# Contents

**About this information** ........................................... v  
Service updates and support information ................................ v  
Highlighting conventions ............................................. v  
How to send your comments .......................................... vi  

**Chapter 1. IMS Tools Common Services**  
Overview ........................................................................ 1  
IMS Tools Common Services overview ................................ 1  
IMS Tools Common Services modules ................................ 1  
IMS Tools Common Services documentation and updates ........ 1  
Accessibility features ................................................... 2  
Summary of changes ..................................................... 2  

**Chapter 2. IMS Tools Generic Exits** ................................... 5  
Guidelines for using IMS Tools Generic Exits ..................... 5  
Configuring the exit routines in IMS Tools Generic Exits ........ 7  
Generic Logger exit usage .............................................. 7  
  Generic Logger exit overview ...................................... 7  
  Generic Logger exit definitions .................................. 9  
  Global processing parameters .................................. 11  
Generic Logger exit messages ........................................ 13  
Generic Logger exit user abend codes ............................... 17  
Generic Partner exit usage ............................................ 18  
  Generic Partner exit overview .................................. 18  
  Generic Partner exit definitions ................................ 20  
  Global processing parameters ................................ 21  
Generic Partner exit messages ....................................... 23  
Generic Partner exit user abend codes ............................. 26  
Generic MSC exit usage .............................................. 27  
  Generic MSC exit overview .................................... 27  
  Generic MSC exit definitions .................................. 29  
  Global processing parameters ................................ 30  
Generic MSC exit messages .......................................... 31  
Generic MSC exit user abend codes .................................. 35  
Generic QSN exit usage ............................................... 36  
  Generic QSN exit overview .................................... 36  
  Generic QSN exit definitions .................................. 38  
  Global processing parameters ................................ 39  
Generic QSN exit messages .......................................... 40  
Generic QSN exit user abend codes .................................. 43  

**Chapter 3. IMS Tools Online System Interface** ....................... 45  
Guidelines for using IMS Tools Online System Interface ........ 45  
Configuring IMS Tools Online System Interface .................. 46  
IMS Tools Online System Interface messages .................... 46  
  Return and reason codes for client exception processing .......... 46  
IMS Tools Online System Interface abend codes ................. 57  

**Chapter 4. Scrub utility** .................................................. 59  
Scrubbing sensitive data from IMS log records .................... 59  
  IMS log record types that are scrubbed ....................... 60  
  Scrub JCL reference ............................................... 61  
  Scrub log information report .................................... 62  
  Scrub commands .................................................... 64  
    SCRUB command ................................................ 64  
    REPORT command ............................................... 65  
    CODES command ............................................... 65  
    START and STOP commands .................................. 66  
    ZONE command ................................................ 67  
Notices ........................................................................... 69  
  Trademarks ............................................................ 70  
  Privacy policy considerations .................................. 71  
Index ............................................................................. 73  

© Copyright IBM Corp. 2001, 2014
About this information

IBM® Tools Base IMS™ Tools Common Services for z/OS® (also referred to as IMS Tools Common Services) is a collection of support modules that provide common functionality for use by IMS Tools products.

These topics provide instructions for installing, configuring, and using IMS Tools common services components.

These topics are designed to help database administrators, system programmers, application programmers, and system operators perform the following tasks:

- Plan for the installation of IMS Tools products
- Use IMS Tools products
- Diagnose and recover from system problems

To use these topics, you should have a working knowledge of:

- The z/OS operating system
- ISPF
- SMP/E

Specific changes since the previous edition of this book are indicated by a vertical bar (|) to the left of a change. Editorial changes that have no technical significance are not noted.

Always check the IBM DB2® and IMS Tools library page for the most current version of this publication:


Service updates and support information

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


Highlighting conventions

This information uses the following highlighting conventions:

- **Boldface** type indicates commands or user interface controls such as names of fields, folders, icons, or menu choices.
- **Monospace** type indicates examples of text that you enter exactly as shown.
- **Italic** type indicates variables that you should replace with a value, to indicate the titles of other publication, and to emphasize significant terms.
How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other IMS Sysplex Manager documentation, use either of the following options:

- Use the online reader comment form, which is located at:
  www.ibm.com/software/data/ref/
- Send your comments by e-mail to comments@us.ibm.com. Be sure to include the name of the book, the part number of the book, the version of IMS Sysplex Manager, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).
Chapter 1. IMS Tools Common Services overview

IBM Tools Base IMS Tools Common Services for z/OS (also referred to as IMS Tools Common Services) is a collection of support modules that provide common functionality for use by IMS Tools.

The topic in this section provides you with an overview of the IMS Tools Common Services.

IMS Tools Common Services overview
IBM Tools Base IMS Tools Common Services for z/OS (also referred to as IMS Tools Common Services) is a collection of support modules that provide common functionality for use by IMS Tools.

Topics:
- “IMS Tools Common Services modules”
- “IMS Tools Common Services documentation and updates”
- “Accessibility features” on page 2
- “Summary of changes” on page 2

IMS Tools Common Services modules
IMS Tools Common Services consists of the Generic Exits and the Tools Online System Interface.

IMS Tools Generic Exits
The IMS Tools Generic Exits are a collection of exit routines that provide the ability to call multiple exit routines from a single exit point in an IMS environment.

Tools Online System Interface (TOSI)
TOSI is a command interface that allows IMS Tools to interface with all supported versions of IMS.

IMS Tools Common Services documentation and updates
This topic explains where to find DB2 and IMS Tools information on the Web, and explains how to receive information updates automatically.

IMS Tools Common Services information on the Web
The DB2 and IMS Tools Product publications Web page provides current product documentation that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following Web page:

http://www.ibm.com/software/data/db2imstools/imstools-library.html

You can also access documentation for many DB2 for z/OS and IMS Tools from IBM Knowledge Center:

http://www.ibm.com/support/knowledgecenter/
IBM Redbooks® publications that cover DB2 and IMS Tools are available from the following Web page:

http://www.redbooks.ibm.com

The Data Management Tools Solutions Web site shows how IBM solutions can help IT organizations maximize their investment in DB2 and IMS databases while staying ahead of today’s top data management challenges:


Receiving documentation updates automatically

To automatically receive a weekly e-mail that notifies you when new technote documents are released, when existing product documentation is updated, and when new product documentation is available, you can register with the IBM My Support service. You can customize the service so that you receive information about only those IBM products that you specify.

To register with the My Support service:
2. Enter your IBM ID and password, or create one by clicking register now.
3. When the My Support page is displayed, click add products to select those products that you want to receive information updates about. The DB2 and IMS Tools category is located under Software > Data and Information Management > Database Tools & Utilities.
4. Click Subscribe to email to specify the types of updates that you would like to receive.
5. Click Update to save your profile.

Accessibility features

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use a software product successfully.

The major accessibility features in IMS Tools Common Services enable users to:
• Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
• Customize display attributes such as color, contrast, and font size.
• Operate specific or equivalent features by using only the keyboard. Refer to the following publications for information about accessing ISPF interfaces:
  – z/OS ISPF User’s Guide, Volume 1
  – z/OS TSO/E Primer
  – z/OS TSO/E User’s Guide

These guides describe how to use ISPF, including the use of keyboard shortcuts or function keys (PF keys), include the default settings for the PF keys, and explain how to modify their functions.

Summary of changes

This topic summarizes the technical changes for this edition.
New and changed information is indicated by a vertical bar (|) to the left of a change. Editorial changes that have no technical significance are not noted.

**SC19-4371-00**
Information about configuring IMS Tools Common Services is removed. The configuration information is now available in *IBM Tools Base for z/OS Configuration for IMS* (SC19-4370).

Information about the IBM Scrub utility is now provided in Chapter 4, “Scrub utility,” on page 59.

**SC19-3767-00**
Added the RACFCHK PROCLIB keyword, which specifies whether IMS type-1 commands can run without authorization.

Added the following messages: "FOI501E" on page 50, "FOI505E" on page 50, "FOI525I" on page 52, "FOI526I" on page 52, "FOI527E" on page 52, "FOI534E" on page 53, "FOI573I" on page 56.

Updated the following messages: "FOI100I" on page 48, "FOI531W" on page 52, "FOI532E" on page 52.

**SC19-3266-00**
Updated message FOI210I.

Added a new message FOI533I.

Corrected the IMS Database Recover Facility: Extended Functions exit name to IROPPPUE.
Chapter 2. IMS Tools Generic Exits

The IMS Tools Generic Exits are a collection of exit routines that provide the ability to call multiple exit routines from a single exit point in an IMS environment.

Information about the IMS Tools Generic Exits is provided in the following topics:

Guidelines for using IMS Tools Generic Exits

The IMS Tools Generic Exits are a collection of exit routines that provide the ability to call multiple exit routines from a single exit point in an IMS environment.

The IMS Tools Generic Exits are delivered in the IBM Tools Base for z/OS and is a prerequisite for multiple IMS tools. The IMS Tools Generic Exits are shared with multiple IMS tools and contains the common code components that are listed in the following table.

Table 1. IMS Tools Generic Exits common code components and their product prefixes

<table>
<thead>
<tr>
<th>Component name</th>
<th>Product prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic Logger exit</td>
<td>GLX</td>
</tr>
<tr>
<td>Generic Partner exit</td>
<td>GPR</td>
</tr>
<tr>
<td>Generic MSC exit (Generic Transaction Manager and Multiple Systems Coupling Message Routing and Control User exit)</td>
<td>GEX</td>
</tr>
<tr>
<td>Generic QSN exit (Generic Queue Space Notification exit)</td>
<td>GEXQ</td>
</tr>
</tbody>
</table>

The exits that are contained in the Tools Base supersedes and replaces all previous versions. Any IMS tools product that uses the generic exits contain a REQ(HAHN110), which signals to SMP/E that this FMID must already be installed, or that its installation is required at the same time the IMS tool product is installed.

Always refer to the appropriate Program Directory for any IMS tools product to determine the prerequisites for installing and operating the product.

Exit control flow

During the initialization process, IMS calls the IMS Tools Generic Exits. The generic exits then call other exits that are defined in their PROCLIB members.

The exit control flow during IMS initialization is summarized in the following figure:
For example, to configure IMS Tools Online System Interface (TOSI), you must specify FOIPPUE0 in the Generic Partner exit (GPR) PROCLIB member. When the Generic Partner exit is called during the IMS initialization process, the Generic Partner exit calls the FOIPPUE0 exit, and TOSI is initialized.

**IMS Tools Generic Exits activation overview**

The following steps describe how to enable the IMS Tools Generic Exits:

1. Allocate `smphlq.SGLXLOAD` to IMS control region `/STEPLIB`.
2. APF-authorize `smphlq.SGLXLOAD`.
3. Configure the Generic Partner exit PROCLIB to point to all DFSPPUE0 exits in your IMS environment.
4. Configure the Generic Logger exit PROCLIB to point to all DFSFLGX0 exits in your IMS environment.
5. Configure the Generic MSC exit PROCLIB to point to all DFSMSCE0 exits in your IMS environment.
6. Configure the Generic QSN exit PROCLIB to point to all DFSQSSP0 exits in your IMS environment.
7. Restart IMS.

**Disabling specific generic exits**

Depending on which IMS tools products that you use, you might not need to use all of the generic exits in the Tools Generic exits common code. To disable a generic exit, do not configure the required PROCLIB member for that particular generic exit.

During IMS initialization, if a particular PROCLIB member is not found, that generic exit is disabled.

**Important:** Before you disable a generic exit, ensure that the exit is not being used by another IMS tools product. If you disable a generic exit that is being used by another IMS tools product, that tool will not be able to operate.
Migration considerations for IMS Tools Generic Exits

If you are using IMS Tools Generic Exits in an environment containing multiple IMS tools products at mixed version and release levels, you must always install and run the highest level of IMS Tools Generic Exits that is available.

The latest version of the IMS Tools Generic Exits is fully compatible with prior releases of IMS Tools products and common code.

Configuring the exit routines in IMS Tools Generic Exits

Information about configuring the exit routines in IMS Tools Generic Exits and other Tools Base components for IMS is provided in IBM Tools Base for z/OS Configuration for IMS.

You can also download a PDF version of this information from the IMS Tools Product Documentation page.

Generic Logger exit usage

The IMS Tools Generic Logger exit (product prefix GLX) enables multiple copies of the IMS logger exit routine (DFSFLGX0) to exist and to be driven within a single IMS environment. The Generic Logger exit drives other logger exit routines.

Topics:
- "Generic Logger exit overview"
- "Generic Logger exit definitions" on page 9
- "Global processing parameters" on page 11

Generic Logger exit overview

The IMS Tools Generic Logger exit (product prefix GLX) enables multiple copies of the IMS logger exit routine (DFSFLGX0) to exist and to be driven within a single IMS environment. The Generic Logger exit drives other logger exit routines.

The Generic Logger exit can be used with several IMS Tools products to perform product initialization and log record processing. You can also have your own logger exit routine.

When you install the Generic Logger exit, you can use multiple logger exit routines that are named DFSFLGX0 for an online environment. For a batch environment, you must use unique logger exit routine names, and the name cannot be DFSFLGX0.

The Generic Logger exit has its own runtime libraries and installation process. It calls other logger exit routines during initialization, buffer write, and termination processing so that each function can perform specific processing.

The Generic Logger exit is designed to operate on any hardware and software configuration that supports the required versions of IMS. For detailed specifications, refer to the appropriate Program Directory for the IMS Tool that you are using.
Exit control flow

During the initialization process, IMS calls the IMS Tools Generic Exits. The generic exits then call other exits that are defined in their PROCLIB members.

The exit control flow during IMS initialization is summarized in the following figure:

![Exit control flow diagram](image)

For example, to configure IMS Sysplex Manager, you must specify GJEFLGX0 in the Generic Logger exit (GLX) PROCLIB member. When GJEFLGX0 is added to the GLX PROCLIB member, the Generic Logger exit calls GJEFLGX0 after the IMS initialization process calls the Generic Logger exit.

Coexistence with other logger exits

The Generic Logger exit drives all other logger exits under each IMS control region. In the //STEPLIB concatenation, placing the Generic exit routine DFSFLGX0 (alias GLXILGX0) as the first copy of the DFSFLGX0 is recommended.

If the Generic Logger exit cannot be at the beginning in the //STEPLIB concatenation because of another exit that must be first, the Generic Logger exit can be placed anywhere in the //STEPLIB under the following condition:

- The DFSFLGX0 that is before the Generic Logger exit must pass control to the Generic Logger exit.

The Generic Logger exit can then call the remaining logger exits that have been defined in the exit list.

**Important:** Ensure that you do not include the DFSFLGX0 in front of the Generic Logger exit in the exit list. Otherwise, a recursive call occurs, which causes a loop.

An exit can determine if it was called by the Generic Logger exit by checking for a literal, as shown in the following code. The literal is pointed by the register 14 + x'4'.

```assembly
BALR R14,R15           CALL USER EXIT
B     PASTID         SKIP ID
DC     CL16'GENERIC EXITS'   EYECATCHER
PASTID   DS   0H
```
Generic Logger exit activation

To activate this exit, set up the required member that is described in "Generic Logger exit definitions." If you do not need this exit, do not configure it.

If no exit definitions are found, one of the following conditions occurs:
- If the Generic Logger exit is NOT first in //STEPLIB, the exit returns to its caller without passing control to the next DFSFLGX0 in the //STEPLIB stack.
- If the Generic Logger exit is first in //STEPLIB, the exit transfers control to the next DFSFLGX0 in the //STEPLIB stack and then removes itself from the IMS control region. The Generic Logger exit is not called by IMS again.

In both of the previous conditions, the Generic Logger exit is disabled.

Important: Before you disable a generic exit, ensure that the exit is not being used by another IMS tools product. If you disable a generic exit that is being used by another IMS tools product, that tool will not be able to operate.

Generic Logger exit definitions

The Generic Logger exit requires you to define a set of logger exit routines. If these definitions are not set, the Generic Logger exit issues an error message and continues processing based on the setting of the INITFAIL parameter. No logger exit routine can be invoked unless a set of logger exit routines have been defined.

Generic Logger exit supports the following two formats for the logger exit routine list:
- A PROCLIB member that contains BPE-style control card input. This format is recommended in online environments.
- A load module format that you create by assembling and link editing definition macros. This format is recommended in batch environments so that existing JCL does not require changes.

By supporting both formats, the Generic Logger exit provides the maximum flexibility in both the batch and online environments. In addition, two naming patterns for the definitions are supported so that you can use both IMS-specific definitions and global definitions for cloned IMS environments:
- For global definitions that are not specific to any IMS system, the name is GLXEXIT0.
- For IMS-specific definitions, the name follows the pattern: GLxxxx0, where xxxx is the IMS ID.

Both the PROCLIB member and load library member names use the same pattern.

When Generic Logger exit initializes, the following search order is used to locate the exit routine definitions:
1. PROCLIB member GLxxxx0
2. Load module member GLxxxx0
3. PROCLIB member GLXEXIT0
4. Load module member GLXEXIT0
The first member that is located is used for the exit routine definitions. No other members are processed.

If no exit routine definition member is found or if the member is found but contains no definitions, the Generic Logger exit issues messages and continues processing based on the setting of the INITFAIL parameter.

**PROCLIB member definitions**
If you choose to define logger exit routines by using a PROCLIB member, each exit routine must be defined by using a BPE-format control card.

The order of the statements in the member determines the order in which the exit routines are called. This member can be in any data set within the //PROCLIB DD concatenation in the IMS control region JCL.

The following example shows the format of the control card:

```plaintext
EXITDEF(TYPE(LOGR) EXITNAME(exit-name) LOADLIB(load-library))
```

The following rules apply to the control card:

- Each exit routine that is to be called must be specified in a separate EXITDEF() statement.
- The TYPE() keyword must be LOGR for this feature.
- The name of the exit routine is specified with the EXITNAME() keyword and must match a member name in the specified load library.
- The load library in which the exit routine resides is specified with the LOADLIB() keyword and must specify a cataloged load library that is APF-authorized and to which the IMS control region has access.

The Generic Logger exit tests the load library to ensure that it is APF-authorized. If the load library is not APF-authorized, the exit routine is not called, and error messages are issued. Processing continues based on the global statement specification.

The following sample shows a Generic Logger exit definition member for an IMS control region that includes IMS Sysplex Manager and a customized logger exit routine:

```plaintext
EXITDEF(TYPE(LOGR) EXITNAME(GJEIINT0) LOADLIB(IMSSM.LOADLIB))
EXITDEF(TYPE(LOGR) EXITNAME(DFSFLGX0) LOADLIB(USER.LOADLIB))
```

When the Generic Logger exit initializes, it loads each exit routine and calls it for initialization, in the order that is specified in the member. During normal processing, the Generic Logger exit calls each exit routine, in order, for buffer write processing. During termination, the Generic Logger exit calls each exit routine, in order, for termination processing.

**LOAD module definitions**
If you use the load module method for defining exit routine definitions, you can create an input member by using the GLXIEXIT macro.

You then assemble and link edit the member, and place it in a load library that can be found in the //JOBLIB or //STEPLIB concatenation. The order of the statements in this member determines the order in which the exit routines are called.

The following example shows the format of the macro definition:
The following rules apply to the macro definition:

- The load module must be linked as a non-reentrant module.
- If the load module is GLXEXIT0 (non-IMS specific, global exit definitions), the IMSID= keyword must be omitted.
- Each exit routine that is to be called must be specified in a separate GLXIEXIT statement.
- The TYPE= keyword must be LOGR for this feature.
- The name of the exit routine is specified with the EXITNAME= keyword and must match a member name in the specified load library.
- The load library in which the exit routine resides is specified with the LOADLIB= keyword and must specify a cataloged load library that is APF-authorized and to which the IMS control region has access.

The following sample shows a Generic Logger exit global definition load module GLXEXIT0 for a cloned IMS environment that includes IMS Sysplex Manager and a customized logger exit routine:

```plaintext
GLXIEXIT FUNC=BEGIN
EXIT1 GLXIEXIT FUNC=DEFINE, TYPE=LOGR, EXITNAME=GJEIINT0, LOADLIB=IMSSM.LOADLIB
EXIT2 GLXIEXIT FUNC=DEFINE, TYPE=LOGR, EXITNAME=DFSFLGX0, LOADLIB=USER.LOADLIB
GLXIEXIT FUNC=END
```

The following sample shows a Generic Logger exit IMS-specific exit definition load module GLXIMS10 for an IMS control region with an IMSid of IMS1 that includes IMS Sysplex Manager, a vendor-supplied logger exit routine, and a customized logger exit routine:

```plaintext
GLXIEXIT FUNC=BEGIN, IMSID=IMS1
EXIT1 GLXIEXIT FUNC=DEFINE, TYPE=LOGR, EXITNAME=GJEIINT0, LOADLIB=IMSSM.LOADLIB
EXIT2 GLXIEXIT FUNC=DEFINE, TYPE=LOGR, EXITNAME=DFSFLGX0, LOADLIB=VENDOR.LOADLIB
EXIT3 GLXIEXIT FUNC=DEFINE, TYPE=LOGR, EXITNAME=DFSFLGX0, LOADLIB=USER.LOADLIB
GLXIEXIT FUNC=END
```

When the Generic Logger exit initializes, it loads each exit routine and calls it for initialization, in the order that is specified in the member. During normal processing, the Generic Logger exit calls each exit routine, in order, for buffer write processing. During termination, the Generic Logger exit calls each exit routine, in order, for termination processing.

**Global processing parameters**

In addition to defining the logger exit routines, you can optionally use global processing parameters to control the Generic Logger exit processing in error situations. You specify these parameters in the PROCLIB member or in the load module named GLXOPT0.

Three situations can occur in which you can drive the Generic Logger exit processing:

- When the Generic Logger exit is initializing and setup errors are detected, such as a missing exit routine definition member, control card errors, or when no exit routines are defined
• When processing an exit routine definition during initialization and the exit routine cannot be located or loaded, or the load library is not APF-authorized
• During invocation of an exit routine, an error occurs in the exit routine that causes an abend

In any of these cases, you can use a global parameter to make the Generic Logger exit generate an abend for the job or perform recovery processing and continue.

The following search order is used to locate the global options:
1. PROCLIB member GLXOPT0
2. Load module member GLXOPT0

If no global options definition member is found, or the member is found and contains no definitions or contains invalid definitions, the IMS Generic Logger exit routine issues warning messages, sets the options to default values, and continues processing.

The following example shows the format of the global parameter when it is specified in the PROCLIB member:
GLOBAL(INITFAIL(ABEND | WARNING)
       EXITINIT(ABEND | TERMEXIT)
       EXITPROC(ABEND | TERMEXIT))

The following example shows the format of the global parameter when it is specified in the load module:
GLXIGLBL INITFAIL=ABEND | WARNING,
       EXITINIT=ABEND | TERMEXIT,
       EXITPROC=ABEND | TERMEXIT

**INITFAIL parameter**
The INITFAIL parameter drives processing when an error occurs while attempting to initialize the Generic Logger exit.

The following errors can occur:
• The Generic Logger exit copy of DFSFLGX0 was not the first copy of DFSFLGX0 invoked.
• No exit definitions were found.
• Errors were detected in the exit definitions.

You can set the INITFAIL parameter to either of the following settings:

**INITFAIL=ABEND**
This setting causes the Generic Logger exit to issue an error message and return to IMS with RC=12.

**INITFAIL=WARNING**
This setting causes the Generic Logger exit to issue warning messages and return control to IMS with RC=0 to allow it to continue processing. In this case, no logger exit routines are invoked during IMS processing.

**EXITINIT parameter**
The EXITINIT parameter drives processing when an error occurs while attempting to locate or load the exit routine during the Generic Logger exit initialization or if the load library is not APF-authorized.
You can set the EXITINIT parameter to either of the following settings:

**EXITINIT=ABEND**
This setting causes the Generic Logger exit to issue an error message and return to IMS with RC=12.

**EXITINIT=TERMEXIT**
This setting causes the Generic Logger exit to issue an error message for the exit routine, set the exit routine to inactive, and continue processing. No further action is taken for inactive exit routines.

EXITINIT=TERMEXIT is the default setting.

**EXITPROC parameter**
The EXITPROC parameter drives the processing when an error occurs within the exit routine while it is processing.

You can set the EXITPROC parameter to either of the following settings:

**EXITPROC=ABEND**
This setting causes Generic Logger exit to issue an error message and return to IMS with RC=12.

**EXITPROC=TERMEXIT**
This setting causes the Generic Logger exit to issue an error message for the exit routine, set the exit routine to inactive, and continue processing. No further action is taken for inactive exit routines.

EXITPROC=TERMEXIT is the default setting.

---

**Generic Logger exit messages**
The IMS Tools Generic Logger exit issues messages that can help you understand the state of the exit and help you resolve errors.

Errors that are encountered while processing data on the ISPF user interface panels are indicated through a short message that is displayed on the top right corner of the panel. To obtain more information about the error, press PF1.

The last character of each message is one of the following severity codes:

- **A** messages indicate action is required by the user before processing can continue.
- **E** messages indicate an error condition in which a requested function did not complete successfully. The condition might or might not require action.
- **I** messages are informational only.
- **W** messages warn the user of a possible error condition.

For each message, the following accompanying information is provided where applicable:

**Explanation:**
This information explains what the message text means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
This information explains what the system will do next.
User Response:
This information describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

GLX2901E UNABLE TO LOCATE IMS SSCD
Explanation: During initialization processing, the Generic Logger exit routine was unable to locate the IMS SSCD control block.
System action: The IMS Control Region abnormally stops.
User response: Review the IMS Control Region job log for other messages that are associated with the abend. Retain any diagnostic information and contact IBM Software Support.

GLX2902E IMS RELEASE NOT SUPPORTED
Explanation: During Generic Logger exit routine initialization processing, it was determined that the IMS release that is associated with the IMS Control Region is not supported by the Generic Logger exit routine.
System action: The IMS Control Region abnormally stops.
User response: Review the Generic Logger exit routine documentation for a list of supported IMS releases.

GLX2903E LOAD FAILED FOR GLX MODULE name
Explanation: The Generic Logger exit routine cannot locate the module that is specified in name.
System action: The IMS Control Region abnormally stops.
User response: Ensure that the Generic Logger exit routine has been correctly installed in the //JOBLIB or //STEPLIB.

GLX2904E BATCH ENVIRONMENT EXPECTED BUT NOT PRESENT
Explanation: The Generic Logger exit routine has determined that it should be running in a batch environment, but a batch environment is not present. This is an internal processing error.
System action: The IMS Control Region abnormally stops.
User response: Retain any diagnostic information and contact IBM Software Support.

GLX2905E GENERIC LOGGER EXIT INITIALIZATION FAILED
Explanation: The Generic Logger exit routine has failed to initialize.
System action: Processing continues, based on the INITFAIL keyword setting.
User response: Review the IMS Control Region job log for other messages that are associated with the error.

GLX2906E INVALID CALL TYPE FOR DFSFLGX0
Explanation: The Generic Logger exit routine has detected an invalid call to the initialization routine (GLXIINTX). This is an internal processing error.
System action: The IMS Control Region abnormally stops.
User response: Ensure that the Generic Logger exit routine has been installed correctly in the //JOBLIB or //STEPLIB. Retain any diagnostic information and contact IBM Software Support.

GLX2907E DUPLICATE INITIALIZATION CALL FOR DFSFLGX0
Explanation: The Generic Logger exit routine has detected a duplicate initialization call to the initialization routine (GLXIINTX). This is an internal processing error.
System action: The IMS Control Region abnormally stops.
User response: Ensure that the Generic Logger exit routine has been correctly installed in the //JOBLIB or //STEPLIB.

GLX2908E MVS NAME TOKEN SERVICE FAILED FOR name, RC=nnnn, RSN=nnnn
Explanation: During the initialization process, the Generic Logger exit routine issued a request to obtain a name token from z/OS, but the request failed with the return code and reason code that are included in the error message.
System action: Processing continues, based on the INITFAIL keyword setting.
User response: Retain any diagnostic information and contact IBM Software Support.

GLX2909E ERROR action PROCLIB MEMBER member, REASON=reason
Explanation: An error occurred while processing the Generic Logger exit routine PROCLIB member member that was specified. The action taken might be
READING or PARSING. The possible reasons for the error are:

- NOSTG (no storage available to perform read)
- OPENFAIL (open failed for IMS PROCLIB data set)
- NOTFIXED (IMS PROCLIB data set format is not FIXED)
- READFAIL (read failed for IMS PROCLIB data set)
- NOTFOUND (specified PROCLIB member cannot be found)

Invalid input data is detected by the parsing module and is assigned to the following reason codes:

X'40'
An invalid keyword was detected in the input data.

X'44'
An unknown positional parameter was encountered in the input.

X'48'
A keyword parameter was specified with an equal sign (KEYWORD=), but the keyword was defined as having a sublist of values. Sublists can be specified only in parentheses and an equal sign can be used only if a keyword has a single value.

X'4C'
The input ended before the entire sublist or keyword was parsed.

X'50'
A keyword was encountered (KEYWORD or KEYWORD=), but a value was expected.

X'54'
An input number that was being parsed was out of the range that is allowed for its output field length. For decimal numbers, the numbers must be less than or equal to 255 for 1-byte fields, 65535 for 2-byte fields, 16777215 for 3-byte fields, and 2147483647 for 4-byte fields. For hex numbers, the number cannot have digits that are more than two times the number of bytes in the output field.

X'58'
A parameter value that is defined as decimal contains non-decimal digits.

X'5C'
A parameter value that is defined as hex contains non-hex digits.

X'60'
A parameter value that is defined as a keyvalue parameter has an unknown key value.

X'64'
A keyword parameter is present multiple times, but it is not defined as being repeatable.

X'68'
A parameter that is defined with REQUIRED=YES was not found in the input data.
System action: The IMS Control Region abnormally stops.

User response: Ensure that the exit definition module exists in the //STEPLIB or //JOBLIB concatenation.

GLX2913W  NO EXIT DEFINITION FOUND
Explanation: No logger exit definition was found by Generic Logger exit.
System action: Generic Logger exit will unregister itself from IMS and search for next logger exit in //STEPLIB or //JOBLIB. If one is found, control is passed to it.
User response: Make sure that you do not have more than one Logger exit in your IMS environment. If you have more than one Logger exit, you must adjust your configuration to have Generic Logger exit drive all existing Logger exits.

GLX2915E  ERROR LOADING EXIT name FROM LOADLIB=name
Explanation: An error occurred when the Generic Logger exit routine attempted to load the exit routine from the load library name. The exit routine might not exist in the library, or the library is not APF-authorized.
System action: Processing continues, based on the EXITINIT keyword setting.
User response: Ensure that the exit routine exists and that the load library is APF-authorized.

GLX2917W  KEYWORD=name IS NOT VALID. DEFAULT VALUE WILL BE USED
Explanation: The Generic Logger exit routine found that an invalid value was specified for the keyword.
System action: Processing continues. The default value is set for the keyword.
User response: Correct the error and resubmit the job.

GLX2918E  DYNAMIC ALLOCATION FAILED FOR name RC=nnnn, RSN=nnnn, INFO=nnnn
Explanation: The Generic Logger exit routine failed to dynamically allocate the load library. The dynamic allocation return code RC=nnnn and reason code RSN=nnnn are included in the message.
System action: Processing continues based on the EXITINIT keyword setting.
User response: Check the SVC 99 return code and reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

GLX2919E  DYNAMIC DEALLOCATION FAILED FOR name RC=nnnn, RSN=nnnn, INFO=nnnn
Explanation: The Generic Logger exit routine failed to dynamically deallocate the load library. The dynamic allocation return code RC=nnnn and reason code RSN=nnnn are included in the message.
System action: Processing continues, based on the EXITINIT keyword setting.
User response: Check the SVC 99 return code and reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

GLX2920E  name IS NOT APF-AUTHORIZED. INIT FOR EXIT name FAILED.
Explanation: The load library name is not APF-authorized. Initialization for the logger exit routine name failed.
System action: The IMS Control Region abnormally stops.
User response: Ensure that the load library is APF-authorized and resubmit the job.

GLX2921E  GLX DRIVER GLXILGXX NOT FOUND
Explanation: The Generic Logger exit routine driver GLXILGXX was not found.
System action: The IMS Control Region abnormally stops.
User response: Retain any diagnostic information and contact IBM Software Support.

GLX2922E  IMS GENERIC LOGGER ESTAE CREATE FAILED, RC=####
Explanation: The Generic Logger exit routine failed to create its ESTAE recovery environment.
System action: The IMS Control Region abnormally stops.
User response: Retain any diagnostic information and contact IBM Software Support.

GLX2923E  IMS GENERIC LOGGER ESTAE DELETE FAILED
Explanation: The Generic Logger exit routine failed to delete its ESTAE recovery environment.
System action: The IMS Control Region abnormally stops.
User response: Retain any diagnostic information and contact IBM Software Support.

GLX2924I  GLXILGX0 NOT LOADED BY IMS
Explanation: The Generic Logger exit routine DFSFLGX0 was not the first logger exit routine found in the IMS execution library concatenation.
System action: Processing continues, based on the INITFAIL keyword setting.
User response: Ensure that the Generic Logger exit routine DFSFLGX0 is the first logger exit routine in the
//STEPLIB or //JOBLIB of the IMS Control Region
JCL.

GLX2925E ERROR OPENING LOAD LIB name

Explanation: An error occurred when the Generic Logger exit routine attempted to open load library name.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Retain any diagnostic information and contact IBM Software Support.

GLX2926I Informational Messages

Explanation: These messages include several types of informational messages that display and describe the Generic Logger exit routine processing.

System action: The IMS Control Region continues normally.

User response: None.

GLX2927E ERROR GETTING ITASK ECB FOR ESTAE ROUTINE

Explanation: The Generic Logger exit routine failed to obtain the ECB under which it is running. This is an internal processing error.

System action: The IMS Control Region abnormally stops.

User response: Retain any diagnostic information and contact IBM Software Support.

GLX2928E IMS GENERIC LOGGER EXIT

TERMINATED DUE TO ERROR

Explanation: An Generic Logger exit routine component has terminated due to an error.

System action: The Generic Logger exit routine is disabled. IMS logger exit routines are no longer driven.

User response: Review the IMS Control Region job log for other messages that are associated with this error. If the problem persists, retain any diagnostic information and contact IBM Software Support.

GLX2930E EXIT name TERMINATED DUE TO ERROR

Explanation: The logger exit routine name has been terminated due to an error.

System action: The Generic Logger exit routine can no longer drive the name logger exit routine.

User response: Review other messages that are associated with this error and correct the logger exit routine, if possible. If the problem persists, contact the provider of the logger exit routine for support.

GLX2931E EXIT name NAME NOT UNIQUE

Explanation: This error occurs in a batch environment when the Generic Logger exit routine determines that logger exit routine name is not unique and cannot be successfully loaded.

System action: The Generic Logger exit routine processes this error according to the setting of the EXITINIT keyword.

User response: Ensure that all logger exit routines are uniquely named for the batch environment and resubmit the job.

Generic Logger exit user abend codes

The IMS Tools Generic Logger exit issues user abend codes that can help you with troubleshooting.

Generic Logger exit uses only one abend code: 3333.

For each abend code, the following information is provided where applicable:

Explanation:
The Explanation section explains what the abend code means, why it occurred, and what its variable entry fields are (if any).

System Action:
The System Action section explains what the system will do next.

User Response:
The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.
Explanation: An error occurred while the Generic Logger exit routine was being processed. Additional error messages are issued that indicate the cause of the error. The following abend subcodes provide more information about the error:

- **x'65'** LOCATE SCD FAILED
- **x'66'** IMS RELEASE NOT SUPPORTED
- **x'67'** LOAD GLXIINTX FAILED
- **x'68'** INVALID ENVIRONMENT
- **x'69'** GLXIILGX NOT LOADED
- **x'C9'** LOAD GLXIILG0 FAILED
- **x'CA'** LOAD GLXICHKX FAILED
- **x'CB'** LOAD GLXILGXX FAILED
- **x'CC'** GLXILGXX NOT LOADED BY IMS
- **x'D0'** DUPLICATE INIT CALL
- **x'D1'** INVALID CALL
- **x'D2'** MVS™ NAME TOKEN SERVICES FAILED
- **x'D3'** ERROR READING PROCLIB MEMBER
- **x'D4'** CREATE ESTAE FAILED
- **x'D5'** LOAD GLXIESTX FAILED
- **x'D6'** NO EXIT DEFINITIONS
- **x'D7'** LOAD GLXILODX FAILED
- **x'D8'** DUPLICATE EXIT DEFINITIONS
- **x'D9'** GET ITASK ECB FAILED
- **x'DA'** ALLOCATE LOADLIB FAILED
- **x'DB'** LOAD EXIT FAILED
- **x'DC'** OPEN LOADLIB FAILED
- **x'DD'** LOADLIB NOT APF-AUTHORIZED
- **x'DE'** GET ITASK ECB FAILED
- **x'EF'** LOADLIB NOT APF-AUTHORIZED
- **x'F0'** ERROR READING PROCLIB MEMBER

System action: Processing is dependent on the settings of the Generic Logger exit routine global processing options.

User response: Review the IMS Control Region job log for error messages that are associated with the problem. Correct the error if possible. If the problem persists, retain any diagnostic information and contact IBM Software Support.

Generic Partner exit usage

The IMS Tools Generic Partner exit (product prefix GPR) enables multiple copies of the IMS Partner exit, normally named DFSPPUE0 to exist and to be driven within a single IMS environment. The Generic Partner exit drives other Partner exits during IMS initialization so that each can perform its product initialization.

Topics:
- “Generic Partner exit overview”
- “Generic Partner exit definitions” on page 20
- “Global processing parameters” on page 21

Generic Partner exit overview

The Generic Partner exit (product prefix GPR) enables multiple copies of the IMS Partner exit, normally named DFSPPUE0 to exist and to be driven within a single IMS environment.
The Generic Partner exit drives other partner exits during IMS initialization so that each can perform its product initialization. This feature is necessary because some products (for example, IMS Queue Control Facility and IMS Tools Online Interface) use the partner exit to perform product initialization. You can also have your own partner exit routine.

The Generic Partner exit is a piece of common code is part of IMS Tools Generic Exits, which has its own execution libraries and install process.

The Generic Partner exit is designed to operate on any hardware and software configuration that supports the required versions of IMS. For detailed specifications, refer to the appropriate Program Directory for the IMS Tool that you are using.

**Exit control flow**

During the initialization process, IMS calls the IMS Tools Generic Exits. The generic exits then call other exits that are defined in their PROCLIB members.

The exit control flow during IMS initialization is summarized in the following figure:

![Exit control flow diagram](image)

For example, to configure IMS Tools Online System Interface (TOSI), you must specify FOIPPU0 in the Generic Partner exit (GPR) PROCLIB member. When the Generic Partner exit is called during the IMS initialization process, the Generic Partner exit calls the FOIPPU0 exit, and TOSI is initialized.

**Coexistence with other partner exits**

The Generic Partner exit drives all other partner exits under each IMS control region. In the //STEPLIB concatenation, placing the Generic Partner routine DFSPPUE0 (alias GPRIPUE0) as the first copy of the DFSPPUE0 is recommended.

If the Generic Partner exit cannot be at the beginning in the //STEPLIB concatenation because of another exit that must be first, the Generic Partner exit can be placed anywhere in the //STEPLIB under the following condition:

- The DFSPPUE0 that is before the Generic Partner exit must pass control to the Generic Partner exit.
The Generic Partner exit can then call the remaining partner exits that have been defined in the exit list.

**Important:** Ensure that you do not include the DFSPPUE0 in front of the Generic Partner exit in the exit list. Otherwise, a recursive call occurs, which causes a loop.

An exit can determine if it was called by the Generic Partner exit by checking for a literal, as shown in the following code. The literal is pointed by the register 14 + x'4'.

\[
\begin{align*}
& \text{BALR R14,R15 CALL USER EXIT} \\
& \text{B PASTID SKIP ID} \\
& \text{DC CL16'GENERIC EXITS' EYECATCHER} \\
& \text{PASTID DS 0H}
\end{align*}
\]

**Generic Partner exit activation**

To activate this exit, set up the required member that is described in "Generic Partner exit definitions."

If you do not need this exit, do not configure it.

If no exit definitions are found, one of the following conditions occurs:
- If the Generic Partner exit is NOT first in //STEPLIB, the exit returns to its caller without passing control to the next DFSPPUE0 in the //STEPLIB stack.
- If the Generic Partner exit is first in //STEPLIB, the exit transfers control to the next DFSPPUE0 in the //STEPLIB stack and then removes itself from the IMS control region. The Generic Partner exit is not called by IMS again.
  
In both of the previous conditions, the Generic Partner exit is disabled.

**Important:** Before you disable a generic exit, ensure that the exit is not being used by another IMS tools product. If you disable a generic exit that is being used by another IMS tools product, that tool will not be able to operate.

**Generic Partner exit definitions**

The Generic Partner exit requires you to define a set of partner exits. If these definitions are not set, the Generic Partner exit issues an error message and continues processing based on the setting of the INITFAIL parameter. No partner exit can be invoked unless a set of partner exit routines have been defined.

The Generic Partner exit supports a BPE-style PROCLIB member for the partner exit list.

The following two naming patterns for the partner exit definitions are supported to provide you the ability to have both IMS specific definitions and global definitions, if you need them.

For IMS specific definitions, the name must follow the pattern of GPR\(iii0\), where \(iii\) is the 4-character, alphanumeric IMS ID. For global definitions that are not specific to any particular IMS, the name will be GPREXIT0. When the Generic Partner exit initializes, the search order it follows to locate the definitions is the order that is presented in the following list:

1. PROCLIB member GPR\(iii0\)
2. PROCLIB member GPREXIT0
The first member that is located is used for exit definitions and no other members are processed. If no exit definition member is found or if a member is found but it contains no definitions, the Generic Partner exit issues messages and continues processing based on the setting of the INITFAIL parameter.

**PROCLIB member definitions**

Define your Partner exits through a PROCLIB member. Each exit must be defined using the following BPE-format control card. The order of the statements in the member determines the order in which the exits are called. This member can be in any data set within your PROCLIB DD concatenation in the JCL.

The following examples shows the format of the control card:

```
EXITDEF(TYPE(PARTNER) EXITNAME(exit-name) LOADLIB(load-library))
```

The following rules apply to the control card:
- You must specify each exit that is to be called in a separate EXITDEF() statement.
- You must set the TYPE() keyword PARTNER for this feature.
- You must specify the name of the exit with the EXITNAME() keyword and it must match a member name in the specified load library.
- You must specify the load library in which the exit resides with the LOADLIB() keyword and LOADLIB() must specify a cataloged load library which is APF authorized, and to which the IMS control region has access.

The Generic Partner exit tests the load library to ensure that it is APF authorized. If the load library is not APF authorized, the exit is not called, and error messages are issued. Processing continues based on your global statement specification.

The following sample shows a Generic Partner exit definition member for an IMS control region that includes IMS Queue Control Facility, IMS Tools Online Interface, and a customer Partner exit routine:

```
EXITDEF(TYPE(PARTNER) EXITNAME(IQCPPUE0) LOADLIB(qcf.LOADLIB))
EXITDEF(TYPE(PARTNER) EXITNAME(FOIPPUE1) LOADLIB(toi.LOADLIB))
EXITDEF(TYPE(PARTNER) EXITNAME(DFSPPUE0) LOADLIB(user.LOADLIB))
```

When the Generic Partner exit initializes, it loads each exit and calls it for initialization in the order that is specified in the definition member.

**Global processing parameters**

In addition to defining the actual Partner exits, there are global parameters that you can use to control Generic Partner exit processing in error situations. You specify these parameters in the PROCLIB member named GPROPT0.

Three situations can occur in which you can drive the Generic Partner exit processing:
- When the Generic Partner exit is initializing and setup errors are detected, such as a missing exit definition member, control card errors, or no exits are defined
- When processing an exit routine definition during initialization and the exit routine cannot be located or loaded, or the load library is not APF-authorized
- During invocation of an exit, an error occurs in the exit routine that causes an abend

In any of these cases, you can use a global parameter to cause the Generic Partner exit to generate an abend for the job or perform recovery processing and continue.
The following example shows the format of the global parameter when it is specified in the PROCLIB member:

```
GLOBAL(INITFAIL(ABEND | WARNING)
   EXITINIT(ABEND | TERMEXIT)
   EXITPROC(ABEND | TERMEXIT))
```

**INITFAIL parameter**
The INITFAIL parameter drives processing when an error is encountered while attempting to initialize the Generic Partner exit.

The following errors can occur:
- The Generic Partner exit copy of DFSPPUE0 was not the first copy of DFSPPUE0 that was invoked.
- No exit definitions were found.
- Errors were detected in the exit definitions.

You can set the INITFAIL parameter to either of the following settings:

- **INITFAIL=ABEND**
  This setting causes the Generic Partner exit to issue an error message and return to IMS with RC=12.

- **INITFAIL=WARNING**
  This setting causes the Generic Partner exit to issue warning messages and return to IMS with an RC=0 that allows the Generic Partner exit to continue processing. In this case, no Partner exits are invoked during IMS processing.

  INITFAIL=WARNING is the default setting.

**EXITINIT parameter**
The EXITINIT parameter drives processing when an error occurs while attempting to locate or load the exit routine during Generic Partner exit initialization or if the load library is not APF authorized.

You can set the EXITINIT parameter to either of the following settings:

- **EXITINIT=ABEND**
  This setting causes the Generic Partner exit to issue an error message and return to IMS with RC=12.

- **EXITINIT=TERMEXIT**
  This setting causes the Generic Partner exit to issue an error message for the exit, and then continue processing the remaining exits.

  EXITINIT=TERMEXIT is the default setting.

**EXITPROC parameter**
The EXITPROC parameter drives the processing when an error occurs within the exit while it is processing.

You can set the EXITPROC parameter to either of the following settings:

- **EXITPROC=ABEND**
  This setting causes the Generic Partner exit to issue an error message and return to IMS with RC=12.

- **EXITPROC=TERMEXIT**
  This setting causes the Generic Partner exit to issue an error message for the exit, and then continue calling the remaining exits.
EXITPROC=TERMEXIT is the default setting.

**Generic Partner exit messages**

The IMS Tools Generic Partner exit issues messages that can help you understand the state of the exit and help you resolve errors.

Errors that are encountered while processing data on the ISPF user interface panels are indicated through a short message that is displayed on the top right corner of the panel. To obtain more information about the error, press PF1.

The last character of each message is one of the following severity codes:
- **A** messages indicate action is required by the user before processing can continue.
- **E** messages indicate an error condition in which a requested function did not complete successfully. The condition might or might not require action.
- **I** messages are informational only.
- **W** messages warn the user of a possible error condition.

For each message, the following accompanying information is provided where applicable:

**Explanation:**
This information explains what the message text means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
This information explains what the system will do next.

**User Response:**
This information describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

---

**GPR2901E**  UNABLE TO LOCATE IMS SSCD

**Explanation:** Generic Partner exit could not locate IMS SSCD.

**System action:** The IMS Control Region abends with a U=3000.

**User response:** Contact IBM Software support.

**GPR2902E**  IMS RELEASE NOT SUPPORTED

**Explanation:** Generic Partner exit is executing in an unsupported IMS release.

**System action:** The IMS Control Region abends with a U=3000.

**User response:** Contact IBM Software support and provide dump.

**GPR2903E**  LOAD FAILED FOR GPR MODULE

**name**

**Explanation:** Generic Partner exit could not locate the named module.

**System action:** The IMS Control Region abends with a U=3000.

**User response:** Contact IBM Software support.

**GPR2905E**  IMS GENERIC PARTNER EXIT INITIALizaTion FAILED

**Explanation:** Generic Partner exit has failed to initialize.

**System action:** The IMS Control Region abends with a U=3000.

**User response:** Examine the previous messages for the reason.

**GPR2908E**  MVS NAME TOKEN SERVICE FAILED FOR

**name**, **RC=mnnn**, **RSN=mnnn**

**Explanation:** Generic Partner exit has failed to obtain a name token.

**System action:** The IMS Control Region abends with a U=3000.

**User response:** Contact IBM Software support.
GPR2909E  GPR2913W

GPR2909E  ERROR action PROCLIB MEMBER member, REASON=reason

Explanation:  An error occurred while processing the IMS Generic Partner exit routine PROCLIB member member that was specified. The action that was taken might be READING or PARSING. The possible reasons for the error are as follow:

- NOSTG- no storage was available to perform the read
- OPENFAIL- the open failed for the IMS PROCLIB data set
- NOTFIXED- the IMS PROCLIB data set format is not FIXED
- READFAIL- the read failed for the IMS PROCLIB data set
- NOTFOUND- the specified PROCLIB member cannot be found

Invalid input data is detected by the parsing module and is assigned to one of the following reason codes:

- X'40' An invalid keyword was detected in the input data.
- X'44' An unknown positional parameter was encountered in the input.
- X'48' A keyword parameter was specified with an equal sign (KEYWORD=), but the keyword was defined as having a sublist of values. Sublists can be specified only in parentheses and an equal sign can be used only if a keyword has a single value.
- X'4C' The input ended before the entire sublist or keyword was parsed.
- X'50' A keyword was encountered (KEYWORD or KEYWORD=), but a value was expected instead.
- X'54' An input number that was being parsed was out of the range that is allowed for its output field length. For decimal numbers, the numbers must be less than or equal to 255 for 1-byte fields, 65535 for 2-byte fields, 16777215 for 3-byte fields, and 2147483647 for 4-byte fields. For hex numbers, the number cannot have digits that are more than two times the number of bytes in the output field.
- X'58' A parameter value that is defined as decimal contains non-decimal digits.
- X'5C' A parameter value that is defined as hex contains non-hex digits.
- X'60' A parameter value that is defined as a keyvalue parameter has an unknown key value.
- X'64' A keyword parameter is present multiple times, but it is not defined as being repeatable.

X'68' A parameter that is defined with REQUIRED=YES was not found in the input data.

X'6C' A character parameter value is longer than the defined output field length, and truncation is not allowed.

System action:  Processing continues, based on the INITFAIL keyword setting.

User response: Review the IMS GPR exit routine installation information to ensure that the PROCLIB member member has been specified correctly.

GPR2910E  PARTNER EXIT name INITIALIZATION FAILED

Explanation: The named exit has failed to initialize.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Contact the exit provider for support.

GPR2911W  MISSING OR INVALID EXIT

Explanation: Missing or invalid exit definition found.

System action: Processing continues based on the INITFAIL keyword setting.

User response: If no exit routines were defined (the PROCLIB member is empty), define the partner exit routines by using a PROCLIB member or a load module. If the exit definition is invalid, see the Generic Partner exit routine setup and usage information, and then redefine the exit routine.

If you want to disable the Generic Partner exit, remove the empty PROCLIB member. When an exit is not configured, it is disabled.

GPR2912E  DUPLICATE EXIT DEFINITION

Explanation: Duplicate exit definition found.

System action: Processing continues based on the INITFAIL keyword setting.

User response: Remove duplicate definitions and resubmit the job.

GPR2913W  NO EXIT DEFINITION FOUND

Explanation: No partner exit definition was found by Generic Partner exit.

System action: Generic Partner exit will unregister itself from IMS and search for next partner exit in //STEPLIB or //JOBLIB. If one is found, control is passed to it.

User response: Make sure that you do not have more than one Partner exit in your IMS environment. If you have more than one Partner exit, you must adjust your
configuration to have Generic Partner exit drive all existing Partner exits.

GPR2915E  ERROR LOADING EXIT name FROM LOADLIB=name

Explanation: An error occurred while loading the exit from the load library.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Make sure the exit exists and load library is APF-authorized.

GPR2916W  GPROPT0 NOT FOUND. DEFAULT GLOBAL OPTIONS WILL BE USED

Explanation: Invalid value was specified for the keyword.

System action: Processing continues. Default value is set for the keyword.

User response: Correct the error and resubmit the job.

GPR2917W  keyword=name IS NOT VALID. DEFAULT VALUE WILL BE USED

Explanation: Invalid value was specified for the keyword.

System action: Processing continues. Default value is set for the keyword.

User response: Correct the error and resubmit the job.

GPR2918E  DYNAMIC ALLOCATION FAILED FOR name RC=####, RSN=####, INFO=####

Explanation: Dynamic allocation failed for the named library.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Check meaning of SVC 99 return code and reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

GPR2919E  DYNAMIC DEALLOCATION FAILED FOR name RC=####, RSN=####, INFO=####

Explanation: Dynamic deallocation failed for the named library.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Check the meaning of SVC 99 return code and the reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

GPR2920E  name IS NOT APF-AUTHORIZED. INIT FOR EXIT name FAILED

Explanation: The named load library is not APF-authorized. Initialization for the named Partner exit failed.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Correct the error and resubmit the job.

GPR2923E  IMS GENERIC PARTNER ESTAE CREATE FAILED, RC=####

Explanation: Generic Partner exit failed to create its ESTAE recovery environment.

System action: The IMS Control Region abends with a U=3000.

User response: Contact IBM Software Support.

GPR2924I  GPRIPUE0 NOT LOADED BY IMS

Explanation: Generic Partner exit DFSPPUE0 was not the first Partner exit in IMS execution library concatenation.

System action: The IMS Control Region abends with a U=3000.

User response: Ensure that the Generic Partner exit, DFSPPUE0 is the first in IMS library concatenation.

GPR2925E  ERROR OPENING LOAD LIB name

Explanation: An error occurred when Generic Partner exit tried to open the named load library.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Contact IBM Software Support.

GPR2926I  Informational Messages

Explanation: Various informational messages showing Generic Partner exit processing.

System action: The IMS Control Region continues normally.

User response: None.

GPR2927E  ERROR GETTING ITASK ECB FOR ESTAE ROUTINE

Explanation: Generic Partner exit failed to obtain the ECB its executing under.

System action: The IMS Control Region abends with a U=3000.
GPR2928E • 3000

User response: Contact IBM Software Support.

GPR2928E IMS GENERIC PARTNER EXIT TERMINATED DUE TO ERROR

Explanation: Generic Partner exit component has terminated because of an error.

System action: Generic Partner exit functions are no longer available.

User response: Examine previous error messages for the causes.

---

Generic Partner exit user abend codes

The IMS Tools Generic Partner exit issues user abend codes that can help you with troubleshooting.

Generic Partner exit uses only one abend code: 3000.

For each abend code, the following information is provided where applicable:

**Explanation:**

The Explanation section explains what the abend code means, why it occurred, and what its variable entry fields are (if any).

**System Action:**

The System Action section explains what the system will do next.

**User Response:**

The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

### 3000

**Explanation:** An error occurred while the Generic Partner exit routine was being processed. Additional error messages are issued that indicate the cause of the error. The following abend subcodes provide more information about the error:

- **x'65'**
  - LOCATE SCD FAILED
- **x'66'**
  - IMS RELEASE NOT SUPPORTED
- **x'67'**
  - LOAD GPRIINTX FAILED
- **x'CA'**
  - LOAD GPRICHX FAILED
- **x'CC'**
  - GPRIPUE0 NOT LOADED BY IMS
- **x'CF'**
  - MVS NAME TOKEN SERVICES FAILED
- **x'D0'**
  - ERROR READING PROCLIB MEMBER
- **x'D1'**
  - ERROR PARSING PROCLIB MEMBER
- **x'D2'**
  - CREATE ESTAE FAILED
- **x'D3'**
  - LOAD GPRIESTX FAILED
- **x'D4'**
  - NO EXIT DEFINITIONS
- **x'D5'**
  - DUPLICATE EXIT DEFINITIONS
- **x'D6'**
  - LOAD GPRIODX FAILED
- **x'D7'**
  - GET ITASK ECB FAILED
- **x'D8'**
  - LOAD GPRIODX FAILED
- **x'D9'**
  - DUPLICATE EXIT DEFINITIONS
- **x'DA'**
  - LOAD GPRIODX FAILED
- **x'DB'**
  - CREATE ESTAE FAILED
- **x'DC'**
  - LOAD GPRIODX FAILED
- **x'DD'**
  - OPEN LOADLIB FAILED
- **x'DE'**
  - ALLOCATE LOADLIB FAILED
- **x'DF'**
  - LOAD EXIT FAILED
- **x'EE'**
  - LOADLIB NOT APF-AUTHORIZED
- **x'EF'**
  - GET ITASK ECB FAILED
- **x'F0'**
  - LOADLIB NOT APF-AUTHORIZED
- **x'F1'**
  - GET ITASK ECB FAILED
- **x'F2'**
  - LOADLIB NOT APF-AUTHORIZED
- **x'F3'**
  - GET ITASK ECB FAILED
- **x'F4'**
  - LOADLIB NOT APF-AUTHORIZED
- **x'F5'**
  - GET ITASK ECB FAILED
- **x'F6'**
  - LOADLIB NOT APF-AUTHORIZED
- **x'F7'**
  - GET ITASK ECB FAILED
**System action:** Processing is dependent on the settings of the IMS Generic Partner exit routine global processing options.

**User response:** Review the IMS Control Region job log for error messages that are associated with the problem. Correct the error if possible. If the problem persists, retain any diagnostic information and contact IBM Software Support.

**Generic MSC exit usage**

The IMS Tools Generic Transaction Manager and Multiple Systems Coupling Message Routing and Control User exit (also referred to as the Generic MSC exit with product prefix GEX) enables multiple copies of the IMS MSC exit routine (DFSMSCE0) to exist and to be driven within a single IMS environment. The Generic MSC exit drives other MSC exit routines.

**Topics:**
- "Generic MSC exit overview"
- "Generic MSC exit definitions" on page 29
- "Global processing parameters" on page 30

**Generic MSC exit overview**

The IMS Tools Generic TM and MSC Message Routing exit (also referred to as the Generic MSC exit with product prefix GEX) enables multiple copies of the IMS MSC exit routine (DFSMSCE0) to exist and to be driven within a single IMS environment. The Generic MSC exit drives other MSC exit routines.

The Generic MSC exit can be used with several IMS Tools products to perform transaction routing. You can also have your own MSC exit routine.

The purpose of the Generic MSC exit is to be a driver for other MSC exits. The Generic MSC exit is product-independent and does no product-specific work itself. It calls other MSC exits during IMS processing so each can perform message routing.

The Generic MSC exit is designed to operate on any hardware and software configuration that supports the required versions of IMS. For detailed specifications, refer to the appropriate Program Directory for the IMS Tool that you are using.

**Exit control flow**

During the initialization process, IMS calls the IMS Tools Generic Exits. The generic exits then call other exits that are defined in their PROCLIB members.

The exit control flow during IMS initialization is summarized in the following figure:
For example, to configure IMS Sysplex Manager, you must specify GJEMSCE0 in the Generic MCS exit (GEX) PROCLIB member. When GJEMSCE0 is added to the GEX PROCLIB member, the Generic MSC exit calls GJEMSCE0 after the IMS initialization process calls the Generic MSC exit.

**Coexistence with other MSC exits**

The Generic MSC exit drives all other MSC exits under each IMS control region. In the //STEPLIB concatenation, placing the Generic MSC routine DFSMSCE0 (alias GEXMSCE0) as the first copy of the DFSMSCE0 is recommended.

If the Generic MSC exit cannot be at the beginning in the //STEPLIB concatenation because of another exit that must be first, the Generic MSC exit can be placed anywhere in the //STEPLIB under the following condition:

- The DFSMSCE0 that is before the Generic MSC exit must pass control to the Generic MSC exit.

  The Generic MSC exit can then call the remaining MSC exits that have been defined in the exit list.

  **Important:** Ensure that you do not include the DFSMSCE0 in front of the Generic MSC exit in the exit list. Otherwise, a recursive call occurs, which causes a loop.

An exit can determine if it was called by the Generic MSC exit by checking for a literal, as shown in the following code. The literal is pointed by the register 14 + x’4’.

```asm
BALR R14, R15          CALL USER EXIT
B PASTID              SKIP ID
DC CL16'GENERIC EXITS' EYECATCHER
PASTID DS 0H
```

**Generic MSC exit activation**

To activate this exit, set up the required member that is described in "Generic MSC exit definitions” on page 29.

If you do not need this exit, do not configure it.
If no exit definitions are found, one of the following conditions occurs:

- If the Generic MSC exit is NOT first in //STEPLIB, the exit returns to its caller without passing control to the next DFSMSCE0 in the //STEPLIB stack.

- If the Generic MSC exit is first in //STEPLIB, the exit transfers control to the next DFSMSCE0 in the //STEPLIB stack and then removes itself from the IMS control region. The Generic MSC exit is not called by IMS again.

In both of the previous conditions, the Generic MSC exit is disabled.

**Important:** Before you disable a generic exit, ensure that the exit is not being used by another IMS tools product. If you disable a generic exit that is being used by another IMS tools product, that tool will not be able to operate.

### Generic MSC exit definitions

The Generic MSC exit requires you to define a set of MSC exit routines. If these definitions are not set, the Generic MSC exit issues an error message and continues processing based on the setting of the INITFAIL parameter. No MSC exit routine can be invoked unless a set of QSN exit routines have been defined.

Generic MSC exit supports a BPE-style PROCLIB member for the MSC exit list.

The following two naming patterns for the definitions are supported so that you can use both IMS-specific definitions and, if needed, global definitions for cloned IMS environments:

- For IMS-specific definitions, the name follows the pattern: GEXxxxx0, where xxxx is the IMS ID.
- For global definitions that are not specific to any IMS system, the name is GEXEXIT0.

When Generic MSC exit initializes, the following search order is used to locate the exit routine definitions:

1. PROCLIB member GEXxxxx0
2. PROCLIB member GEXEXIT0

The first member that is located is used for the exit routine definitions. No other members are processed.

If no exit routine definition member is found or if the member is found but contains no definitions, the Generic MSC exit issues messages and continues processing based on the setting of the INITFAIL parameter.

### PROCLIB member definitions

MSC exit routines are defined by using a PROCLIB member. Each exit routine must be defined by using a BPE-format control card.

The order of the statements in the member determines the order in which the exit routines are called.

**Important:** Because all MSC exits are able to affect the routing of a message, IMS Sysplex Manager’s copy of DFSMSCE0 must be the last exit that is defined in the PROCLIB member so that IMS Sysplex Manager has the priority in determining where the message should be processed.
This member can be in any data set within the //PROCLIB DD concatenation in the IMS control region JCL.

The following example shows the format of the control card:

```
EXITDEF(TYPE(MSCE) EXITNAME(exit-name) LOADLIB(load-library))
```

The following rules apply to the control card:

- Each exit routine that is to be called must be specified in a separate EXITDEF() statement.
- The TYPE() keyword must be MSCE for this feature.
- The name of the exit routine is specified with the EXITNAME() keyword and must match a member name in the specified load library.
- The load library in which the exit routine resides is specified with the LOADLIB() keyword and must specify a cataloged load library that is APF-authorized and to which the IMS control region has access.

The Generic MSC exit tests the load library to ensure that it is APF-authorized (DEBAPFIN bit in the DEB). If the load library is not APF-authorized, the exit routine is not called, and error messages are issued. Processing continues based on the global statement specification.

The following sample shows a Generic MSC exit definition member for an IMS control region that includes a customized MSC exit routine and an IMS Sysplex Manager exit:

```
EXITDEF(TYPE(MSCE) EXITNAME(DFSMSCE0) LOADLIB(user.LOADLIB))
EXITDEF(TYPE(MSCE) EXITNAME(GJEMSCE0) LOADLIB(IMSSM.LOADLIB))
```

When the Generic MSC exit initializes, it loads each exit routine and calls it for initialization in the order that is specified in the member.

**Global processing parameters**

In addition to defining the actual MSC exit routines, you can optionally use global processing parameters to control the Generic MSC exit processing in error situations. You specify these parameters in the PROCLIB member or in the load module named GEXOPT0.

Three situations can occur in which you can drive the Generic MSC exit processing:

- When the Generic MSC exit is initializing and setup errors are detected, such as a missing exit routine definition member, control card errors, or when no exit routines are defined
- When processing an exit routine definition during initialization and the exit routine cannot be located or loaded, or the load library is not APF-authorized
- During invocation of an exit routine, an error occurs in the exit routine that causes an abend

In any of these cases, you can use a global parameter to make the Generic MSC exit generate an abend for the job or perform recovery processing and continue.

The following example shows the format of the global parameter when it is specified in the PROCLIB member:

```
GLOBAL(INITFAIL(ABEND | WARNING)
  EXITINIT(ABEND | TERMEXIT)
  EXITPROC(ABEND | TERMEXIT))
```
**INITFAIL parameter**
The INITFAIL parameter drives processing when an error occurs while attempting to initialize the Generic MSC exit.

The following errors can occur:
- The Generic MSC exit copy of DFSMSCE0 was not the first copy of DFSMSCE0 invoked.
- No exit definitions were found.
- Errors were detected in the exit definitions.

You can set the INITFAIL parameter to either of the following settings:

**INITFAIL=ABEND**
This setting causes the Generic MSC exit to issue an error message and return to IMS with RC=12.

**INITFAIL=WARNING**
This setting causes the Generic MSC exit to issue warning messages and return control to IMS with RC=0 to allow it to continue processing. In this case, no MSC exit routines are invoked during IMS processing.

INITFAIL=WARNING is the default setting.

**EXITINIT parameter**
The EXITINIT parameter drives processing when an error occurs while attempting to locate or load the exit routine during the Generic MSC exit initialization or if the load library is not APF-authorized.

You can set the EXITINIT parameter to either of the following settings:

**EXITINIT=ABEND**
This setting causes the Generic MSC exit to issue an error message and return to IMS with RC=12.

**EXITINIT=TERMEXIT**
This setting causes the Generic MSC exit to issue an error message for the exit routine, and then continue processing the remaining exits.

EXITINIT=TERMEXIT is the default setting.

**EXITPROC parameter**
The EXITPROC parameter drives the processing when an error occurs within the exit routine while it is processing.

You can set the EXITPROC parameter to either of the following settings:

**EXITPROC=ABEND**
This setting causes the Generic MSC exit to issue an error message and return to IMS with RC=12.

**EXITPROC=TERMEXIT**
This setting causes the Generic MSC exit to issue an error message for the exit routine, and then continue calling the remaining exits.

EXITPROC=TERMEXIT is the default setting.

**Generic MSC exit messages**
The IMS Tools Generic MSC exit issues messages that can help you understand the state of the exit and help you resolve errors.
Errors that are encountered while processing data on the ISPF user interface panels are indicated through a short message that is displayed on the top right corner of the panel. To obtain more information about the error, press PF1.

The last character of each message is one of the following severity codes:
- A messages indicate action is required by the user before processing can continue.
- E messages indicate an error condition in which a requested function did not complete successfully. The condition might or might not require action.
- I messages are informational only.
- W messages warn the user of a possible error condition.

For each message, the following accompanying information is provided where applicable:

**Explanation:**
This information explains what the message text means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
This information explains what the system will do next.

**User Response:**
This information describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

---

**GEX2902E**  IMS RELEASE NOT SUPPORTED

Explanation: Generic MSC exit is executing in an unsupported IMS release.

System action: The IMS Control Region abends U=4014

User response: Ensure Generic MSC exit is being run on a supported IMS release.

**GEX2903E**  LOAD FAILED FOR GEX MODULE

name

Explanation: Generic MSC exit could not locate the named module.

System action: The IMS Control Region abends U=4014

User response: Retain any diagnostic information and contact IBM Software Support.

**GEX2904E**  CANNOT LOCATE STW IN POOL

Explanation: Generic MSC exit could not locate its static work area to continue processing.

System action: The IMS Control Region abends U=4014

User response: Retain any diagnostic information and contact IBM Software Support.

**GEX2905E**  IMS GENERIC MSC EXIT

**INITIALIZATION FAILED**

Explanation: Generic MSC exit has failed to initialize.

System action: The IMS Control Region abends U=4014

User response: Examine previous messages for possible reasons.

**GEX2908E**  MVS NAME TOKEN SERVICE FAILED FOR name, RC=nnnn, RSN=nnnn

Explanation: During the initialization process, the Generic MSC exit routine issued a request to obtain a name token from z/OS, but the request failed with the return code and reason code that are included in the error message.

System action: The IMS Control Region abends U=4014

User response: Retain any diagnostic information and contact IBM Software Support.

**GEX2909E**  ERROR action PROCLIB MEMBER

member, REASON=reason

Explanation: An error occurred while processing the Generic MSC exit routine PROCLIB member member that was specified. The action taken might be READING or PARSING. The possible reasons for the error are:
- NOSTG (no storage available to perform read)
Invalid input data is detected by the parsing module and is assigned to the following reason codes:

X'40'
An invalid keyword was detected in the input data.

X'44'
An unknown positional parameter was encountered in the input.

X'48'
A keyword parameter was specified with an equal sign (KEYWORD=), but the keyword was defined as having a sublist of values. Sublists can be specified only in parentheses and an equal sign can be used only if a keyword has a single value.

X'4C'
The input ended before the entire sublist or keyword was parsed.

X'50'
A keyword was encountered (KEYWORD or KEYWORD=), but a value was expected.

X'54'
An input number that was being parsed was out of the range that is allowed for its output field length. For decimal numbers, the numbers must be less than or equal to 255 for 1-byte fields, 65535 for 2-byte fields, 16777215 for 3-byte fields, and 2147483647 for 4-byte fields. For hex numbers, the number cannot have digits that are more than two times the number of bytes in the output field.

X'58'
A parameter value that is defined as decimal contains non-decimal digits.

X'5C'
A parameter value that is defined as hex contains non-hex digits.

X'60'
A parameter value that is defined as a keyvalue parameter has an unknown key value.

X'64'
A keyword parameter is present multiple times, but it is not defined as being repeatable.

X'68'
A parameter that is defined with REQUIRED=YES was not found in the input data.

X'6C'
A character parameter value is longer than the defined output field length, and truncation is not allowed.

System action: Processing continues, based on the INITFAIL keyword setting.

User response: Review the Generic MSC exit routine installation information to ensure that the PROCLIB member member has been specified correctly.

GEX2910E  MSC EXIT name INITIALIZATION FAILED.
Explanation: The named exit has failed to initialize.
System action: Processing continues based on the EXITINIT keyword setting.
User response: Review other messages that are associated with this error. If the problem persists, contact the provider of the MSC exit routine for support.

GEX2911W  MISSING OR INVALID EXIT
Explanation: Missing or invalid exit definition found.
System action: Processing continues based on the INITFAIL keyword setting.
User response: If no exit routines were defined (the PROCLIB member is empty), define the MSC exit routines by using a PROCLIB member or a load module. If the exit definition is invalid, see the Generic MSC exit routine setup and usage information, and then redefine the exit routine.

If you want to disable the Generic MSC exit, remove the empty PROCLIB member. When an exit is not configured, it is disabled.

GEX2912E  DUPLICATE EXIT DEFINITION
Explanation: The Generic MSC exit routine has found duplicate exit routine definitions in a PROCLIB member or load module.
System action: Processing continues based on the INITFAIL keyword setting.
User response: Check the PROCLIB member or load module, delete the duplicate exit routine definition, and resubmit the job.

GEX2913W  NO EXIT DEFINITION FOUND
Explanation: No MSC exit definition was found by Generic MSC exit.
System action: Generic MSC exit will unregister itself from IMS and search for next MSC exit in //STEPLIB or //JOBLIB. If one is found, control is passed to it.
User response: Make sure that you do not have more...
than one MSC exit in your IMS environment. If you have more than one MSC exit, you must adjust your configuration to have Generic MSC exit drive all existing MSC exits.

**GEX2915E**  ERROR LOADING EXIT name FROM LOADLIB=name

**Explanation:** An error occurred when the Generic MSC exit routine attempted to load the exit routine from the load library name. The exit routine might not exist in the library, or the library is not APF-authorized.

**System action:** Processing continues, based on the EXITINIT keyword setting.

**User response:** Ensure that the exit routine exists and that the load library is APF-authorized.

**GEX2916W**  GEXOPT0 NOT FOUND. DEFAULT GLOBAL OPTIONS WILL BE USED

**Explanation:** Invalid value was specified for the keyword.

**System action:** Processing continues. Default value is set for the keyword.

**User response:** Correct the error and resubmit the job.

**GEX2917W**  KEYWORD=name IS NOT VALID. DEFAULT VALUE WILL BE USED

**Explanation:** The Generic MSC exit routine found that an invalid value was specified for the keyword.

**System action:** Processing continues. The default value is set for the keyword.

**User response:** Correct the error and resubmit the job.

**GEX2918E**  DYNAMIC ALLOCATION FAILED FOR name RC=mnnn, RSN=mnnn, INFO=mnnn

**Explanation:** The Generic MSC exit routine failed to dynamically allocate the load library. The dynamic allocation return code RC=mnnn and reason code RSN=mnnn are included in the message.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Check the SVC 99 return code and reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

**GEX2919E**  DYNAMIC DEALLOCATION FAILED FOR name RC=mnnn, RSN=mnnn, INFO=mnnn

**Explanation:** The Generic MSC exit routine failed to dynamically deallocate the load library. The dynamic deallocation return code RC=mnnn and reason code RSN=mnnn are included in the message.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Check the SVC 99 return code and reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

---

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Check the SVC 99 return code and reason code. Correct the error and resubmit the job. If the problem persists, contact IBM Software Support.

**GEX2920E**  name IS NOT APF-AUTHORIZED. INIT FOR EXIT name FAILED.

**Explanation:** The load library name is not APF-authorized. Initialization for the MSC exit routine name failed.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Ensure the load library is APF-authorized and resubmit the job.

**GEX2921E**  COULD NOT LOCATE MSC ENTRY POINTS FOR EXIT name. INIT FOR EXIT name FAILED.

**Explanation:** Entry points for the named MSC exit could not be located. Initialization for the named MSC exit failed.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Make sure VECTOR=MSCVTABLE is used in the DFSMSCVT macro in the named MSC exit.

**GEX2923E**  IMS GENERIC MSC ESTAE CREATE FAILED, RC=####

**Explanation:** The Generic MSC exit routine failed to create its ESTAE recovery environment.

**System action:** The IMS Control Region abends U=4014

**User response:** Retain any diagnostic information and contact IBM Software Support.

**GEX2924I**  GEXMSCE0 NOT LOADED BY IMS

**Explanation:** The Generic MSC exit routine DFSMSCE0 was not the first MSC exit in the IMS execution library concatenation.

**System action:** The IMS Control Region abends U=4014

**User response:** Ensure that the Generic MSC exit routine DFSMSCE0 is the first MSC exit routine in the IMS concatenation.
**GEX2925E** ERROR OPENING LOAD LIB \textit{name}

**Explanation:** An error occurred when the Generic MSC exit routine attempted to open the named load library.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Retain any diagnostic information and contact IBM Software Support.

---

**GEX2926I** Informational Messages

**Explanation:** These messages include several types of informational messages that display and describe the Generic MSC exit routine processing.

**System action:** The IMS Control Region continues normally.

**User response:** None.

---

**GEX2928E** IMS GENERIC MSC EXIT

---

**Generic MSC exit user abend codes**

The IMS Tools Generic MSC exit issues user abend codes that can help you with troubleshooting.

Generic MSC exit uses only one abend code: 4014

For each abend code, the following information is provided where applicable:

**Explanation:**
The Explanation section explains what the abend code means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
The System Action section explains what the system will do next.

**User Response:**
The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

---

**4014**

**Explanation:** An error occurred while the Generic MSC exit routine was being processed. Additional error messages are issued that indicate the cause of the error. The following abend subcodes provide more information about the error:

- \texttt{x'66'} IMS RELEASE NOT SUPPORTED
- \texttt{x'67'} LOAD GEXIINTX FAILED
- \texttt{x'68'} INVALID ENVIRONMENT
- \texttt{x'69'} GEXIMSCX NOT LOADED

- \texttt{x'CA'} LOAD GEXICHKX FAILED
- \texttt{x'CB'} LOAD GEXIMSCX FAILED
- \texttt{x'CC'} GEXMSCE0 NOT LOADED BY IMS
- \texttt{x'CD'} DUPLICATE INIT CALL
- \texttt{x'CE'} INVALID CALL
- \texttt{x'CF'} MVS NAME TOKEN SERVICES FAILED
Generic QSN exit usage

The IMS Tools Generic Queue Space Notification exit (also referred to as the Generic QSN exit with product prefix GEXQ) enables multiple copies of the IMS QSN exit routine (DFSQSSP0) to exist and to be driven within a single IMS environment. The Generic QSN exit drives other QSN exit routines.

Topics:
- "Generic QSN exit overview"
- "Generic QSN exit definitions" on page 38
- "Global processing parameters" on page 39

Generic QSN exit overview

The IMS Tools Generic Queue Space Notification exit (also referred to as the Generic QSN exit with product prefix GEXQ) enables multiple copies of the IMS QSN exit routine (DFSQSSP0) to exist and to be driven within a single IMS environment. The Generic QSN exit drives other QSN exit routines.

The Generic QSN exit can be used with several IMS Tools products to protect against local buffer overflows. You can also have your own QSN exit routine.

The purpose of the Generic QSN exit is to be a driver for other QSN exits. The Generic QSN exit is product-independent and does no product-specific work. It calls other QSN exits during IMS processing for queue space monitoring.

The Generic QSN exit is designed to operate on any hardware and software configuration that supports the required versions of IMS. For detailed specifications, refer to the appropriate Program Directory for the IMS Tool that you are using.

Exit control flow

During the initialization process, IMS calls the IMS Tools Generic Exits. The generic exits then call other exits that are defined in their PROCLIB members.
The exit control flow during IMS initialization is summarized in the following figure:

```
BALR R14,R15 CALL USER EXIT
B      PASTID SKIP ID
DC     CL16'GENERIC EXITS' EYECATCHER
PASTID DS 0H
```

**Important:** Ensure that you do not include the DFSQSSP0 in front of the Generic QSN exit in the exit list. Otherwise, a recursive call occurs, which causes a loop.

An exit can determine if it was called by the Generic QSN exit by checking for a literal, as shown in the following code. The literal is pointed by the register 14 + x'4'.

**Generic QSN exit activation**

To activate this exit, set up the required member that is described in "Generic QSN exit definitions" on page 38.
If you do not need this exit, do not configure it.

If no exit definitions are found, one of the following conditions occurs:

- If the Generic QSN exit is NOT first in //STEPLIB, the exit returns to its caller without passing control to the next DFSQSSP0 in the //STEPLIB stack.
- If the Generic QSN exit is first in //STEPLIB, the exit transfers control to the next DFSQSSP0 in the //STEPLIB stack and then removes itself from the IMS control region. The Generic QSN exit is not called by IMS again.

In both of the previous conditions, the Generic QSN exit is disabled.

**Important:** Before you disable a generic exit, ensure that the exit is not being used by another IMS tools product. If you disable a generic exit that is being used by another IMS tools product, that tool will not be able to operate.

**Generic QSN exit definitions**

The Generic QSN exit requires you to define a set of QSN exit routines. If these definitions are not set, the Generic QSN exit issues an error message and continues processing based on the setting of the INITFAIL parameter. No QSN exit routine can be invoked unless a set of QSN exit routines have been defined.

Generic QSN exit supports a BPE-style PROCLIB member for the QSN exit list.

The following two naming patterns for the definitions are supported so that you can use both IMS-specific definitions and, if needed, global definitions for cloned IMS environments:

- For IMS-specific definitions, the name follows the pattern: GEXQxxxx, where xxxx is the IMS ID.
- For global definitions that are not specific to any IMS system, the name is GEXQEXIT.

When Generic QSN exit initializes, the following search order is used to locate the exit routine definitions:

1. PROCLIB member GEXQxxxx
2. PROCLIB member GEXQEXIT

The first member that is located is used for the exit routine definitions. No other members are processed.

If no exit routine definition member is found or if the member is found but contains no definitions, the Generic QSN exit issues messages and continues processing based on the setting of the INITFAIL parameter.

**PROCLIB member definitions**

QSN exit routines are defined by using a PROCLIB member. Each exit routine must be defined by using a BPE-format control card.

The order of the statements in the member determines the order in which the exit routines are called.

**Important:** Because all QSN exits are able to affect the routing of a message, IMS Sysplex Manager’s copy of DFSQSSP0 must be the last exit that is defined in the PROCLIB member so that IMS Sysplex Manager has the priority in determining the IMS action to prevent buffer overflows.
This member can be in any data set within the //PROCLIB DD concatenation in
the IMS control region JCL.

The following example shows the format of the control card:
EXITDEF(TYPE(QSNE) EXITNAME(exit-name) LOADLIB(load-library))

The following rules apply to the control card:
• Each exit routine that is to be called must be specified in a separate EXITDEF() statement.
• The TYPE() keyword must be QSNE for this feature.
• The name of the exit routine is specified with the EXITNAME() keyword and
  must match a member name in the specified load library.
• The load library in which the exit routine resides is specified with the
  LOADLIB() keyword and must specify a cataloged load library that is
  APF-authorized and to which the IMS control region has access.

The Generic QSN exit tests the load library to ensure that it is APF-authorized
(DEBAPFIN bit in the DEB). If the load library is not APF-authorized, the exit
routine is not called and error messages are issued. Processing continues based on
the global statement specification.

The following sample shows a Generic QSN exit definition member for an IMS
control region that includes a customized QSN exit routine and an IMS Sysplex
Manager exit:
EXITDEF(TYPE(QSNE) EXITNAME(DFSQSSP0) LOADLIB(user.LOADLIB))
EXITDEF(TYPE(QSNE) EXITNAME(GJEQSSP0) LOADLIB(IMSSM.LOADLIB))

When the Generic QSN exit initializes, it loads each exit routine and calls it for
initialization in the order that is specified in the member.

Global processing parameters
In addition to defining the actual QSN exit routines, you can optionally use global
processing parameters to control the Generic QSN exit processing in error
situations. You specify these parameters in the PROCLIB member or in the load
module named GEXQOPT0.

Three situations can occur in which you can drive the Generic QSN exit
processing:
• When the Generic QSN exit is initializing and setup errors are detected, such as
  a missing exit routine definition member, control card errors, or when no exit
  routines are defined
• When processing an exit routine definition during initialization and the exit
  routine cannot be located or loaded, or the load library is not APF-authorized
• During invocation of an exit routine, an error occurs in the exit routine that
  causes an abend

In any of these cases, you can use a global parameter to make the Generic QSN
exit generate an abend for the job or perform recovery processing and continue.

The following example shows the format of the global parameter when it is
specified in the PROCLIB member:
GLOBAL(INITFAIL(ABEND | WARNING)
  EXITINIT(ABEND | TERMEXIT)
  EXITPROC(ABEND | TERMEXIT))
**INITFAIL parameter**
The INITFAIL parameter drives processing when an error occurs while attempting to initialize the Generic QSN exit.

The following errors can occur:
- The Generic QSN exit copy of DFSQSSP0 was not the first copy of DFSQSSP0 invoked.
- No exit definitions were found.
- Errors were detected in the exit definitions.

You can set the INITFAIL parameter to either of the following settings:

**INITFAIL=ABEND**
- This setting causes the Generic QSN exit to issue an error message and return to IMS with RC=12.

**INITFAIL=WARNING**
- This setting causes the Generic QSN exit to issue warning messages and return control to IMS with RC=0 to allow it to continue processing. In this case, no QSN exit routines are invoked during IMS processing.
- INITFAIL=WARNING is the default setting.

**EXITINIT parameter**
The EXITINIT parameter drives processing when an error occurs while attempting to locate or load the exit routine during the Generic QSN exit initialization or if the load library is not APF-authorized.

You can set the EXITINIT parameter to either of the following settings:

**EXITINIT=ABEND**
- This setting causes the Generic QSN exit to issue an error message and return to IMS with RC=12.

**EXITINIT=TERMEXIT**
- This setting causes the Generic QSN exit to issue an error message for the exit routine, and then continue processing the remaining exits.
- EXITINIT=TERMEXIT is the default setting.

**EXITPROC parameter**
The EXITPROC parameter drives the processing when an error occurs within the exit routine while it is processing.

You can set the EXITPROC parameter to either of the following settings:

**EXITPROC=ABEND**
- This setting causes the Generic QSN exit to issue an error message and return to IMS with RC=12.

**EXITPROC=TERMEXIT**
- This setting causes the Generic QSN exit to issue an error message for the exit routine, and then continue calling the remaining exits.
- EXITPROC=TERMEXIT is the default setting.

---

**Generic QSN exit messages**

The IMS Tools Generic QSN exit issues messages that can help you understand the state of the exit and help you resolve errors.
Errors that are encountered while processing data on the ISPF user interface panels are indicated through a short message that is displayed on the top right corner of the panel. To obtain more information about the error, press PF1.

The last character of each message is one of the following severity codes:

- **A** messages indicate action is required by the user before processing can continue.
- **E** messages indicate an error condition in which a requested function did not complete successfully. The condition might or might not require action.
- **I** messages are informational only.
- **W** messages warn the user of a possible error condition.

For each message, the following accompanying information is provided where applicable:

**Explanation:**
This information explains what the message text means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
This information explains what the system will do next.

**User Response:**
This information describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

---

**GEXQ902E IMS RELEASE NOT SUPPORTED**

Explanation: The Generic QSN exit is trying to run in an unsupported IMS release.

System action: The IMS Control Region abends with a U=4016 abend.

User response: Ensure that the Generic QSN exit is being run on a supported IMS release.

---

**GEXQ903E LOAD FAILED FOR GEXQ MODULE name**

Explanation: The Generic QSN exit could not locate the named module.

System action: The IMS Control Region abends with a U=4016 abend.

User response: Contact IBM Software Support.

---

**GEXQ905E IMS GENERIC QSN EXIT INITIALIZATION FAILED**

Explanation: Generic QSN exit has failed to initialize.

System action: The IMS Control Region abends with a U=4016 abend.

User response: See the previously issued error messages to determine the problem.

---

**GEXQ908E MVS NAME TOKEN SERVICE FAILED FOR name, RC=nnnn, RSN=nnnn**

Explanation: An invalid keyword was detected in the input data.
An unknown positional parameter was encountered in the input.

A keyword parameter was specified with an equal sign (KEYWORD=), but the keyword was defined as having a sublist of values. Sublists can be specified only in parentheses, and an equal sign can be used only if a keyword has a single value.

The input ended before the entire sublist or keyword was parsed.

A keyword was encountered (KEYWORD or KEYWORD=), but a value was expected.

An input number that was being parsed was out of the range that is allowed for its output field length. Decimal numbers must be less than or equal to 255 for 1-byte fields, 65535 for 2-byte fields, 16777215 for 3-byte fields, and 2147483647 for 4-byte fields. Hexadecimal numbers cannot have digits that are more than two times the number of bytes in the output field.

A parameter value that is defined as decimal containing non-decimal digits.

A parameter value that is defined as hexadecimal containing non-hexadecimal digits.

A parameter value that is defined as a key value parameter has an unknown key value.

A keyword parameter is present multiple times, but it is not defined as being repeatable.

A parameter that is defined with REQUIRED=YES was not found in the input data.

A character parameter value is longer than the defined output field length, and truncation is not allowed.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Contact the exit provider for support.

GEXQ911W  MISSING OR INVALID EXIT

Explanation: During initialization, the Generic QSN exit routine did not find a logger exit routine that was defined, or one was defined incorrectly.

System action: Processing continues based on the INITFAIL keyword setting.

User response: If no exit routines were defined (the PROCLIB member is empty), define the QSN exit routines by using a PROCLIB member or a load module. If the exit definition is invalid, see the Generic QSN exit routine setup and usage information, and then redefine the exit routine.

If you want to disable the Generic QSN exit, remove the empty PROCLIB member. When an exit is not configured, it is disabled.

GEXQ912E  DUPLICATE EXIT DEFINITION

Explanation: A duplicate exit definition was found.

System action: Processing continues based on the INITFAIL keyword setting.

User response: Delete the duplicate QSN exit routine definition from the PROCLIB member or load module.

GEXQ915E  ERROR LOADING EXIT name FROM LOADLIB=name

Explanation: An error occurred when the Generic QSN exit routine attempted to load the exit routine from the load library name. The exit routine either does not exist in the library, or the library is not APF-authorized.

System action: Processing continues based on the EXITINIT keyword setting.

User response: Ensure that the exit routine exists and that the load library is APF-authorized.

GEXQ916W  GEXQOPT0 NOT FOUND. DEFAULT GLOBAL OPTIONS WILL BE USED

Explanation: An invalid value was specified for the keyword.

System action: Processing continues. The default value is set for the keyword.

User response: Correct the error and resubmit the job.
**GEXQ917W**  KEYWORD=name IS NOT VALID. DEFAULT VALUE WILL BE USED

**Explanation:** An invalid value was specified for the keyword.

**System action:** Processing continues. The default value is set for the keyword.

**User response:** Correct the error and resubmit the job.

**GEXQ920E**  name IS NOT APF-AUTHORIZED. INIT FOR EXIT name FAILED.

**Explanation:** The load library name is not APF-authorized. Initialization for the QSN exit routine name failed.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** APF-authorize the load library and resubmit the job.

**GEXQ923E**  IMS GENERIC QSN ESTAE CREATE FAILED, RC=nnnn

**Explanation:** The Generic QSN exit routine failed to create its ESTAE recovery environment.

**System action:** The IMS Control Region abends with a U=4016 abend.

**User response:** Contact IBM Software Support.

**GEXQ924I**  GEXQSSP0 NOT LOADED BY IMS

**Explanation:** The Generic QSN exit routine DFSQSSP0 was not the first logger exit routine found in the IMS execution library concatenation.

**System action:** The IMS Control Region abends with a U=4016 abend.

**User response:** Reorganize the IMS library concatenation so that the Generic QSN exit routine DFSQSSP0 is the first QSN exit routine in the concatenation.

**Generic QSN exit user abend codes**

The IMS Tools Generic QSN exit issues user abend codes that can help you with troubleshooting.

Generic QSN exit uses only one abend code: 4016.

For each abend code, the following information is provided where applicable:

**Explanation:**

The Explanation section explains what the abend code means, why it occurred, and what its variable entry fields are (if any).

**System Action:**

The System Action section explains what the system will do next.

**GEXQ925E**  ERROR OPENING LOAD LIB name

**Explanation:** An error occurred when the Generic QSN exit routine attempted to open load library name.

**System action:** Processing continues based on the EXITINIT keyword setting.

**User response:** Contact IBM Software Support.

**GEXQ926I**  Informational Messages

**Explanation:** Various informational messages showing Generic QSN exit processing.

**System action:** The IMS Control Region continues normally.

**User response:** No action is required.

**GEXQ928E**  IMS GENERIC QSN EXIT TERMINATED DUE TO ERROR

**Explanation:** A Generic QSN exit component has terminated because of an error.

**System action:** The Generic QSN exit routine is disabled. Generic QSN exit functions are no longer available.

**User response:** See the previously issued error messages to determine the problem.

**GEXQ930E**  EXIT name TERMINATED DUE TO ERROR

**Explanation:** The QSN exit routine name has been terminated because of an error.

**System action:** The Generic QSN exit routine can no longer drive the name QSN exit routine.

**User response:** See the previously issued error messages to determine the problem.
User Response: The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

**Explanation:** An error occurred while the Generic QSN exit routine was being processed. Additional error messages are issued that indicate the cause of the error. The following abend subcodes provide more information about the error:

- **x'66'**  
  IMS RELEASE NOT SUPPORTED
- **x'67'**  
  LOAD GEXQINTX FAILED
- **x'68'**  
  INVALID ENVIRONMENT
- **x'69'**  
  GEXQSSPX NOT LOADED
- **x'CB'**  
  LOAD GEXQSSPX FAILED
- **x'CC'**  
  GEXQSSP0 NOT LOADED BY IMS
- **x'CD'**  
  DUPLICATE INIT CALL
- **x'CE'**  
  INVALID CALL
- **x'CF'**  
  MVS NAME TOKEN SERVICES FAILED
- **x'D0'**  
  ERROR READING PROCLIB MEMBER
- **x'D1'**  
  ERROR PARSING PROCLIB MEMBER
- **x'D2'**  
  CREATE ESTAE FAILED
- **x'D3'**  
  LOAD GEXQESTX FAILED
- **x'D4'**  
  NO EXIT DEFINITIONS
- **x'D5'**  
  DUPLICATE EXIT DEFINITIONS
- **x'D6'**  
  LOAD GEXQLODX FAILED
- **x'12D'**  
  ALLOCATE LOADLIB FAILED
- **x'12E'**  
  LOAD EXIT FAILED
- **x'12F'**  
  OPEN LOADLIB FAILED

**System action:** Processing is dependent on the settings of the IMS Queue Space Notification exit routine global processing options.

**User response:** Review the IMS Control Region job log for error messages that are associated with the problem. Correct the error if possible. If the problem persists, retain any diagnostic information and contact IBM Software Support.
Chapter 3. IMS Tools Online System Interface

IMS Tools Online System Interface is a general purpose command interface that allows IMS tools to interface with all supported IMS versions.

Information about IMS Tools Online System Interface is provided in the following topics:

Guidelines for using IMS Tools Online System Interface

IMS Tools Online System Interface is a general purpose command interface that allows IMS tools to interface with all supported IMS versions.

IMS Tools Online System Interface is a component of the IBM Tools Base for z/OS and is a prerequisite for multiple IMS tools. IMS Tools Online System Interface can also be shared with multiple IMS tools. The product prefix for IMS Tools Online System Interface is FOI.

The version of IMS Tools Online System Interface that is contained in the Tools Base supersedes and replaces all previous versions. Any IMS tools product that uses the generic exits contain a REQ(HAHN110), which signals to SMP/E that this FMID must already be installed, or that its installation is required at the same time the IMS tool product is installed.

Always refer to the appropriate Program Directory for any IMS tools product to determine the prerequisites for installing and operating the product.

Migration considerations for IMS Tools Online System Interface

If you are using earlier versions of IMS Tools Online System Interface, you can safely install the most current version of the IMS Tools Online System Interface (FMID HAHN110) into your environment, but you must first review the following migration considerations:

- The current FMID is fully compatible with prior releases of IMS Tools products and common code.
- In the current FMID, IMS Tools Online System Interface does not ship its partner exit under the name DFSPPUE0. The IMS Tools Online System Interface partner exit is named FOIPPU0 and must be defined to the Generic Partner exit.
- In the current FMID, IMS Tools Online System Interface no longer searches for and invokes another DFSPPUE0. All DFSPPUE0 instances must be defined to the Generic Partner exit.
- You can continue to use your existing FOImsidP PROCLIB member. You do not need to make any changes to the PROCLIB member for the current FMID.
- If you are upgrading from IMS Tools Online System Interface V1.1 (FMID H2B7110) or V1.2 (FMID H2B7120) to the current FMID, you must define the IMS Tools Online System Interface partner exit (FOIPPU0) to the Generic Partner exit (GPR).
- If you are using IMS Tools Online System Interface in an environment that contains multiple IMS Tools products at mixed version and release levels, you must always install and run the highest level of IMS Tools Online System Interface that is available.
After installing the Tools Base, see “Configuring IMS Tools Online System Interface” to configure the IMS Tools Online System Interface to work with the Generic Partner exit.

## Configuring IMS Tools Online System Interface

Information about configuring IMS Tools Online System Interface and other Tools Base components for IMS is provided in IBM Tools Base for z/OS Configuration for IMS.

You can also download a PDF version of this information from the IMS Tools Product Documentation page.

## IMS Tools Online System Interface messages

The IMS Tools Online System Interface issues messages that can help you understand the state of the interface and help you resolve errors.

Errors that are encountered while processing data on the ISPF user interface panels are indicated through a short message that is displayed on the top right corner of the panel. To obtain more information about the error, press PF1.

The last character of each message is one of the following severity codes:

- **A** messages indicate action is required by the user before processing can continue.
- **E** messages indicate an error condition in which a requested function did not complete successfully. The condition might or might not require action.
- **I** messages are informational only.
- **W** messages warn the user of a possible error condition.

For each message, the following accompanying information is provided where applicable:

**Explanation:**
This information explains what the message text means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
This information explains what the system will do next.

**User Response:**
This information describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

## Return and reason codes for client exception processing

These are the IMS Tools Online System Interface exception processing return and reason codes.

**RC 12**

**Reason Codes:**

- **01** The specified client function is not an IMS supported command verb.
02 The specified client function is not supported by IMS Tools Online System Interface.

Reason code 02 also provides the actual parsing error in the Variable Response Data Return Code. See the FOI210I message for a description of this code.

<table>
<thead>
<tr>
<th>Reason code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>IMS SSCT not found</td>
</tr>
<tr>
<td>101</td>
<td>IMS Release unknown</td>
</tr>
<tr>
<td>105</td>
<td>Error loading FOIITK0X</td>
</tr>
<tr>
<td>106</td>
<td>Unable to locate DISP WA</td>
</tr>
<tr>
<td>107</td>
<td>Unable to allocate QSAV</td>
</tr>
<tr>
<td>110</td>
<td>Unable to create ITASK</td>
</tr>
<tr>
<td>112</td>
<td>Error posting ITASK</td>
</tr>
<tr>
<td>200</td>
<td>GETMAIN failed for FOIMCB</td>
</tr>
<tr>
<td>201</td>
<td>IMS Release not supported</td>
</tr>
<tr>
<td>202</td>
<td>GETMAIN failed for volatile work area</td>
</tr>
<tr>
<td>203</td>
<td>Load failed for IMS Tools Online System Interface abend intercept routine FOIAIR0X</td>
</tr>
<tr>
<td>204</td>
<td>IMS Tools Online System Interface ESTAE request failed</td>
</tr>
<tr>
<td>205</td>
<td>GETMAIN failed for 24 BIT dynamic storage</td>
</tr>
<tr>
<td>210</td>
<td>LOAD failed for dependent functional action module FOIADM0X</td>
</tr>
<tr>
<td>215</td>
<td>PROCLIB read error</td>
</tr>
<tr>
<td>220</td>
<td>XCF group name invalid</td>
</tr>
<tr>
<td>240</td>
<td>Load failed for XCF message exit initialization module FOIMSGIX</td>
</tr>
<tr>
<td>241</td>
<td>Initialize XCF message exit failed</td>
</tr>
<tr>
<td>242</td>
<td>Load failed for action message module FOIACTMX</td>
</tr>
<tr>
<td>250</td>
<td>IXJOIN failure</td>
</tr>
</tbody>
</table>

**System action:** The IMS Tools Online System Interface environment is not initialized and control is returned to IMS. If the failure was detected by module DFSPPUE0, IMS issues abend U740. If the failure was detected by FOIITK0X, IMS completes its initialization processing without IMS Tools Online System Interface.

**User response:** Using the provided reason code, correct the stated failure and restart IMS, which initiates IMS Tools Online System Interface processing.

<table>
<thead>
<tr>
<th>Reason code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>GETMAIN failed for FOIMCB</td>
</tr>
<tr>
<td>201</td>
<td>IMS Release not supported</td>
</tr>
<tr>
<td>202</td>
<td>GETMAIN failed for volatile work area</td>
</tr>
<tr>
<td>203</td>
<td>Load failed for IMS Tools Online System Interface abend intercept routine FOIAIR0X</td>
</tr>
<tr>
<td>204</td>
<td>IMS Tools Online System Interface ESTAE request failed</td>
</tr>
<tr>
<td>205</td>
<td>GETMAIN failed for 24 BIT dynamic storage</td>
</tr>
<tr>
<td>210</td>
<td>LOAD failed for dependent functional action module FOIADM0X</td>
</tr>
<tr>
<td>215</td>
<td>PROCLIB read error</td>
</tr>
<tr>
<td>220</td>
<td>XCF group name invalid</td>
</tr>
<tr>
<td>240</td>
<td>Load failed for XCF message exit initialization module FOIMSGIX</td>
</tr>
<tr>
<td>241</td>
<td>Initialize XCF message exit failed</td>
</tr>
<tr>
<td>242</td>
<td>Load failed for action message module FOIACTMX</td>
</tr>
<tr>
<td>250</td>
<td>IXJOIN failure</td>
</tr>
</tbody>
</table>

**System action:** The IMS Tools Online System Interface environment is not initialized and control is returned to IMS. If the failure was detected by module DFSPPUE0, IMS issues abend U740. If the failure was detected by FOIITK0X, IMS completes its initialization processing without IMS Tools Online System Interface.

**User response:** Using the provided reason code, correct the stated failure and restart IMS, which initiates IMS Tools Online System Interface processing.

<table>
<thead>
<tr>
<th>Reason code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>GETMAIN failed for FOIMCB</td>
</tr>
<tr>
<td>201</td>
<td>IMS Release not supported</td>
</tr>
<tr>
<td>202</td>
<td>GETMAIN failed for volatile work area</td>
</tr>
<tr>
<td>203</td>
<td>Load failed for IMS Tools Online System Interface abend intercept routine FOIAIR0X</td>
</tr>
<tr>
<td>204</td>
<td>IMS Tools Online System Interface ESTAE request failed</td>
</tr>
<tr>
<td>205</td>
<td>GETMAIN failed for 24 BIT dynamic storage</td>
</tr>
<tr>
<td>210</td>
<td>LOAD failed for dependent functional action module FOIADM0X</td>
</tr>
<tr>
<td>215</td>
<td>PROCLIB read error</td>
</tr>
<tr>
<td>220</td>
<td>XCF group name invalid</td>
</tr>
<tr>
<td>240</td>
<td>Load failed for XCF message exit initialization module FOIMSGIX</td>
</tr>
<tr>
<td>241</td>
<td>Initialize XCF message exit failed</td>
</tr>
<tr>
<td>242</td>
<td>Load failed for action message module FOIACTMX</td>
</tr>
<tr>
<td>250</td>
<td>IXJOIN failure</td>
</tr>
</tbody>
</table>

**System action:** The IMS Tools Online System Interface environment is not initialized and control is returned to IMS. If the failure was detected by module DFSPPUE0, IMS issues abend U740. If the failure was detected by FOIITK0X, IMS completes its initialization processing without IMS Tools Online System Interface.

**User response:** Using the provided reason code, correct the stated failure and restart IMS, which initiates IMS Tools Online System Interface processing.

<table>
<thead>
<tr>
<th>Reason code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>GETMAIN failed for FOIMCB</td>
</tr>
<tr>
<td>201</td>
<td>IMS Release not supported</td>
</tr>
<tr>
<td>202</td>
<td>GETMAIN failed for volatile work area</td>
</tr>
<tr>
<td>203</td>
<td>Load failed for IMS Tools Online System Interface abend intercept routine FOIAIR0X</td>
</tr>
<tr>
<td>204</td>
<td>IMS Tools Online System Interface ESTAE request failed</td>
</tr>
<tr>
<td>205</td>
<td>GETMAIN failed for 24 BIT dynamic storage</td>
</tr>
<tr>
<td>210</td>
<td>LOAD failed for dependent functional action module FOIADM0X</td>
</tr>
<tr>
<td>215</td>
<td>PROCLIB read error</td>
</tr>
<tr>
<td>220</td>
<td>XCF group name invalid</td>
</tr>
<tr>
<td>240</td>
<td>Load failed for XCF message exit initialization module FOIMSGIX</td>
</tr>
<tr>
<td>241</td>
<td>Initialize XCF message exit failed</td>
</tr>
<tr>
<td>242</td>
<td>Load failed for action message module FOIACTMX</td>
</tr>
<tr>
<td>250</td>
<td>IXJOIN failure</td>
</tr>
</tbody>
</table>

**System action:** The IMS Tools Online System Interface environment is not initialized and control is returned to IMS. If the failure was detected by module DFSPPUE0, IMS issues abend U740. If the failure was detected by FOIITK0X, IMS completes its initialization processing without IMS Tools Online System Interface.

**User response:** Using the provided reason code, correct the stated failure and restart IMS, which initiates IMS Tools Online System Interface processing.
**User response:** Client programs might hang if they are waiting for IMS Tools Online System Interface response notification. Client programs should provide for timeout processing.

**FOI100I**

**TOOLS ONLINE INTERFACE ENABLED, XCF GROUP=g, CMD Security=h**

**Explanation:** The IMS Tools Online System Interface environment successfully initialized and joined the XCF group g, regardless of whether h is YES or NO.

**System action:** Processing continues. The IMS Tools Online System Interface environment is ready to receive client requests.

**User response:** None.

**FOI101I**

**TOOLS ONLINE INTERFACE DISABLED, XCF GROUP=g, TERM=SHUTDOWN | ABEND**

**Explanation:** The IMS Tools Online System Interface environment has shutdown because of the specification, TERM=SHUTDOWN or IMS Tools Online System Interface encountered an abnormal termination condition, TERM=ABEND and has left the XCF group g.

**System action:** If IMS Tools Online System Interface has shutdown, the IMS Tools Online System Interface environment is no longer active. If IMS Tools Online System Interface has abnormally terminated, the IMS Tools Online System Interface environment terminates. The IMS Tools Online System Interface environment automatically re-initializes if the PROCLIB member keyword RESTART=YES is specified.

**User response:** None, the IMS Tools Online System Interface environment leaves the XCF group and terminates processing.

**FOI102I**

**PSW=psw CODE=code MODID=id EPA=epa DATA AT a=data Rx=yy**

**Explanation:** The IMS Tools Online System Interface environment has encountered an abnormal termination condition. The IMS Tools Online System Interface PROCLIB member keyword DUMP=NO was specified to suppress dump processing. IMS Tools Online System Interface ESTAE processing sends diagnostic information to the system console. The diagnostic information includes the following:

- The abending PSW and the system or user completion code.
- The abending module ID (and entry point if possible).
- The failing instruction string.
- The abending general registers.

**System action:** IMS Tools Online System Interface continues with abnormal termination processing.

**User response:** None, the IMS Tools Online System Interface environment leaves the XCF group and terminates processing.

**FOI105E**

**XCF SEND FAILURE, RC=rc, RSN=rsn**

**Explanation:** An IMS Tools Online System Interface action module attempted to send a response message to a target client via XCF services. The send request was failed by XCF with return and reason codes defined by RC and RSN respectively.

**System action:** None.

**User response:** None.

**FOI110I**

**ACTION INITIATED**

**Explanation:** All IMS Tools Online System Interface commands cause this message to be displayed with the command text attached at the end for up to 90 bytes. This message indicates that the command action has been initiated.

**System action:** None.

**User response:** None.

**FOI200I**

**INITIALIZATION COMPLETE**

**Explanation:** Initialization for IMS Tools Online System Interface has successfully completed. All IMS release dependent and independent modules have been loaded and Cell Pools (CPOOLS) have been created and initialized.

**System action:** IMS Tools Online System Interface initialization continues.

**User response:** None.

**FOI201E**

**INITIALIZATION FAILED**

**Explanation:** One of the following failures occurred:

- Loading or initialization of IMS release dependent routines failed.
- Loading or initialization of IMS release independent routines failed.
- Cell Pool creation and initialization failed.
- XCF Message exit services failed.

**System action:** The IMS Tools Online System Interface ITASK abends.

**User response:** Review the IMS Control Region job log for other messages associated with the abend.
Ensure that all required modules are in the //STEPLIB concatenation.

Contact IBM Software Support if necessary and provide them with the dump and messages.

---

**FOI203E**  **IMODULE LOAD FAILED FOR module, RC=retcode**

**Explanation:** An error has occurred processing an IMS IMODULE LOAD service call.

The module could not be loaded. The return code *retcode* is the return code from the IMS IMODULE LOAD service call.

**System action:** The IMS Tools Online System Interface ITASK terminates with a user abend.

**User response:** Check the IMS IMODULE LOAD return codes as described in appendix about MIS system service codes in *IMS Messages and Codes Vol. 1*.

Make sure all required modules are in the IMS or IMS Tools Online System Interface program libraries and sufficient region size is specified with the IMS Control region startup procedure.

---

**FOI204E**  **SRB SERVICES INITIALIZATION FAILED, RC=retcode**

**Explanation:** An attempt to IMODULE LOAD the XCF SRB Message exit or XCF FRR routine has failed.

**System action:** The IMS Tools Online System Interface ITASK abends.

**User response:** Make sure all required modules are in IMS or IMS Tools Online System Interface program libraries and sufficient region size is specified with the IMS Control region startup procedure.

---

**FOI210I**  **PARSING FAILED FOR COMMAND ccccccc, RC=rc, RSN=rsn**

**Explanation:** One or more errors were encountered when parsing the action command *ccccccc* that was issued by the client.

Message FOI210I is issued in conjunction with message FOI110I.

**System action:** The failing command is rejected and a message is sent back to the client.

**User response:** Take the appropriate action based on the return (*rc*) and reason code (*rsn*) you received. Correct the erroneous command and resubmit the transaction from the client.

RC=00  Parsing has completed successfully.

RC=04  Warnings

RSN=514  The AREA keyword is not supported.

RC=08  ERRORS

---

**RSN=501**  The command verb was not found in CVB.

**RSN=502**  Invalid command verb.

**RSN=503**  The GET CPOOL attempt failed.

**RSN=510**  The required 'DB' keyword was not found.

**RSN=511**  The 'DB', 'DD', 'AREA' keyword has no parameters.

**RSN=512**  More than one 'DB' or 'AREA' keyword was specified.

**RSN=513**  Too many parameters were specified for 'DB' or 'AREA' keyword.

**RSN=515**  LOCAL and GLOBAL parameters are mutually exclusive.

**RSN=516**  Duplicate keywords were found.

**RSN=517**  An invalid keyword was found.

**RSN=518**  Generic DBnames are not supported.

**RSN=519**  The 'ALL' keyword is not allowed or it is mixed with other database names.

**RSN=520**  An invalid access parameter was detected.

**RSN=521**  GLOBAL and ACCESS parameters are mutually exclusive.

**RSN=522**  Either the INTTIME or INTNUM parameter is not numeric.

**RSN=523**  The INTTIME parameter is not 1 =< t =< 3600.

**RSN=524**  The INTNUM parameter is not 1 =< n =< 60.

**RSN=525**  The required 'DD' keyword was not found.

**RSN=526**  The 'DD' keyword is not supported for this command.

**RSN=527**  Multiple DDNAMEs were specified.

**RC=12**  INVALID FUNCTION CODE
**FOI212I • FOI511E**

**FOI212I  ERROR IN ccccccc COMMAND PROCESSOR, RC=rc, RSN=rs.**

**Explanation:** An error was encountered when processing action command ccccccc (DBRTEST or BMPLIST).

Message FOI210I is issued in conjunction with message FOI110I.

Message FOI212I is not displayed for RC=04.

**Return Codes**

- **00** Successful completion
- **04** Warning completion (no message is issued)
- **01** One or more DB names or area names are in error.
- **30** DBRTEST failed - the DB or area is used by BMP.
- **31** DBRTEST failed - the DB or area is used by DBCTL or CICS®.
- **32** DBRTEST failed - the DB or area is used by WFL.
- **33** OLR is active for this database or area.
- **34** ORS recovery is active.
- **08** Critical error

**Reason Codes**

- **01** An invalid DB resource was encountered.
- **02** An invalid function code was encountered.
- **05** The database or area is invalid.
- **06** The database or area was not initialized.
- **08** Area not found.
- **09** Found full-function DB for AREA keyword.
- **12** The specified ALL keyword is invalid.
- **13** More than 6240 database or area names were found in the input.
- **14** The buffer is full before the end of your input.
- **12** CATASTROPHIC ERROR

**Reason Codes**

- **01** CPOOL was not obtained.

- **48** XCF SEND ERROR

**Reason Codes**

See the IXCMSGO documentation for error return and reason codes contained in the request AWE.

**System action:** The failing command is rejected and a message is sent back to the client.

**User response:** Take the appropriate action based on the return and reason code you received.

Correct the error and resubmit the transaction from the client.

**FOI501E  CLIENT API INITIALIZATION FAILURE, REASON=rstn**

**Explanation:** The IMS Tools Online System Interface client API initialization has failed.

The reason codes are:

- **100** Failed to get storage for the FOICPRMA master control block.
- **102** Failed to get storage for the CABVOLS volatile working storage.
- **103** Failed to load the FOICAPI0 API service modules.
- **105** Failed to get the storage necessary to issue an error message.

**System action:** A non-zero return code is returned to the client applications.

**User response:** Contact IBM Software Support.

**FOI505E  CLIENT API IS UNABLE TO OBTAIN STORAGE FOR MESSAGE WORK AREA**

**Explanation:** The IMS Tools Online System Interface has failed to obtain the storage necessary to issue a message.

**System action:** The API environment is terminated.

**User response:** Contact IBM Software Support.

**FOI510I  CLIENT API VERSION v.r.m INITIALIZATION COMPLETE**

**Explanation:** The IMS Tools Online System Interface client environment has successfully initialized.

**System action:** Processing continues, the client is ready to process API function requests.

**User response:** None.

**FOI511E  CLIENT API INITIALIZATION FAILED**

**Explanation:** A failure occurred initializing the IMS Tools Online System Interface client environment.

Message FOI512E or FOI513E will follow indicating the reason for failure.
System action: The IMS Tools Online System Interface client environment is not initialized and control is returned to the caller.

User response: Based on the accompanying error message, take appropriate action.

**FOI512E ** INVALID FUNCTION CODE FOR MODULE FOICINI0, FUNC=xxxx
Explanation: The IMS Tools Online System Interface client initialization module has received an invalid function code.

System action: The function code is rejected and initialization processing ends.

User response: Ensure that all of the required modules are in the //STEPLIB concatenation. Correct the error and resubmit the initialization process.

If the problem persists, contact IBM Software Support and provide them with documentation.

**FOI513E ** LOAD FAILED FOR MMMMMMMM, COMP=SCCC-RS
Explanation: The IMS Tools Online System Interface client initialization module has received an invalid function code.

System action: The initialization process ends.

User response: See the Load macro information in the z/OS V1R4.0 MVS Authorized Assembler Services Reference Vol 3 (LLACOPY-SDUMPX) for SCC-RS. Correct the error, and resubmit the initialization process.

If the problem persists, contact IBM Software Support and provide them with documentation.

**FOI520I ** TOOLS ONLINE INTERFACE CLIENT API ENABLED, XCF GROUP=gggggggg
Explanation: The IMS Tools Online System Interface client has successfully connected to the XCF group gggggggg.

System action: Processing continues. The client is ready to send and receive messages to the Tools Online System Interface.

User response: None.

**FOI521I ** TOOLS ONLINE INTERFACE CLIENT API DISABLED, XCF GROUP=gggggggg
Explanation: The IMS Tools Online System Interface client failed to connect to the XCF group gggggggg.

System action: Processing ends. The client is unable to send and receive messages to the Tools Online System Interface.

User response: Refer to message FOI522I for proper action.

**FOI522I ** TOOLS ONLINE INTERFACE CLIENT API JOIN FAILED FOR GROUP=gggggggg with RC=rc, RSN=rsnc
Explanation: The IMS Tools Online System Interface client failed to connect to the XCF group gggggggg.

System action: Processing ends. The client is unable to send and receive messages to the Tools Online System Interface.

User response: See the IXCJOIN macro in the z/OS V1R9.0 MVS Authorized Assembler Services Reference (EDT-IXG) for RC and Reason Code (RSNC). Correct the error, and resubmit the initialization process.

**FOI523E ** UNABLE TO OBTAIN WORKAREA FROM CELL POOL, RC=XX
Explanation: The IMS Tools Online System Interface client connect function was unsuccessful in obtaining a work area for IXCJOIN processing.

System action: Processing ends. The client is unable to send and receive messages to the Tools Online System Interface.

User response: Ensure that all of the required modules are in the //STEPLIB concatenation. Correct the error, and resubmit the function request.

If the problem persists, contact IBM Software Support and provide them with documentation.

**FOI524W ** CONNECT FAILED. RC=rc, RSN=rsn
Explanation: The IMS Tools Online System Interface client connect function was unsuccessful.

• Return Codes:
  - 12 = Critical Error
  - 16 = Catastrophic Error

• Reason Codes:
  - 201 – The TOSI client application could not query the specified group name.
    User response: Ensure that the group name is correct and/or the XCF group is active.
  - 202 – The TOSI client application could not join the specified group name.
    User response: The RC/RSN for IXCJOIN is returned to the TOSI client application’s response buffer. Contact IBM software support if necessary and provide them with documentation.
  - 203 - Cell Pool Error.
    User response: Ensure that all of the required modules are in the //STEPLIB concatenation. Contact IBM software support if necessary and provide them with documentation.

The IXCJOIN return and reason codes in this message are described in the z/OS V1R9.0 MVS Authorized Assembler Services Reference (EDT-IXG). Review the Chapter 3. IMS Tools Online System Interface 51
RC/RSN for proper action, correct the problem if possible, and try the operation again. Contact IBM software support if necessary and provide them with documentation.

System action: Processing ends. Control is returned to the caller.

User response: Correct the error, and resubmit the function request.

---

FOI525I  

TOSI CLIENT AOP INTERFACE
ENABLED FOR PLEX=plexname,
IMS=imsid, SCIJOB=scijobname,
SCINAME=sciname

Explanation: The IMS Tools Online System Interface has successfully established a processing environment for type-2 commands.

System action: Processing continues. The IMS Tools Online System Interface environment is ready to receive client requests.

User response: None.

---

FOI526I  

IMS COMMAND RACF CLASS IS racfclass

Explanation: The IMS Tools Online System Interface will use the racfclass class for command authorization.

System action: Processing continues. The IMS Tools Online System Interface environment is ready to receive client requests.

User response: None.

---

FOI527E  

USER NOT AUTHORIZED TO ISSUE COMMAND

Explanation: When the IMS Tools Online System Interface passed the command to the Operations Manager (OM) component, OM rejected the command because the user is not authorized to issue commands to OM.

System action: Processing continues. IMS Tools Online System Interface issues a non-zero return code to the client application.

User response: Check that the user's command authorization setup is accurate.

---

FOI530I  

REQUEST COMPLETED SUCCESSFULLY

Explanation: The IMS Tools Online System Interface client was successful in sending a message to IMS Tools Online System Interface elements in the server list.

System action: Processing continues.

User response: None.

---

FOI531W  

REQUEST COMPLETED RC=rc, RSN=rsn

Explanation: The IMS Tools Online System Interface client was successful in sending a message to IMS Tools Online System Interface element in the server list, but one more returned a warning condition.

System action: Processing continues.

User response: Review the RC/RSN for proper action.

- Return Code:
  - 4 = Warning

- Reason Codes:
  - 100 – The TOSI client application received a non-zero return code while sending a XCF message to the TOSI server elements in the server list.

  User response: Examine prior error messages and correct them if possible. Contact IBM Software Support if necessary and provide them with documentation.

  - 101 – The TOSI client application received a non-zero return code while sending a XCF message to at least one of the TOSI server elements in the server list but ONERROR = CONTINUE allowed the operation to continue processing.

  User response: Examine prior error messages and correct them if possible. Contact IBM Software Support if necessary and provide them with documentation.

  - 102 – ONERROR=STOP was specified by the TOSI client and at least one command processed by the Operations Manager (OM) has failed.

  User response: Examine prior error messages and correct them if possible. Contact IBM Software Support if necessary and provide them with documentation.

  - 103 – ONERROR=CONTINUE was specified by the TOSI client and at least one command processed by the Operations Manager (OM) has failed.

  User response: Examine prior error messages and correct them if possible. Contact IBM Software Support if necessary and provide them with documentation.

---

FOI532E  

REQUEST FAILED RC=rc, RSN=rsn

Explanation: The IMS Tools Online System Interface client was not successful in sending a message to IMS Tools Online System Interface elements in the server list.

System action: Processing continues.

User response: Contact IBM Software Support and provide them with the reason code.

- Return Code:
  - 8 = Critical Error

- Reason Codes:
− 200 – The TOSI client application received an error with the XCF environment while sending a XCF message to the TOSI server elements in the server list.
   **User response:** Try the operation again after allowing some time for the condition to clear. Contact IBM Software Support if necessary and provide them with documentation.
− 300 – The TOSI client application encountered an error with the TOSI server list.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 310 – The TOSI client application specified an incorrect API TYPE.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 311 – There is no IMS system registered with the Operations Manager (OM) component.
   **User response:** Make sure that at least one IMS system is active and has joined the IMSplex.
− 312 – There is a problem with the text or length of the command that was sent by the TOSI client.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 313 – The SAF AUTH call failed.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 314 – The SAF CREATE call failed.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 315 – The SAF LIST call failed.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 316 – The SAF UNLIST call failed.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 317 – The SAF DELETE call failed.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.
− 318 – Failed to get the CPOOL storage that is necessary for SAF processing.
   **User response:** Internal error. Contact IBM Software Support and provide them with documentation.

---

---

**FOI533I**  
**COMMAND EXECUTED. OM**  
**RC=XXXXXXXX, RSN=XXXXXXXX**

**Explanation:** The IMS Tools Online System Server submitted an IMS type-2 command by using the CSLOMCMD interface, and then Operation Manager (OM) returned a non-zero return code. A return code and reason code in the message are issued for your information.

**System action:** Processing continues.

**User response:** Inspect joblog. If the job fails, find the OM return code and reason code in the IMS manual for details about the failure. If the error is not caused by user set up, contact IBM Software Support and send them your joblog.

---

**FOI534E**  
**SAF service ERROR SAFRC=rc, SAFRSN=rsn, PRC=rc, PRSN=rsn**

**Explanation:** An SAF service error was received by the IMS Tools Online System Interface.

**System action:** Processing continues. The IMS Tools Online System Interface environment is ready to receive client requests.

**User response:** Check whether the SAF errors are accurate. Consult your SAF service documentation for an explanation of the return and reason codes.

---

**FOI540I**  
**RESPONSE COMPLETED SUCCESSFULLY**

**Explanation:** The IMS Tools Online System Interface client was successful in receiving a message from every IMS Tools Online System Interface element in the server list.

**System action:** Processing continues.

**User response:** None.

---

**FOI541I**  
**RESPONSE TIMEOUT VALUE NOT NUMERIC. TIMER=HHMMSSth KEYWORD IGNORED**

**Explanation:** The IMS Tools Online System Interface client received an invalid TIMER value.

**System action:** Processing continues with no TIMER value.

**User response:** For RESPONSE TIMEOUT processing, ensure that the TIMER= format is the same decimal format as DINTVL of the STIMER macro.

---

**FOI541W**  
**RESPONSE COMPLETED RC=rc, RSN=rsn**

**Explanation:** The TOSI client application was successful in the receive processing of a message from the TOSI server elements in the server list, but one
more returned a warning condition.

**System action:** Processing continues.

**User response:** Review the RC/RSN and correct the problem if possible. Contact IBM Software Support if necessary and provide them with documentation.

- **Return Code:**
  - 4 = Warning
- **Reason Codes:**
  - 100 – The TOSI client application processed the RESPONSE request successfully; however, there were no messages to process.

  **User response:** If a response message is expected, then try the operation again with the TIMER parameter. Contact IBM Software Support if necessary and provide them with documentation.

  - 101 – The TOSI client application processed the RESPONSE request successfully; however, there were no messages to process in the time that was specified.

  **User response:** If a response message is expected, then ensure that the TOSI server component is active and then try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

  - 102 – The TOSI client application processed the RESPONSE request successfully; however, there were no messages to process in the current cycle.

  **User response:** If a response message is expected, then try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

- 200 – The TOSI client application could not process the RETURNBUF request because an address for the buffer was not provided.

  **User response:** Try the operation again with a valid address.

- 201 – The TOSI client application encountered an error when setting timer services with the specified interval.

  **User response:** Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

- 202 – The TOSI client application encountered an error when setting timer services with the remaining time interval.

  **User response:** Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

- 203 – The TOSI client application encountered an error with the timer interval returned from timer services.

  **User response:** Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

- 204 – The TOSI client application encountered an error during termination of timer services.

  **User response:** For recursive messages with this reason code, contact IBM Software Support if necessary and provide them with documentation.

- 300 – The TOSI client application encountered an error with the TOSI server list.

  **User response:** Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

**FOI550I RETURN RESPONSE BUFFER COMPLETED SUCCESSFULLY**

**Explanation:** The IMS Tools Online System Interface client was successful in returning all cell pool storage for processing.

**System action:** Processing continues.

**User response:** None.

**FOI551W RETURNBUF COMPLETED. RC=rc, RSN=rsn**

**Explanation:** The IMS Tools Online System Interface client encountered a warning in returning cell pool storage.

**System action:** Processing continues.

**User response:** Review the RC/RSN for proper action and correct the error if possible or contact IBM Software Support if necessary and provide them with documentation.

- **Return Code:**
  - 4 = Warning
- **Reason Codes:**
  - 100 – The TOSI client application could not process the RETURNBUF request because an address for the buffer was not provided.

  **User response:** Try the operation again with a valid address.
**FOI552E**  RETURNBUF FAILED. RC=rc, RSN=rsn

**Explanation:** The IMS Tools Online System Interface client encountered an error in returning cell pool storage.

**System action:** Processing continues.

**User response:** Review the RC/RSN for the proper action and correct the error if possible, otherwise contact IBM Software Support and provide them with documentation.

- **Return Code:**
  - 8 = Critical
- **Reason Codes:**
  - 300 – The TOSI client application encountered an internal error while processing the RETURNBUF function.

**User response:** Try the operation again or contact IBM Software Support if necessary and provide them with documentation.

---

**FOI560I**  QUERYGROUP COMPLETED SUCCESSFULLY

**Explanation:** The IMS Tools Online System Interface client was successful in querying every IMS Tools Online System Interface in the XCF group and generating a server list.

**System action:** Processing continues.

**User response:** None.

---

**FOI561W**  QUERYGROUP COMPLETED RC=rc, RSN=rsn

**Explanation:** The IMS Tools Online System Interface client was successful in querying the XCF group.

**System action:** Processing continues, but a server list might not have been generated.

**User response:** Review the RC/RSN for the proper action and correct the error if possible, otherwise contact IBM Software Support and provide them with documentation.

- **Return Code:**
  - 4 = Warning
- **Reason Codes:**
  - 100 – The TOSI client application processed the QUERYGROUP request but the group did not return any members.
  - 101 – The TOSI client application processed the QUERYGROUP request but the server list is truncated.
  - 102 – The TOSI client application could not process the QUERYGROUP because there was an active server list detected.

**User response:** Free the active server list by issuing a RETURNBUF BUFFER=ALL command and then try the operation again.

---

**FOI562E**  QUERYGROUP FAILED RC=rc, RSN=rsn

**Explanation:** The IMS Tools Online System Interface client was not successful in querying the XCF group.

**System action:** Processing continues, but a server list is not generated.

**User response:** Use the XCF display commands to ensure that the XCF group is defined in the Sysplex. See the FOI563E message for details of the IXCQUERY failure condition and then retry the operation. If the problem persists, contact IBM Software Support.

---

**FOI563E**  QUERYGROUP IXCQUERY FAILED RC=rc, RSN=rsn

**Explanation:** The IMS Tools Online System Interface client was not successful in querying the XCF group.

**System action:** Processing continues, but a server list is not generated.

**User response:** The return and reason codes are described in the z/OS V1R9.0 MVS Authorized Assembler Services Reference (EDT-IXG). Review the return and reason codes to correct any problems, and then retry the operation. If the problem persists, contact IBM Software Support.

---

**FOI570I**  DISCONNECT COMPLETED SUCCESSFULLY

**Explanation:** The IMS Tools Online System Interface client has successfully disconnected from the XCF group.

**System action:** Processing continues.

**User response:** None.

---

**FOI571W**  DISCONNECT COMPLETED RC=rc, RSN=rsn

**Explanation:** The IMS Tools Online System Interface client disconnected from the XCF group with a warning condition.

**System action:** Processing continues.

**User response:** Review the RC/RSN and correct the error if possible, otherwise contact IBM software support and provide them with documentation.

- **Return Code:**
  - 4 = Warning
- **Reason Codes:**
- 701 – The TOSI client application processed the DISCONNECT request but detected an active server list.

**FOI572E CLIENT API XCF LEAVE FAILED, XCF GROUP=gggggggg RC=rc, RSN=rsn**

**Explanation:** The IMS Tools Online System Interface client could not disconnected from the XCF group.

**System action:** Processing continues.

**User response:** Review the RC/RSN, correct the error if possible, and contact IBM Software Support if necessary and provide them with documentation.

- **Return Code:**
  - 16 = Critical
- **Reason Codes:**
  - 703 – The TOSI client application encountered an internal error while obtaining storage for the DISCONNECT request.

**User response:** Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

**FOI5731 TOI CLIENT AOP INTERFACE TERMINATED FOR PLEX=plexname IMS=imsid SCIJOB=scijobname SCINAME=sciname**

**Explanation:** The IMS Tools Online System Interface terminated the environment for type-2 commands.

**System action:** Processing continues.

**User response:** None.

**FOI580I TOOLS ONLINE INTERFACE CLIENT API DISABLED, XCF GROUP=gggggggg**

**Explanation:** The IMS Tools Online System Interface client has successfully been disabled and control is returned to the caller.

**System action:** Processing continues.

**User response:** None.

**FOI581W DELETING modxname FAILED, RC=rc**

**Explanation:** The IMS Tools Online System Interface client termination module could not delete the module.

**System action:** Termination processing continues.

**User response:** None.

**FOI582W UNABLE TO OBTAIN DYNAMIC STORAGE, RC=rc**

**Explanation:** The IMS Tools Online System Interface client was not successful in obtaining storage for termination processing.

**System action:** The XCF SRB Message exit is terminated. The SDUMP failure has no impact on the IMS Tools Online System Interface ITASK.

**User response:** Additional information about SDUMP return codes and reason codes can be found in the z/OS z/OS V1R4.0 MVS Authorized Assembler Services Reference Vol 3 (LLACOPY-SDUMPX).

If the problem persists, contact IBM Software Support.
FOI998I DAE SUPPRESSED DUMP FOR ABEND abend

Explanation: The IMS Tools Online System Interface XCF SRB Message exit error recovery attempted to issue an SDUMP macro or service to capture diagnostic information for the ABEND abend in the message. The SDUMP was suppressed by MVS dump analysis and elimination (DAE).

IMS Tools Online System Interface SRB recovery routines gather symptom string data related to an abend and provide this data to MVS when an SDUMP is requested. If DAE is enabled, MVS suppresses duplicate (symptom strings identical to previously captured) dumps.

DAE is controlled through the MVS ADYSETxx PARMLIB member and the MVS SET DAE command. For details on specifying DAE options, see MVS Initialization and Tuning Reference.

System action: The SDUMP is skipped. The generated dump is suppressed if its symptom strings match a previous dump, and if the current DAE setting in ADYSETxx is set to either SUPPRESS or SUPPRESSALL.

User response: None.

FOI999E IMS XCF MESSAGE EXIT RTNE ABEND abend

Explanation: IMS Tools Online System Interface XCF Message exit error recovery detected an ABEND abend in component IMS Tools Online System Interface and subcomponent XCF Message exit RTNE.

System action: The XCF SRB Message exit error recovery attempts to generate a system dump to capture diagnostic data.

User response: Retain the generated system dump and contact IBM Software Support.

**IMS Tools Online System Interface abend codes**

The IMS Tools Online System Interface issues user abend codes that can help you with troubleshooting.

For each abend code, the following information is provided where applicable:

**Explanation:**
The Explanation section explains what the abend code means, why it occurred, and what its variable entry fields are (if any).

**System Action:**
The System Action section explains what the system will do next.

**User Response:**
The User Response section describes whether a response is necessary, what the appropriate response is, and how the response will affect the system or program.

<table>
<thead>
<tr>
<th>Abend Code</th>
<th>Reason Code</th>
<th>Explanation</th>
<th>System Action</th>
<th>User Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>0200</td>
<td></td>
<td>A nonrecoverable and possible installation error occurred in the IMS Tools Online System Interface XCF Message exit routine. The abend reason codes further describe the reasons for the error:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X'10'</td>
<td></td>
<td>Unable to obtain a Short-Stack Block (SSBL) from the CPOOL.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X'30'</td>
<td></td>
<td>Unable to obtain the requested message area from the CPOOL.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X'40'</td>
<td></td>
<td>An XCF IXCMSGI macro or service returned a nonzero return code.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X'50'</td>
<td></td>
<td>The DPSAW FUNC=ENQ failed when an attempt was made to enqueue the AWE with the input message buffer received from the client to the Tools Online System Interface Q-HDR.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 400         | Reason Code=10 | Internal Error indicating the requested cell pool (CPOOL) size is not available. | IMS Tools Online System Interface abnormally ends IMS command processing. | Update the Cell Pool Manager accordingly to support the requested pool size. |

| 400         | Reason Code=20 | Internal error indicating the Cell Pool Manager is not initialized. | IMS Tools Online System Interface abnormally ends IMS command processing. | Determine the cause for the Cell Pool Manager initialization failure. |
Explanation: The IMODULE LOAD of IMS dependent or independent routines failed during IMS Tools Online System Interface initialization. This user abend is preceded by messages FOI201E, FOI203E, or FOI204E.

The subcodes describe the nature of the failure:

X'133'  An error occurred loading IMS dependent or independent routines.

X'151'  The LOAD and initialization of SRB routines failed.
Chapter 4. Scrub utility

IBM Scrub utility (also referred to as Scrub) is a tool that removes sensitive data from IMS log records.

Scrubbing sensitive data from IMS log records

To remove from IMS log records any sensitive or confidential user data, such as customer business information, use the IMS Records User Data Scrub utility (FUDIMSPI, also known as Scrub). Use Scrub when you need to send IMS logs to an external organization; for example, before sending IMS logs to IBM for problem determination.

About this task

Scrub processes IMS logs created by IMS version 12, 13, and 14. You cannot use Scrub to process Common Queue Server (CQS) logs.

Scrub overwrites the contents of user data fields in a specific set of IMS log record types. For fields shorter than 10 bytes, Scrub overwrites the contents with null bytes (hexadecimal zero). For longer fields, Scrub overwrites the contents with -CLEARED-> followed by null bytes.

Scrubbed log records remain structurally intact and the same length.

Procedure

Create and submit JCL to run Scrub.

Example

The following JCL scrubs records within the specified time range in an IMS version 12 log.

```
//JOBNAME JOB ,NOTIFY=&SYSUID,CLASS=A,MSGCLASS=T
//SCRUB EXEC PGM=FUDIMSPI,PARM='V121'
//STEPLIB DD DISP=SHR,DSN=HLQ1.SHKTLOAD
//SYSPRINT DD SYSOUT=* 
//LOGINFO DD SYSOUT=* 
//SYSUT1 DD DISP=SHR,DSN=IMS.SLDS
//SYSUT2 DD DISP=(NEW,CATLG),DSN=IMS.SLDS.SCRUBBED, UNIT=SYSDA,SPACE=(CYL,(100,100),RLSE)
//SYSIN DD *
//SCRUB 
CODES(01-FF) 
START 2011-07-31-10.30.00.00 
STOP 2011-07-31-10.45.00.00 
ZONE (LOCAL) 
/*
Figure 6. JCL to scrub sensitive data from an IMS log

1 The EXEC statement for Scrub requires a PARM parameter. The PARM parameter specifies the release of IMS that created the IMS log to be scrubbed.

2 The SYSUT1 DD statement specifies the input IMS log.

© Copyright IBM Corp. 2001, 2014
The SYSUT2 DD statement specifies the output (scrubbed) IMS log.

The SYSIN DD statement specifies the Scrub commands.

This example contains optional commands that you can use to restrict the records processed by Scrub. To scrub all possible records in the input IMS log, specify the single command `SCRUB` with no other commands.

**What to do next**

Review the log information report. By default, Scrub writes this report to a LOGINFO output data set.

**IMS log record types that are scrubbed**

Scrub overwrites the contents of user data fields in these IMS log record types.

<table>
<thead>
<tr>
<th>IMS log record type (hexadecimal)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 03</td>
<td>Input message Output message</td>
</tr>
<tr>
<td>26</td>
<td>I/O toleration buffer was created</td>
</tr>
<tr>
<td>4002 4026</td>
<td>Checkpoint Message Queue Checkpoint I/O toleration buffer</td>
</tr>
<tr>
<td>4082 4086</td>
<td>Checkpoint EMHB Checkpoint DMHR</td>
</tr>
<tr>
<td>48</td>
<td>OLDS control information</td>
</tr>
<tr>
<td>6701 67ED 67EE 67EF 67FB 67FC 67FD 67FF</td>
<td>Communications trace  SB SNAP Trace  SB SNAP Trace  SB Compare Option  Invalid AWE  Buffer 'ALL' invalid  SNAP Trace  Exception Condition SNAP</td>
</tr>
</tbody>
</table>
Scrub JCL reference

The JCL to run Scrub must contain specific statements, such as a SYSIN DD statement for the data set containing Scrub commands.

EXEC statement

The EXEC statement to run the Scrub program requires a PARM parameter. The PARM parameter specifies the release of IMS that created the input IMS log. Ensure you enter the correct IMS version because the utility does not validate the IMS version.

The PARM parameter must specify one of the following values:

V121
  IMS version 12

V131
  IMS version 13

V140
  IMS version 14

For example:

//SCRUB  EXEC  PGM=FUDIMSPI,PARM='V131'

Required DD statements

The JCL to run Scrub must contain DD statements with the following ddnames:

SYSIN
  Input data set containing Scrub commands. For example:

  //SYSIN   DD  * 
  SCRUB
  */

SYSPRINT
  Output data set where Scrub echoes the input commands and writes messages.

SYSUT1
  Input IMS log.

Optional DD statements

The JCL to run Scrub can optionally contain DD statements with the following ddnames:

LOGINFO
  Output log information report written by the SCRUB or REPORT command. LOGINFO is the default ddname for the log information report.

To output the log information report to a different ddname, use the OUTPUT parameter of the SCRUB or REPORT parameter.

If you do not explicitly specify a LOGINFO DD statement, Scrub dynamically allocates this ddname to SYSOUT**.

SYSUT2
  Output IMS log (scrubbed).
If you omit this DD statement, Scrub continues, and writes the log information report as if you had specified an output IMS log.

If you omit the DCB attributes (RECFM, LRECL and BLKSIZE) for the output IMS log, Scrub uses the DCB attributes of the input IMS log specified by SYSUT1.

**Return codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Count</th>
<th>MCNT</th>
<th>Recs/Sec</th>
<th>Avg Len</th>
<th>Max Len</th>
<th>Byte/Sec</th>
<th>MB %</th>
<th>Count</th>
<th>Scrubbed</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>6,190</td>
<td>123</td>
<td>5</td>
<td>4,008</td>
<td>66,955</td>
<td>3.2</td>
<td>4.7</td>
<td>6,190</td>
<td>5,240</td>
</tr>
<tr>
<td>CQS PUT</td>
<td>545</td>
<td>10</td>
<td>1.8</td>
<td>4,008</td>
<td>19,793</td>
<td>0.9</td>
<td>1.4</td>
<td>545</td>
<td>545</td>
</tr>
<tr>
<td>CQS RD</td>
<td>819</td>
<td>16</td>
<td>4</td>
<td>1,008</td>
<td>6,935</td>
<td>0.3</td>
<td>0.4</td>
<td>819</td>
<td>0</td>
</tr>
<tr>
<td>OUT</td>
<td>2,788</td>
<td>54</td>
<td>5</td>
<td>533</td>
<td>27,715</td>
<td>1.3</td>
<td>1.9</td>
<td>2,788</td>
<td>2,708</td>
</tr>
<tr>
<td>CDNT</td>
<td>2,118</td>
<td>42</td>
<td>2</td>
<td>4,008</td>
<td>11,510</td>
<td>0.5</td>
<td>0.8</td>
<td>2,118</td>
<td>1,987</td>
</tr>
<tr>
<td>03</td>
<td>21,984</td>
<td>439</td>
<td>6</td>
<td>4,008</td>
<td>291,143</td>
<td>14.2</td>
<td>20.9</td>
<td>21,984</td>
<td>11,343</td>
</tr>
<tr>
<td>IN</td>
<td>19,649</td>
<td>392</td>
<td>5</td>
<td>4,008</td>
<td>221,530</td>
<td>10.8</td>
<td>15.9</td>
<td>19,649</td>
<td>9,685</td>
</tr>
<tr>
<td>OUT</td>
<td>1,971</td>
<td>39</td>
<td>1.4</td>
<td>4,008</td>
<td>57,482</td>
<td>2.8</td>
<td>4.1</td>
<td>1,971</td>
<td>1,448</td>
</tr>
<tr>
<td>CDNT</td>
<td>364</td>
<td>7</td>
<td>1.6</td>
<td>4,008</td>
<td>12,130</td>
<td>0.5</td>
<td>0.8</td>
<td>364</td>
<td>210</td>
</tr>
<tr>
<td>07</td>
<td>10,682</td>
<td>11,718</td>
<td>213</td>
<td>4</td>
<td>456</td>
<td>97,419</td>
<td>4.7</td>
<td>7.0</td>
<td>10,682</td>
</tr>
<tr>
<td>MPP</td>
<td>7,400</td>
<td>9,994</td>
<td>148</td>
<td>4</td>
<td>456</td>
<td>67,488</td>
<td>3.2</td>
<td>4.8</td>
<td>7,400</td>
</tr>
<tr>
<td>QUICK</td>
<td>131</td>
<td>1,724</td>
<td>2</td>
<td>4</td>
<td>456</td>
<td>1,194</td>
<td>0.0</td>
<td>0.0</td>
<td>131</td>
</tr>
<tr>
<td>FALSE</td>
<td>3,114</td>
<td>0</td>
<td>62</td>
<td>4</td>
<td>456</td>
<td>28,399</td>
<td>1.3</td>
<td>2.0</td>
<td>3,114</td>
</tr>
<tr>
<td>BMP</td>
<td>14</td>
<td>5</td>
<td>0</td>
<td>4</td>
<td>456</td>
<td>127</td>
<td>0.0</td>
<td>0.0</td>
<td>14</td>
</tr>
<tr>
<td>DBCNT</td>
<td>23</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>456</td>
<td>209</td>
<td>0.0</td>
<td>0.0</td>
<td>23</td>
</tr>
<tr>
<td>08</td>
<td>10,667</td>
<td>213</td>
<td>1</td>
<td>148</td>
<td>31,574</td>
<td>1.5</td>
<td>2.2</td>
<td>10,667</td>
<td>0</td>
</tr>
<tr>
<td>MPP</td>
<td>10,499</td>
<td>299</td>
<td>1</td>
<td>148</td>
<td>31,077</td>
<td>1.5</td>
<td>2.2</td>
<td>10,499</td>
<td>0</td>
</tr>
<tr>
<td>QUICK</td>
<td>131</td>
<td>0</td>
<td>2</td>
<td>148</td>
<td>387</td>
<td>0.0</td>
<td>0.0</td>
<td>131</td>
<td>0</td>
</tr>
<tr>
<td>BMP</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>148</td>
<td>29</td>
<td>0.0</td>
<td>0.0</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>ODBM</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>148</td>
<td>29</td>
<td>0.0</td>
<td>0.0</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>DBCNT</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>148</td>
<td>38</td>
<td>0.0</td>
<td>0.0</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>31</td>
<td>12,407</td>
<td>248</td>
<td>1</td>
<td>762</td>
<td>30,100</td>
<td>1.4</td>
<td>2.1</td>
<td>12,407</td>
<td>0</td>
</tr>
<tr>
<td>OLI</td>
<td>11,670</td>
<td>233</td>
<td>1</td>
<td>116</td>
<td>27,074</td>
<td>1.3</td>
<td>1.9</td>
<td>11,670</td>
<td>0</td>
</tr>
<tr>
<td>COMMS</td>
<td>737</td>
<td>14</td>
<td>1</td>
<td>762</td>
<td>2,935</td>
<td>0.1</td>
<td>0.2</td>
<td>737</td>
<td>0</td>
</tr>
<tr>
<td>37</td>
<td>23,796</td>
<td>475</td>
<td>1</td>
<td>152</td>
<td>51,939</td>
<td>2.5</td>
<td>3.7</td>
<td>23,796</td>
<td>0</td>
</tr>
<tr>
<td>4001</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>500</td>
<td>10</td>
<td>0.0</td>
<td>0.0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>45FF</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>60</td>
<td>556</td>
<td>1.5</td>
<td>2.1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>27,774</td>
<td>555</td>
<td>2</td>
<td>1,569</td>
<td>117,345</td>
<td>5.7</td>
<td>8.4</td>
<td>27,774</td>
<td>27,728</td>
</tr>
<tr>
<td>6701</td>
<td>11,612</td>
<td>232</td>
<td>9</td>
<td>1,056</td>
<td>217,628</td>
<td>10.6</td>
<td>15.6</td>
<td>11,612</td>
<td>11,612</td>
</tr>
<tr>
<td>Total</td>
<td>312,319</td>
<td>6,246</td>
<td>2</td>
<td>4,140</td>
<td>1,389,076</td>
<td>67.8</td>
<td>100.0</td>
<td>312,319</td>
<td>55,923</td>
</tr>
</tbody>
</table>

**Scrub log information report**

The **SCRUB** and **REPORT** commands produce a log information report that identifies the types of log record in the input IMS log, with statistics for each type.

**Example**

The columns under the **Out** heading appear in reports produced by the **SCRUB** command, but not in reports produced by the **REPORT** command. The columns under **Out** show how many records were copied to the output IMS log (specified by the SYSUT2 DD statement), and how many of those records were scrubbed.

**Tip:** To produce a report with **Out** columns without writing a scrubbed IMS log, use a **SCRUB** command but omit the SYSUT2 DD statement.
For each record type, the report shows record count, length, rates per second, and volumes. Selected record types are broken down further to provide additional information about transaction arrival and processing throughput. For additional information on each record type, refer to the appropriate IMS documentation.

**Additional information for record types 01 and 03: message arrival rates**

The following message arrival rate information appears indented under the rows for log record types 01 and 03:

- **IN** Transaction processed on this system
- **MSC FE** MSC transaction processed on a remote system
- **MSC BE** Remote MSC transaction processed on this system
- **CQS PUT** Input transaction put onto the shared queue
- **CQS RD** Input transaction read off the shared queue for processing on this system
- **OUT** Output message
- **CONT** Continuation record (MSGFFRST=0)

**Additional information for record types 07 and 08: scheduling and transaction processing rates**

The following scheduling and transaction processing rate information appears indented under the rows for log record types 07 and 08:

- **MPP** Message processing region
- **QUICK** Message processing region quick reschedule
- **BMP** Batch message processing (message and non-message driven)
- **IFP** Fast Path
- **JMP** Java™ message processing region
- **JBP** Java batch processing region
- **AER** Application Execution Region
- **DBCTL** CICS DBCTL
- **ODBM** Open Database
- **TRACK** Tracking thread
- **CPI-C** APPC region

For 07 only:
**DBCTL**
Includes DBCTL & ODBM (DLRDBT=1 for both and therefore indistinguishable)

**FALSE**
False schedule (DLRFALSE=1)

**ABEND**
Transactions that abended (DLRAB=1)

**Additional information for record type 31: transaction processing rates**

The following transaction processing rate information appears indented under the rows for log record type 31:

**DLI**
I/O PCB GU to start transaction processing

**COMMS**
Output message sent

---

**Scrub commands**

The SYSIN data set of a Scrub job must contain either a **SCRUB** command or a **REPORT** command, and may also contain other commands.

**SCRUB command**

The **SCRUB** command reads records from the IMS log specified by the ddname SYSUT1, scrubs them, and then writes them to SYSUT2.

**SCRUB** also produces a log information report. The report provides details about each record type in the input IMS log, and how many records were scrubbed and copied to the output IMS log.

If you omit SYSUT2, **SCRUB** produces the report as if it had written to an output IMS log.

To filter the time range of records that **SCRUB** reads from the input IMS log, use the **START** and **STOP** commands.

To filter the types of record that **SCRUB** writes to the output IMS log, use the **CODES** command.

The SYSIN data set of a Scrub job must contain either a **SCRUB** command or a **REPORT** command. Do not specify both a **SCRUB** command and a **REPORT** command in the same SYSIN data set.

**Syntax**

```
/SM590000/SM590000
OUTPUT(LOGINFO)
SCRUB
OUTPUT(report-ddname)
/SM590000/SM630000
```
Parameters

**OUTPUT(report-ddname)**

Specifies the ddname for the log information report.

If you omit this parameter, Scrub writes the log information report to the destination specified by the LOGINFO ddname.

If you do not specify a LOGINFO DD statement, Scrub dynamically allocates this ddname to SYSOUT**.

**REPORT command**

The **REPORT** command produces a log information report. The report provides details about each record type in the input IMS log.

The report produced by the **REPORT** command does not contain the Out columns in the similar report produced by the **SCRUB** command.

To filter the time range of records that **REPORT** reads from the input IMS log, use the **START** and **STOP** commands.

The SYSIN data set of a Scrub job must contain either a **SCRUB** command or a **REPORT** command. Do not specify both a **SCRUB** command and a **REPORT** command in the same SYSIN data set.

**Syntax**

```
REPORT
   OUTPUT(LOGINFO)
```

**Parameters**

**OUTPUT(report-ddname)**

Specifies the ddname for the log information report.

If you omit this parameter, Scrub writes the log information report to the destination specified by the LOGINFO ddname.

If you do not specify a LOGINFO DD statement, Scrub dynamically allocates this ddname to SYSOUT**.

**CODES command**

The optional **CODES** command restricts which log record types the **SCRUB** command writes to the output IMS log.

**CODES** does not affect which record types are scrubbed.
Syntax

You can specify individual log record types and ranges of log record types, in any combination.

Each type can be either a 2-digit hexadecimal value (a log record type, such as 01) or a 4-digit hexadecimal value (a log record type followed by a subtype, such as 5901).

Examples

If you omit the CODES command, the SCRUB command writes all log record types, as if you had specified the following CODES command:

CODES(00-FF)

The following example excludes user log records from the output IMS log:

CODES(00-99)

A SYSIN data set can contain multiple CODES commands. The following single command:

CODES(01,03,40-45,67FF,50,5901-59FF)

is equivalent to the following commands:

CODES(01)
CODES(03)
CODES(40-45)
CODES(67FF)
CODES(50)
CODES(5901-59FF)

START and STOP commands

The optional START and STOP commands restrict the time range of records that the SCRUB and REPORT commands read from the input IMS log.

By default, SCRUB and REPORT read all records from the input IMS log.

Scrub interprets the start and stop times according to the time zone specified by the ZONE command. If you omit the ZONE command, or specify the default value ZONE(LOCAL), Scrub interprets the start and stop times according to the local time zone of the system on which Scrub is running.
Syntax

```
START yyyy-mm-dd-hh.mm
STOP yyyy-mm-dd-hh.mm
```

Example

The following example selects records for 29 July 2011 from 10:30am to 2:30pm:
START 2011-07-29-10.30
STOP 2011-07-29-14.30

ZONE command

The optional ZONE command specifies the time zone where the input IMS log was created. Use ZONE to process IMS logs that were created in a different time zone to the system on which you are running Scrub.

The log record time stamp is a (GMT) STCK value in the log record suffix. Scrub converts this time stamp to local time by applying the ZONE specification.

Note that when LOCAL is specified (the default), then the system leap second offset (CVTLSO) is also applied.

Syntax

```
ZONE(LOCAL)
ZONE( GMT + hhmm )
```

Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user’s responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
19-21, Nihonbashi-Hakozaki-chō, Chuo-ku
Tokyo 103-8510, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.
Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
J46A/G4
555 Bailey Avenue
San Jose, CA 95141-1003
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Trademarks

IBM, the IBM logo, and ibm.com® are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. These and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law

Other company, product, and service names may be trademarks or service marks of others.

### Privacy policy considerations

IBM Software products, including software as a service solutions, ("Software Offerings") may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user or for other purposes. In many cases no personally identifiable information is collected by the Software Offerings. Some of our Software Offerings can help enable you to collect personally identifiable information. If this Software Offering uses cookies to collect personally identifiable information, specific information about this offering’s use of cookies is set forth below.

This Software Offering does not use cookies or other technologies to collect personally identifiable information.

If the configurations deployed for this Software Offering provide you as customer the ability to collect personally identifiable information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for notice and consent.

Index

A
abend codes
  Generic Logger exit 17
  Generic MSC exit 35
  Generic Partner exit 26
  Generic QSN exit 43
  IMS Tools Online System Interface 57
accessibility 2

C
components
  product 1
collection flow
  generic exits 5
conventions
  highlighting v

D
DFSFLGX0 7
DFSMSCE0 27
DFSPYUE0 19
DFSQSSP0 36
disability 2
disabling
  generic exits 5
documentation
  accessing 1

E
exit control flow 5
EXITINIT parameter 13, 22, 31, 40
EXITPROC parameter 13, 22, 31, 40

G
Generic Logger exit 7
  abend codes 17
  activation 7
  definitions 9
disable 5
EXITINIT parameter 13
EXITPROC parameter 13
global processing parameters 11
INITFAIL parameter 12
LOAD module definitions 10
messages 13
overview 7
PROCLIB member definitions 10
Generic MSC exit 27
  abend codes 35
  activation 27
  definitions 29
disable 5
EXITINIT parameter 31
EXITPROC parameter 31
Generic MSC exit (continued)
global processing parameters 30
INITFAIL parameter 31
messages 32, 41
overview 27
PROCLIB member definitions 29
Generic Multiple Systems Coupling exit 27
Generic Partner exit 18
  abend codes 26
  activation 19
  definitions 20
disable 5
EXITINIT parameter 22
EXITPROC parameter 22
global processing parameters 21
INITFAIL parameter 22
messages 23
overview 19
PROCLIB member definitions 21
Generic QSN exit 36
  abend codes 43
  activation 36
  definitions 38
disable 5
EXITINIT parameter 40
EXITPROC parameter 40
global processing parameters 39
INITFAIL parameter 40
overview 36
PROCLIB member definitions 38
Generic Queue Space Notification exit 36
Generic TM and MSC Message Routing exit 27
GExxxxx PROCLIB member 29
GEXMSE0 27
GEXQZxxx PROCLIB member 38
GEXQSSP0 36
GLxxxxx PROCLIB member 9
GLXEXIT0
load member 9
GLXLX0 7
GPRxxxx PROCLIB member 20
GPRIPUE0 19

H
highlighting conventions v

I
IMS log records
  scrubbing sensitive data from 59

IMS Tools Common Services
  overview 1
IMS Tools Generic Exits
  guidelines 5
  migration considerations 5
  unused exits 5
IMS Tools Generic Logger exit 7
IMS Tools Generic Multiple Systems
  Coupling exit 27
IMS Tools Generic Partner exit 18
IMS Tools Online System Interface
  abend codes 57
  guidelines 45
  messages 46
  migration considerations 45
  return and reason codes 46
IMS Tools Queue Space Notification
  exit 36
INITFAIL parameter 12, 22, 31, 40

K
keyboard shortcuts 2

L
legal notices
  notices 69
  trademarks 70

M
messages and codes
  Generic Logger exit routine 13
  Generic MSC exit 32, 41
  Generic Partner exit 23
IMS Tools Online System Interface 46
migration
  IMS Tools Generic Exits 5
  IMS Tools Online System Interface 45
MySupport 1

N
notices 69

O
overview
  product 1

P
PROCLIB
  empty members 5
  product prefixes 5, 45

© Copyright IBM Corp. 2001, 2014
R
reason codes 46
reference
  abend codes 57
  messages 46
  return and reason codes 46
return and reason codes 46

S
screen readers and magnifiers 2
scrubbing sensitive data from IMS log
  records 59
summary of changes 3

T
technotes 1
Tools Online System Interface
  abend codes 57
  messages 46
  return and reason codes 46
trademarks 70
troubleshooting
  IMS Tools Generic Exits 5
  IMS Tools Online System Interface 45