests.

DOS. Disk Operating System.

double-byte character set (DBCS). (1) A set of characters in which each character is represented by 2 bytes. Languages such as Japanese, Chinese, and Korean, which contain more symbols than can be represented by 256 code points, require double-byte character sets. Because each character requires 2

bytes, the typing, display, and printing of DBCS characters requires hardware and programs that support DBCS. (2) Contrast with single-byte character set (SBCS).

DS. Directory service.

DSR. Data Set Ready.

DTE. Data terminal equipment. (A)

DTE/DCE interface. The physical interface and link access procedures between a data terminal equipment (DTE) and a data circuit-terminating equipment (DCE).

dynamic data exchange (DDE). The exchange of data between programs or between a program and a data-file object. Any change made to information in one program or session is applied to the identical data created by the other program.

dynamic link library (DLL). A file containing executable code and data bound to a program at load time or run time, rather than during linking. The code and data in a dynamic link library can be shared by several applications simultaneously.

E

EB. End bracket.

EBCDIC. Extended binary-coded decimal interchange code.

EGA. Enhanced graphics adapter.

EID. End-of-message (EOM) identification.

EMM. Expanded memory manager.

emulation. The use of a data processing system to imitate another data processing system, so that the imitating system accepts the same data, executes the same programs, and achieves the same results as the imitated system. Emulation is usually achieved with hardware or firm-ware. (T)

encipher. (1) To scramble data or to convert data to a secret code that masks the meaning of the data to any unauthorized recipient. Synonymous with encrypt. (T) (2) In computer security, to convert plaintext into an unintelligible form by means of a cipher system. Synonymous with cipher. (3) Contrast with decipher. See also encode.

enciphered data. (1) Data whose meaning is concealed from unauthorized users or observers. (2) Synonymous with encode.

encode. (1) To convert data by the use of a code in such a manner that reconversion to the original form is possible. (T) (2) In computer security, to convert plaintext into an unintelligible form by means of a code system. (3) See also plaintext.

encrypt. (1) In computer security, to encode or encipher. (2) Synonym for encipher. (T)

end bracket (EB). (1) An SNA bracket protocol term used when the bind session specifies the end bracket call. If specified in the bind session, the personal computer may send both begin bracket and end bracket calls (not-response mode protocol). (2) Contrast with begin bracket.

end-of-message (EOM). The character or sequence of characters that shows the end of a message or record.

enhanced graphics adapter (EGA). An adapter, such as the IBM Enhanced Graphics Adapter, that provides high-resolution graphics, allowing the use of a color display for text processing and also graphics applications.

environment. A named collection of logical and physical resources used to support the performance of a function.

EOM. End-of-message.

erase. To remove data from a data medium. Erasing is usually accomplished by overwriting the data or deleting the references. (T)

error log. (1) A data set or file in a product or system where error information is stored for later access. (2) A record of machine checks, device errors, and volume statistical data.

error message. An indication that an error has been detected. (A)

ERRORLEVEL. A parameter of the IF command used by batch files. It is used in testing for failure of recently loaded programs.

event. (1) An occurrence or happening. (2) An occurrence of significance to a task; for example, the completion of an asynchronous operation, such as an input/output operation. (3) A data link control command

and response passed between adjacent nodes that allows the two nodes to exchange identification and other information necessary for operation over the data link. (4) In the NetView program, a record indicating irregularities of operation in physical elements of a network.

exception. An object that has caused some new condition, such as an error. In Java, throwing an error means passing that object to an interested party. A signal indicates what condition has occurred. Catching the condition means receiving the sent object. Handling this exception means dealing with the problem after receiving the object (though it might mean doing nothing, which is bad programming practice).

exchange identification (XID). The ID that is exchanged with the remote physical unit when an attachment is first established.

EXE, exe. An executable file with the file extension .EXE.

extended ASCII. A set of ASCII codes that uses the eighth (most significant) bit to define 127 additional codes. Standard ASCII uses 7 bits and defines 128 codes.

extended binary-coded decimal interchange code (EBCDIC). A coded character set of 256 8-bit characters.

external logging replicator (XLR). Shared-file mode of operation in which fault-tolerant data replication is achieved by logging database updates to an external server.

F

facility. (1) An operational capability, or the means for providing such a capability. (T) (2) A service provided by an operating system for a particular purpose; for example, the checkpoint/restart facility.

FBSI. Financial Branch Systems Integrator.

FBSS (DOS). IBM Financial Branch Systems Service (DOS). The predecessor to LANDP.

FBSS/2. Financial Branch Systems Service/2.

FCB. File control block.

FIC. First-in-chain.

file. (1) A named set of records stored or processed as a unit. (T) (2) A collection of information treated as a unit. (3) A collection of data that is stored and retrieved by an assigned name.

file control block (FCB). A record that contains all of the information about a file, such as its structure, length, and name.

file index table (FIT). A table used by WorkSpace On-Demand to redirect file access requests from a client workstation's boot drive to the appropriate location on the boot server.

file server. A high-capacity disk storage device or a computer that each computer on a network can use to access and retrieve files that can be shared among the attached computers.

file transfer. In remote communications, the transfer of one or more files from one system to another over a communications link.

first-in-chain (FIC). A request unit (RU) whose request header (RH) begin chain indicator is on and whose RH end chain indicator is off.

FIT. file index table

fixed disk. Synonym for hard disk.

flag. (1) A variable indicating that a certain condition holds. (T) (2) Any of various types of indicators used for identification; for example, a word mark. (A) (3) A character that signals the occurrence of some condition, such as the end of a word. (A)

FMH. Function management header.

format identification (FID) field. In SNA, a field in each transmission header (TH) that shows the format of the transmission header; that is, the presence or absence of certain fields.

forward recovery. The process of reconstructing a file from a particular point by restoring a saved version of the file and then applying changes to that file in the same order in which they were originally made.

function. (1) In IBM LANDP for DOS, IBM LANDP for OS/2, IBM LANDP for Windows NT, IBM FBSS (DOS), IBM FBSS/2, IBM PC/Integrator, and IBM PC Integrator/2 a function is the specification of an activity to be performed by a server. (2) In computer programming, synonym for procedure.

function management header (FMH). (1) A special record or part of a record that contains control information for the data that follow. (2) In SNA, one or more headers optionally present in the leading request units (RUs) of an RU chain that allow a half-session in an LU-LU session to: (a) select a destination as session partner and control way where end-user data it sends are handled at the destination, (b) change destination or characteristics of data during session, and (c) send between session partners status or user information about destination; for example, whether it is a program or device.

G

gateway. (1) In LANDP, the workstation that connects the LANDP workgroup to a host computer with the necessary LANDP software and the respective physical attachment. (2) A functional unit that interconnects two computer networks with different network architectures. A gateway connects networks or systems of different architectures. A bridge interconnects networks or systems with the same or similar architectures. (T) (3) A network that connects hosts. (4) Contrast with router.

generic alert. A product-independent method of encoding alert data by means of both (a) code points indexing short units of stored text and (b) textual data.

H

hard disk. (1) A rigid magnetic disk such as the internal disks used in the system units of IBM personal computers and in external hard disk drives. (2) Synonym for fixed disk. (3) Contrast with diskette.

HDLC. High-level data link control.

hexadecimal. Describing a numbering system with base of sixteen; valid numbers use the digits 0 through 9 and characters A through F, where A represents 10 and F represents 15.

high-level data link control (HDLC). In data communication, the use of a specified series of bits to control data links under the International Standards for HDLC: ISO 3309 Frame Structure and ISO 4335 Elements of Procedures.

host, host computer, host processor, or host system. (1) The primary or controlling computer in a multiple computer installation. (2) A computer used to prepare programs for use on another computer or on

another data processing system; for example, a computer used to compile, link edit, and test programs to be used on another system.

hot-key. The key combination used to change from one session to another on the workstation.

Hypertext Transfer Protocol (HTTP). The Internet protocol, based on TCP/IP, that is used to fetch hypertext objects from remote hosts.

I

I/O. Input/output.

IBM Operating System/2® (OS/2). Pertaining to the IBM licensed program that can be used as the operating system for personal computers. The OS/2 licensed program can perform multiple tasks at the same time.

ICV. Initial chaining value.

ID. (1) Identifier. (2) Identification.

identification. In computer security, the process that allows a system to recognize an entity with personal, equipment, or organizational characteristics or codes.

identifier. One or more characters used to identify or name a data element or possibly to show certain properties of that data element. (A)

IEEE. Institute of Electrical and Electronics Engineers.

IMS/VS. Information Management System/Virtual Storage.

indexed access. Pertaining to the organization and accessing of the records of a storage structure through a separate index to the locations of the stored records. (A)

indexed sequential access. Pertaining to the organization and accessing of records through an index of the keys that are stored in arbitrarily partitioned sequential files. (A)

initial chaining value (ICV). An 8-byte pseudo-random number used to verify that both ends of a session with cryptography have the same session cryptography key. The initial chaining value is also used as input to Data Encryption Standard (DES) algorithm to encipher or decipher data in a session with cryptography.

initial program load (IPL). (1) The initialization procedure that causes an operating system to begin

operation. (2) The process by which a configuration image is loaded into storage at the beginning of a work day or after a system malfunction. (3) The process of loading system programs and preparing a system to run jobs.

initialization. (1) The operations required for setting a device to a starting state, before the use of a data medium, or before implementation of a process. (T) (2) Preparation of a system, device, or program for operation.

initiate self. An SNA command issued by the LANDP SNA server to initiate a host application. The SNA command is issued in response to the receipt of an Open command from the personal computer.

INITSELF. Initiate self.

input/output (I/O). (1) Describing a device whose parts can perform an input process and an output process at the same time. (I) (2) Describing a functional unit or channel involved in an input process, output process, or both, concurrently or not, and to the data involved in such a process.

Instruction Pointer (IP). In System 38, a pointer that provides addressability for a machine interface instruction in a program.

interface. A shared boundary between two functional units, defined by functional characteristics, signal characteristics, or other characteristics, as appropriate. The concept includes the specification of the connection of two devices having different functions. (T)

International Organization for Standardization (ISO). An organization of national standards bodies from various countries established to promote development of standards to simplify international exchange of goods and services, and develop cooperation in intellectual, scientific, technological, and economic activity.

Internet Protocol (IP). A protocol used to route data from its source to its destination in an Internet environment.

interoperability. (1) The capability to communicate, execute programs, or transfer data among various functional units in a way that requires the user to have little or no knowledge of the unique characteristics of those units. (T) (2) In SAA usage, the ability to link SAA and non-SAA environments and use the combination for distributed processing.

IP. (1) Instruction Pointer. (2) Internet Protocol.

IPL. Initial program load.

ISAM. Indexed sequential access method.

ISO. International Organization for Standardization.

J

Jar file format. Java Archive, a platform-independent file format that aggregates many files into one. Multiple Java applets and their requisite components (.class files, images, sounds, and other resource files) can be bundled in a JAR file and subsequently downloaded to a browser in a single HTTP transaction.

Java. An object-oriented programming language for portable, interpretive code that supports interaction among remote objects. Java was specified and developed by Sun Microsystems, Incorporated. The Java environment consists of the JavaOS, the Virtual Machines for various platforms, the object-oriented Java programming language, and several class libraries.

Java Development Kit (JDK). A set of Java technologies made available to licensed developers by Sun Microsystems. Each release of JDK consists of the Java compiler, Java virtual machine, Java class libraries, Java applet viewer, Java debugger, and other tools.

JavaDoc. Sun Microsystems tool for generating HTML documentation of classes by extracting comments from the Java source code files.

Java Remote Method Invocation (RMI). Method invocation between peers, or between client and server, when applications at both ends of the invocation are written in Java. Java RMI is included in JDK 1.1.

Java Virtual Machine. A software implementation of a central processing unit (CPU) that runs compiled Java code (applets and applications).

journal. (1) A chronological record of changes made in a set of data; the record may be used to reconstruct a previous version of the set. (T) (2) A special-purpose data set that provides an audit trail of operator and system actions, or as a means of recovering superseded data.

JVM. Java Virtual Machine.

K

KB. Kilobyte; 1024 bytes.

key. (1) An identifier within a set of data elements. (T) (2) One or more characters used to identify the record and establish the order of the record within an indexed file.

keystroke. Actuation of a key on a keyboard to perform or release a machine function. (T)

keyword. A name or symbol that identifies a parameter or an ordered set of parameters.

L

LAN. Local area network.

LAN configuration. The process by which the details about the structure of the LAN for a particular user are provided to the LAN family programs. This includes details about the workstations forming the LAN, the services provided by each workstation, and the workstations that receive the services.

LAN trace. A LAN family trace facility that informs about the LAN-related LAN and displays the status of the local area network.

LAN Distributed Platform. The former name for the LAN family of products.

last-in-chain (LIC). A request unit (RU) whose request header (RH) end chain indicator is on and whose RH begin chain indicator is off.

LDA. Logical device address.

LED. Light-emitting diode.

LIC. Last-in-chain.

light-emitting diode (LED). A semiconductor chip that gives off visible or infrared light when operated.

link connection. In SNA, the physical equipment providing two-way communication between one link station and one or more other link stations; for example, a telecommunication line and data circuit-terminating equipment (DCE).

LIP. LAN Internet Protocol.

LLAP. Logical link access path.

loader. A routine, commonly a computer program, that reads data into main storage. (A)

local area network (LAN). A computer network located on a user's premises within a limited geographical area. Communication within a local area network is not subject to external regulations; however, communication across the LAN boundary may be subject to some form of regulation. (T)

local host. In the Internet, the computer to which a user's terminal is directly connected without using the Internet.

logging. The recording of data about specific events.

logical device address (LDA). (1) A number used to represent a terminal or terminal component within a workstation. (2) See also physical device address.

logical link access path (LLAP). In a multi-system environment, the path between any two systems. One or more logical link paths must be defined for each logical link.

logical unit (LU). (1) In SNA, a port through which an end user accesses the SNA network to communicate with another end user and through which the end user accesses the functions provided by the system services control points (SSCPs). An LU can support at least two sessions, one with an SSCP and one with another LU, and may be capable of supporting many sessions with other logical units. (2) A type of network addressable unit that allows end users to communicate with each other and gain access to network resources.

longitudinal parity check. A parity check of a row of binary digits that are members of a set forming a matrix; for example, a parity check of the bits of a track in a block on a magnetic stripe. (T)

longitudinal redundancy check (LRC). Synonym for longitudinal parity check.

LRC. Longitudinal redundancy check.

LU. Logical unit.

LU—LU session type 0. In SNA, a type of session between two LU—LU half-sessions using SNA-defined protocols for transmission control and data flow control, but using end-user or product-defined protocols to augment or replace FMD services protocols.

LU—LU session type 1. In SNA, a type of session between an application program and single- or multiple-device data processing terminals in an interactive, batch data transfer, or distributed processing environment.

LU—LU session type 2. In SNA, a type of session between an application program and a single display terminal in an interactive environment, using the SNA 3270 data stream.

LUSTAT. An SNA command used to send logical unit status information.

M

MAC. Message authentication code.

mapper. A device, such as a piece of code, which performs a mapping function.

mapping. (1) A list, usually in a profile, that establishes a correspondence between items in two groups; for example, a keyboard mapping can establish what character is displayed when a certain key is pressed. (2) In a database, the establishing of correspondences between a given logical structure and a given physical structure. (T)

MB. Megabyte; 1 048 576 bytes.

memory. All of the addressable storage space in a processing unit and other internal storages that is used to execute instructions. (T)

message. (1) An assembly of characters and sometimes control codes that is transferred as an entity from an originator to one or more recipients. A message consists of two parts: envelope and content. (T) (2) A communication sent from a person or program to another person or program. (3) A unit of data sent over a telecommunication line. (4) One or more message segments transmitted among terminals, application programs, and systems. (5) In SAA Common User Access architecture, information not requested by a user but displayed by an application in response to an unexpected event, or when something undesirable could occur.

message authentication code (MAC). (1) In computer security, a value, part of, or accompanying a message, used to determine that the contents, origin, author, or other attributes of all or part of the message are as they appear to be. (2) In cryptography: (a) a number or

value derived by processing data with an authentication algorithm, (b) the cryptographic result of block cipher operations on text or data using a cipher block chain (CBC) mode of operation, (c) a digital signature code.

method. A fragment of Java code within a class that can be invoked and passed a set of parameters to perform a specific task.

MIC. Middle-in-chain.

MICR. Magnetic ink character recognition.

microcode. (1) One or more microinstructions. (2) A code, representing the instructions of an instruction set, that is done in a part of storage that is not program-addressable. (3) To design, write, and also to test one or more microinstructions.

middle-in-chain (MIC). A request unit (RU) whose request header (RH) begin chain indicator and RH end chain indicator are both off.

mnemonic. A symbol chosen to help the user remember the significance of the symbol.

mode. A method of operation.

mode switching. Operator switching between a concurrently running personal computer application and 3270 emulation or other internal application.

MSR, MSR/E. Magnetic stripe reader; Magnetic stripe reader/encoder.

multi-tasking. A mode of operation that provides for concurrent performance, or interleaved execution of two or more tasks. (I) (A)

MVDM. Multiple Virtual DOS Machine.

N

name server. (1) The server that stores resource records about hosts. (2) In the AIX operating system, a host that provides name resolution for a network. Name servers translate symbolic names assigned to networks and hosts into the Internet addresses used by machines. (3) In TCP/IP, synonym for domain name server.

NAU. Network addressable unit.

NCP. Network Control Program.

NDIS. Network Driver Interface Specification

NetBIOS. (1) Network Basic Input/Output System. A standard interface to networks, IBM personal computers (PCs), and compatible PCs, that is used on LANs to provide message, print-server, and file-server functions. Application programs that use NetBIOS do not need to handle the details of LAN data link control (DLC) protocols. (2) See also BIOS.

NetView program. An IBM licensed program used to monitor and manage a network and to diagnose network problems.

network. (1) An arrangement of nodes and connecting branches. (T) (2) A configuration of data processing devices and software connected for information interchange.

network addressable unit (NAU). (1) In SNA, a logical unit, a physical unit, or a system services control point. The NAU is the origin or the destination of information transmitted by the path control network. (2) See also logical unit, physical unit, system services control point (SSCP).

Network Control Program (NCP). (1) An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability. (2) See also Advanced Communications Function (ACF).

network management vector transport (NMVT). A management services request/response unit (RU) that flows over an active session between physical unit management services and control point management services (SSCP-PU session).

network resource. In ACF/VTAM®, a network component such as a local network control program, an SDLC data link, or a peripheral node.

network services procedure error (NSPE). A request unit that is sent by a system services control point (SSCP) to a logical unit (LU) when a procedure requested by that LU has failed.

NLS. National language support.

NMVT. Network management vector transport.

node. (1) In a network, a point at which one or more functional units connect channels or data circuits. (I) (2) In network topology, the point at an end of a branch. (T)

NPSI. X.25 NCP Packet Switching Interface.

NSPE. Network services procedure error.

O

object. The principal building block of object-oriented programs. Objects are software programming modules. Each object is a programming unit consisting of related data and methods.

object-oriented programming (OOP). A programming approach based on the concepts of data abstraction and inheritance. Unlike procedural programming techniques, object-oriented programming concentrates on the data objects that constitute the problem and how they are manipulated, not on how something is accomplished.

ODBC. Open Database Connectivity is a standardized set of API function calls that can be used to access data stored in both relational and non-relational DBMSs.

OIA. Operator information area.

OIC. Only-in-chain.

only-in-chain (OIC). A request unit (RU) for which the request header (RH) begin chain indicator and RH end chain indicator are both on.

OOP. object-oriented programming

open. (1) The function that connects a file to a program for processing. (2) Contrast with close.

open system. A system with specified standards, and that therefore can be readily connected to other systems that comply with the same standards.

operating system. Software that controls the execution of programs and that may provide services such as resource allocation, scheduling, input/output control, and data management. Although operating systems are predominantly software, partial hardware implementations are possible. (T)

operator information area (OIA). In the 3270 Information Display System, the area near the bottom of the display area where terminal or system status information is displayed.

option. A specification in a statement that may be used to influence the processing of the statement.

OS/2 operating system. IBM Operating System/2.

P

padding. A technique by which a receiving station controls the rate of transmission of a sending station to prevent overrun.

package. A program element that contains classes and interfaces.

packet. A sequence of binary digits, including data and control signals, that is transmitted and switched as a composite entity.

panel. A formatted display of information that appears on a display screen.

parallel port. (1) On a personal computer system, a port used to attach devices such as dot matrix printers and input/output units; it transmits data one byte at a time. (2) See also serial port.

parameter. (1) A variable that is given a constant value for a specified application and that may denote the application. (I) (A) (2) An item in a menu for which the user specifies a value or for which the system provides a value when the menu is interpreted. (3) Data passed between programs or procedures.

Pascal. A high-level, general purpose programming language, related to ALGOL. Programs written in Pascal are block structured, consisting of independent routines. They can run on different computers with little or no modification.

path. In a personal computer system, the logical relationship between directories.

PBM. Personal banking machine.

PC. Personal computer.

PC-ID. Workstation identifier.

PCB. Program control block.

PC/TCP. FTP Software's implementation of TCP/IP for systems running DOS and Windows. Now called PC/TCP Network Software version 5.0 and available from NetManage Inc..

PDA. Physical device address.

PDP. Problem determination procedure.

personal computer system. IBM Personal System/2 and also the various IBM Personal Computer system units, unless otherwise described.

Personal Identification Number (PIN) pad. A pad with twelve keys in a specific arrangement that display alphabetic and numeric characters that may be entered onto a financial transaction terminal. (T) (A)

physical device address (PDA). An address or set of addresses that identifies a particular device.

physical unit (PU). In SNA, the component that manages and monitors the resources, such as attached links and adjacent link stations, associated with a node, as requested by an SSCP via an SSCP-PU session. An SSCP starts a session with the physical unit to indirectly manage, through the PU, resources of the node such as attached links. This term applies to type 2.0, type 4, and type 5 nodes only.

PIN. Personal identification number.

plaintext. (1) Nonencrypted data. Synonymous with cleartext. (2) Synonym for clear data.

PLU. Primary logical unit.

PM. Presentation Manager® (in OS/2).

pointing device port. The IBM PS/2 port that allows attachment of various devices including pointing devices.

port. (1) An access point for data entry or exit. (2) A connector on a device to which cables for other devices such as display stations and printers are attached. (3) A specific communications end point within a host. A port is identified by a port number.

Post Telephone and Telegraph Administration (PTT). An organization, usually a government department, that provides communication common carrier services in countries other than the USA and Canada. Examples of PTTs are the Bundespost in Germany, and the Nippon Telephone and Telegraph Public Corporation in Japan.

PPC. Program to program communications.

Presentation Manager. A component of OS/2 that provides a complete graphics-based user interface, with pull-down windows, action bars, and layered menus.

primary logical unit (PLU). (1) In SNA, the logical unit (LU) that contains the primary half-session for a particular LU—LU session. (2) Contrast with secondary logical unit (SLU). (3) See also logical unit (LU).

problem determination procedure (PDP). A prescribed sequence of steps taken to identify the source of a problem.

process. (1) A unique, finite course of events defined by its purpose or by its effect, achieved under defined conditions. (2) Any operation or combination of operations on data. (3) A function being performed or waiting to be performed. (4) A program in operation.

processor. (1) In a computer, a functional unit that interprets and executes instructions. A processor consists of at least an instruction control unit and an arithmetic and logic unit. (T) (2) The functional unit that interprets and processes instructions.

profile. (1) In computer security, a description of the characteristics of an entity to which access is controlled. (2) Data that describes the significant characteristics of a user, a group of users, or one or more computer resources.

program. A sequence of instructions suitable for processing by a computer. Processing may include the use of an assembler, a compiler, an interpreter, or a translator to prepare the program for execution, and also to execute it. (I)

program control block (PCB). LANDP family shared-file server pointer related to a specific DBD.

Program temporary fix (PTF). A temporary solution or by-pass of a problem diagnosed by IBM as resulting from a defect in a current unaltered release of the program.

protocol. In SNA, the meanings of and the sequencing rules for requests and responses used for managing the network, transferring data, and synchronizing the states of network components.

PS/2. Personal System/2.

PTF. Program temporary fix.

PTT. Post Telephone and Telegraph Administration.

PU. Physical unit.

Q

QLLC. Qualified logical link control.

qualified logical link control (QLLC). An X.25 protocol that allows the transfer of data link control information between two adjoining systems network architecture (SNA) nodes that are connected through an X.25 packet-switching data network. The QLLC provides the qualifier "Q" bit in X.25 data packets to identify packets that carry logical link protocol information.

query. (1) A request for information from a file relying on specific conditions. (2) In the AS/400 system, the query management object that is used to define queries against relational data.

quiescing. The process of bringing a device or a system to a stop by rejection of new requests for work. (A)

R

RAM. Random access memory. (A)

random access memory (RAM). A storage device where data can be written and read.

RC. Return code.

RCMS. Remote change management services.

RDBMS. Relational database management system. A generic name for any relational database system such as DB2.

re-synchronization. Restarting the transmission of a function at the point where it was interrupted.

read-only memory (ROM). (1) A storage device where data, under normal conditions, can only be read. (T) (2) See also read-only storage (ROS).

read-only storage (ROS). (1) A storage device whose contents cannot be modified, except by a particular user, or when operating under particular conditions. (2) See also read-only memory (ROM).

record. (1) In programming languages, an aggregate that consists of data objects, possibly with different attributes, that usually have identifiers attached to them. In some programming languages, records are called structures. (I) (2) A set of data treated as a unit. (T)

(3) A set of one or more related data items grouped for processing.

remote attachment. A method of connecting two devices over a telecommunication line.

remote initial program load (remote IPL). A feature that permits a computer to receive its initial program from another computer, rather than from its own internal disk or diskette storage.

remote method invocation. A specific instance of the more general term RPC (remote procedure call). Remote method invocation (RMI) allows objects to be distributed over a network, that is, a Java program running on one computer can call the methods of an object running on another computer. RMI and java.net are the only 100% pure Java APIs for controlling Java objects in remote systems.

remote procedure call (RPC). A facility that a client uses to request the execution of a procedure call from a server. This facility includes a library of procedures and an external data representation.

REMS. Reader/encoder magnetic stripe.

request/response header (RH). In systems network architecture (SNA), control information preceding a request/response unit (RU) that specifies the type of RU and contains control information associated with the RU.

request/response unit (RU). In systems network architecture (SNA), a generic term for a request unit or a response unit.

resource. (1) Any of the data processing system elements needed to perform required operations, including storage, input/output units, one or more processing units, data, files, and programs. (T) (2) See also network resource.

retry. To resend data a prescribed number of times or until the data is received correctly.

return code (RC). (1) A code used to influence the execution of succeeding instructions. (A) (2) A value returned to a program to indicate the results of an operation requested by that program.

RH. Request/response header.

roll back. To remove changes that were made to database files under commitment control since the last commitment boundary.

RMI. Remote Method Invocation.

rollback. (1) A programmed return to a prior checkpoint. (A) (2) The process of restoring data changed by an application program or user to the state of its last commitment boundary. (3) In SQL, the process of restoring data changed by an application program or user to the state of its last commit point.

ROM. Read-only memory. (A)

ROS. Read-only storage.

router. (1) A computer that determines the path of network traffic flow. The path selection is made from several paths based on information obtained from specific protocols, algorithms that attempt to identify the shortest or best path, and other criteria such as metrics or protocol-specific destination addresses. (2) An attaching device that connects two LAN segments, which use similar or different architectures, at the reference model network layer. Contrast with bridge, gateway. (3) In OSI terminology, a function that determines a path by which an entity can be reached.

RPC. Remote procedure call.

RTR. Ready to Receive.

RU. Request/response unit.

S

SAM. Service availability manager.

SAP. Service access point.

SBCS. Single-byte character set.

scan code. A code generated by a keyboard.

SCS. Systems network architecture character string.

SDLC. Synchronous data link control.

secondary logical unit (SLU). (1) In systems network architecture (SNA), the logical unit (LU) that contains the secondary half-session for a particular LU-LU session. (2) Contrast with primary logical unit (PLU). (3) See also logical unit (LU).

SEQ. Sequential file.

sequential access. (1) The capability to enter data into a storage device or a data medium in the same

sequence as the data is ordered, or to obtain data in the same order as it has been entered. (T) (2) An access method in which records are read from, written to, or removed from a file based on the logical order of the records in the file. (3) Contrast with direct access.

serial port. (1) On personal computer systems, a port used to attach devices such as display devices, letter-quality printers, modems, plotters, and pointing devices such as light pens and mice; it transmits data one bit at a time. (2) See also parallel port.

serialization. Turning an object into a stream and back again.

server. (1) A functional unit that provides shared services to workstations over a network; for example, a file server, a print server, a mail server. (T) (2) In LANDP, a functional area that provides functions to LANDP workstations in a LANDP workgroup. (3) The computer that hosts the Web page that contains an applet. The .class files that make up the applet, and the HTML files that reference the applet reside on the server. When someone on the Internet connects to a web page that contains an applet, the server delivers the .class files over the Internet to the client that made the request. The server is also known as the originating host. (4) See also client, client workstation, and user. (5) In LANDP, a function provided by a server.

service access point (SAP). A logical point made available by a token-ring adapter where information can be received and transmitted.

service availability manager (SAM). Facility used by the shared-file server to provide fault-tolerant data access in an XLR environment.

servlet. Server-side program that executes on and adds function to a Web server. Java servlets allow for the creation of complicated, high-performance, cross-platform Web applications. They are highly extensible and flexible, making it easy to expand from from client or single-server applications to multi-tier applications.

session. (1) In systems network architecture (SNA), a logical connection between two network addressable units (NAU) that can be started, tailored to provide various protocols, and deactivated, as requested. (2) The time during which programs or devices can communicate with each other.

single-byte character set (SBCS). (1) A character set in which each character is represented by a one-byte

code. (2) Contrast with double-byte character set (DBCS).

SLU. Secondary logical unit.

SNA. Systems network architecture.

SNUF. Systems network architecture up-line facility.

socket. (1) An end-point for communication between processes or applications. (2) A pair consisting of TCP port and IP address.

SOM. Start-of-message code.

SPC, spc. Specification file.

specification file (SPC, spc). In LANDP, a file with the file extension .SPC. This file can be edited. It contains information for customization purposes.

SQL. Structured query language.

SSCP. System services control point.

start-of-message code (SOM). A character or group of characters transmitted by the polled terminal and indicating to other stations on the line that what follows are addresses of stations to receive the answering message.

storage. A functional unit into which data can be placed, where it can be retained, and from which it can be retrieved. (T)

stream. A continuous sequence of data elements being transmitted, or intended for transmission, in character or binary-digit form, using a defined format.

structured query language (SQL). An established set of statements used to manage information stored in a database. By using these statements, users can add, delete, or update information in a table, request information through a query, and display the results in a report.

subdirectory. A directory contained within another directory in a file system hierarchy.

synchronous. (1) About two or more processes that depend on the occurrence of a specific event such as common signal timing. (2) Occurring with a regular or predictable time relationship. (3) See also asynchronous.

synchronous data link control (SDLC). A discipline conforming to subsets of the Advanced Data Communication Control Procedures (ADCCP) of the American National Standards Institute (ANSI) and High-level Data Link Control (HDLC) of the International Organization for Standardization, for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or not-switched links. The configuration of the link connection may be point-to-point, multi-point, or loop. (I)

system diskette. (1) The diskette, either real or virtual, that contains your control program. (2) In personal computer systems, the diskette on which you have the operating system.

system distribution manager. A system that contains the files and programs required for product installation, and initiates or manages the installation process.

system services control point (SSCP). In systems network architecture (SNA), the focal point within an SNA network for managing the configuration, coordinating network operator and problem determination requests, and providing directory support and other session services for end users of the network.

systems network architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of networks.

systems network architecture character string (SCS). In systems network architecture (SNA), a character string composed of EBCDIC controls, optionally intermixed with end-user data, that is carried within a request/response unit (RU).

systems network architecture network (SNA network). In systems network architecture (SNA), the part of an application program network that conforms to the formats and protocols of SNA. It allows reliable transfer of data among end users and provides protocols for controlling the resources of various network configurations. The SNA network consists of network addressable units (NAU), boundary function components, and the path control network.

systems network architecture up-line facility (SNUF). The communications support that allows an AS/400 system to communicate with CICS/VS and IMS/VS application programs on a host computer.

T

takeover. In an XLR environment, the process by which a backup server assumes the role of the (failed) active. This involves backing out incomplete transactions, rebuilding indexes, and informing SAM of the new active workstation.

TCP/IP. Transmission Control Protocol/Internet Protocol.

terminal status line. Synonym for operator information area (OIA).

TH. Transmission header.

thin client. A client workstation that loads its operating system environment and applications across a network from a server. The degree of local processing power in a thin client can vary considerably depending on the implementation of the thin client concept.

The term thin client usually refers to a system that runs on a resource-constrained machine or that runs on a small operating system. These clients do not require local system administration, and they execute Java applications delivered over the network.

Time Sharing Option (TSO). An operating system option; for the System/370 system, the option provides interactive time sharing from remote terminals.

token-ring network. (1) A ring network that allows unidirectional data transmission between data stations by a token passing procedure, so that the transmitted data returns to the transmitting station. (T) (2) A network that uses a ring topology, where tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission.

trace. (1) A record of the execution of a computer program. It exhibits the sequences in which the instructions were executed. (A) (2) The process of recording the sequence in which the statements in a program are executed and, optionally, the values of the program variables used in the statements. (3) To record a series of events as they occur. (4) For data links, a record of the frames and bytes transmitted or received.

trace file. A file that contains a record of events that occur in a system.

trace function. A function used for problem determination.

trace log. A file in which trace events are recorded.

trace program. A computer program that performs a check on another computer program by exhibiting the sequence in which the instructions are executed and, usually, the results of executing the instructions. (I) (A)

trace routine. A routine that provides a historical record of specified events in the execution of a computer program. (A)

transaction. An exchange between a workstation and another device that accomplishes a particular action or result.

translation. Conversion of a code or codes to another code or codes according to a set of specifications.

transmission. The sending of data from one place for reception elsewhere. (A)

Notes:

1. Transmission implies only the sending of data; the data may or may not be received.
2. The term transmit is used to describe the sending of data in telecommunication operations. The terms move and transfer are used to describe movement of data in data processing operations.

transmission control (TC) layer. The layer within a half-session or session connector that synchronizes and paces session-level data traffic, checks session sequence numbers of requests, and enciphers and decipheres end-user data.

Transmission Control Protocol (TCP). A communications protocol used in the Internet and in any network that follows the US Department of Defense standards for inter-network protocol. TCP provides a reliable host-to-host protocol between hosts in packet-switched communications networks and in interconnected systems of such networks. It assumes that the Internet protocol is the underlying protocol.

Transmission Control Protocol/Internet Protocol (TCP/IP). A set of communication protocols that support peer-to-peer connectivity functions for both local and wide area networks.

transmission header (TH). In systems network architecture (SNA), control information, optionally followed by a basic information unit (BIU) or a BIU segment, that is created and used by path control to

route message units and to control their flow within the network.

transmission services (TS) profile. In systems network architecture (SNA), a specification in a session activation request (and, optionally in the responses) of transmission control (TC) protocols, such as session-level pacing and the usage of session-level requests, to be supported by a particular session. Each defined TS profile is identified by a number.

trap. An unprogrammed conditional jump to a specified address that is automatically activated by hardware. A recording is made of the location from which the jump occurred.

TRDLC. Token-ring data link control.

TS. Transmission services.

TSO. Time Sharing Option.

U

UDP. User Datagram Protocol.

UNBIND. (1) In systems network architecture (SNA), a request to deactivate a session between two logical units (LU). (2) Contrast with BIND.

user. (1) A function that uses the services provided by a server. A host can be a user and a server at the same time. (2) Any person or any thing that may issue or receive commands and messages to or from the information processing system. (T) (3) Any person who requires the services of a computing system. (4) See also client, client/server, client workstation, and server.

User Datagram Protocol (UDP). In TCP/IP, a packet-level protocol built directly on the Internet protocol layer. UDP is used for application-to-application programs between TCP/IP host systems.

user profile. In computer security, a description of a user that includes such information as user identification (ID), user name, password, access authority, and other attributes obtained at log-on.

user-written server. In LANDP, a server not supplied with a LANDP program, but developed by the customer.

utility program. (1) A computer program which supports computer processes; for example, a sort program. (T) (2) A program designed to perform an everyday task such as copying data from one storage device to another. (A)

V

validation. The checking of data for correctness, or compliance with applicable standards, rules, and conventions. (A)

VDM. Virtual DOS machine.

vector. A set of keyword=parameter statements that define configuration items. These items can correspond to both model and real configurations.

verify. To determine whether a transcription of data or other operation has been accomplished accurately. (A)

VFS. Virtual file system.

virtual DOS machine (VDM). A functional simulation of a machine running under DOS.

virtual file system (VFS). A remote file system that has been mounted so that it is accessible to the local user.

virtual machine (VM). A virtual data processing system that seems to be at the exclusive disposal of a particular user, but whose functions are accomplished by sharing the resources of a real data processing system. (T)

Virtual Telecommunications Access Method

(VTAM). A set of programs that maintain control of the communication between terminals and application programs running under Disk Operating System/Virtual Storage (DOS/VS), OS/VS1, and OS/VS2 operating systems.

VisualGen®. A high-level object-oriented programming language.

VM/CMS. Virtual machine/conversational monitor system.

VTAM. Virtual Telecommunications Access Method.

W

WAN. Wide area network.

wide area network (WAN). A network that provides communication services to a geographical area larger than that served by a local area network.

WebSphere™. A comprehensive solution to build, deploy, and manage e-business Web sites. WebSphere is the cornerstone of IBM's overall Web strategy. The Websphere product line provides companies with an open, standards-based, Web server deployment platform, together with Web site development and management and management tools to help accelerate the process of moving to e-business.

window. A division of a screen where one of several programs being run concurrently can display information.

workgroup. In LANDP, the logical connection of LANDP for DOS, LANDP for OS/2, LANDP for Windows NT, and LANDP for AIX workstations through the LANDP client/server mechanism, which is available with each LANDP program.

Workspace On-Demand. (1) A set of management utilities that enables OS/2 Warp Server to remotely load a thin client operating system, known as Workspace On-Demand client, into a client workstation across a LAN. (2) The client workstation component of Workspace On-Demand, which is loaded into a client workstation from a server machine running OS/2 Warp Server and Workspace On-Demand Server.

Workspace On-Demand Server. A server, running OS/2 Warp Server and Workspace On-Demand, that is used to boot client workstations.

workstation. (1) A functional unit at which a user works. (2) In LANDP, personal computer system in a local area network (LAN).

wrapper. A language binding.

X

X.25. A CCITT recommendation that defines the physical level (physical layer), link level (data link layer), and packet level (network layer) of the open systems inter-connection (OSI) reference model. An X.25 network is an interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) operating in the packet mode, and connected to public data networks by dedicated circuits. X.25 networks use the connection-mode network service.

X.25 NCP Packet Switching Interface. An IBM-licensed program that allows systems network architecture (SNA) users to communicate over packet switched data networks that have interfaces complying with Recommendation X.25 (Geneva 1980) of the International Telegraph and Telephone Consultative Committee (CCITT). It allows SNA programs to communicate with SNA equipment or with non-SNA equipment over such networks.

XID. Exchange identification.

XLR. External logging replicator.

XOR. Logical operation exclusive-or.

Numerics

4700 Processor. IBM Finance Communication System 4701 Controller Model 3 and IBM 4702 Branch Automation Processor, unless otherwise described.

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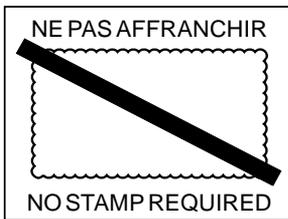
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