IBM Tools Base for z/OS
Version 1.6

IMS Tools Common Services User's Guide and Reference

SC19-4371-03

Note:

Before using this information and the product it supports, read the information in “Notices” on page 135.

Third Edition (February 2021)

This edition applies to Version 1.6 of IBM Tools Base for z/OS IMS Tools Common Services (program number 5655-V93) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC19-4371-02.

Contents

About this information

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

These topics provide instructions for installing, configuring, and using IMS Tools Common Services.

To use these instructions, you must have already installed IMS Tools Common Services by completing the instructions in the *Program Directory for IBM Tools Base for z/OS* (GI10-8819), which is included with the product media and is also available on the IMS Tools Product Documentation page.

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

- Understand the capabilities of the functions that are associated with IMS Tools Common Services
- Install and operate IMS Tools Common Services
- Customize your IMS Tools Common Services environment
- Diagnose and recover from IMS Tools Common Services problems
- Use IMS Tools Common Services with other IMS products

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

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

Always refer to the IMS Tools Product Documentation web page for complete product documentation resources:

https://www.ibm.com/support/pages/node/712955

The IMS Tools Product Documentation web page includes:

- Links to IBM Knowledge Center for the user guides ("HTML")
- PDF versions of the user guides ("PDF")
- Program Directories for IMS Tools products
- Recent updates to the user guides, referred to as "Tech docs" ("See updates to this information!")
- Technical notes from IBM Software Support, referred to as "Tech notes"
- White papers that describe product business scenarios and solutions

Part 1. IMS Tools Common Services overview

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

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

Topics:

Chapter 1. IMS Tools Common Services overview

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

Topics:

What's new in IMS Tools Common Services

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.

SC19-4371-03 - February 2021 - Third edition (Tools Base 1.6)

- APAR PH21599: Message FOI210I, IMS Tools Online System Interface message, has been updated.
- APAR PH19477: The Tools Base Diagnostics Aid utility has been added. Use this utility before you contact IBM Software Support for assistance with troubleshooting. This utility collects the necessary information that IBM requires. For details, see Part 6, "Tools Base Diagnostics Aid reference," on page 119.

SC19-4371-02 - July 2019 - Second edition (Tools Base 1.6)

- APAR PH05724: A new message, FOI002I, has been added for the IMS Tools Online System Interface.
- APAR PH03561: The Resource Manager Structure utility has been added. You can use this batch utility to query and delete resources in the Resource Manager (RM) structure used by the IMS systems that are running in an IMSplex. For details, see Part 5, "IMS Tools Resource Manager Structure utility reference," on page 97.

SC19-4371-01 - October 2016 - First edition (Tools Base 1.6)

- Refreshed for Tools Base 1.6

IMS Tools Common Services modules

IMS Tools Common Services consists of the IMS Tools Generic Exits, IMS Tools Online System Interface, the IMS Tools Catalog Interface, the IMS Tools Resource Manager Structure utility, and the Tools Base Diagnostics Aid.

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.

IMS Tools Online System Interface (TOSI)

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

IMS Tools Catalog Interface

IMS Tools Catalog Interface is a common interface used by IMS Tools products to process the IMS catalog directory.

IMS Tools Resource Manager Structure utility

The IMS Tools Resource Manager Structure utility (also referred to as the Resource Manager Structure utility) is a batch utility that queries or deletes resources in the Resource Manager (RM) structure used by the IMS systems that are running in an IMSplex.

Tools Base Diagnostics Aid

The Tools Base Diagnostics Aid generates the Load Module APAR Status report for the IMS Tools maintenance by IBM. This report shows the latest APAR fixes applied to each module of IMS Tools components.

Service updates and support information

Service updates and support information for this product, including software fix packs, PTFs, frequently asked questions (FAQs), technical notes, troubleshooting information, and downloads, are available from the web.

To find service updates and support information, see the following website:

IMS Tools Base for z/OS

Product documentation and updates

IMS Tools information is available at multiple places on the web. You can receive updates to IMS Tools information automatically by registering with the IBM My Notifications service.

Information on the web

Always refer to the IMS Tools Product Documentation web page for complete product documentation resources:

https://www.ibm.com/support/pages/node/712955

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- Technical notes from IBM Software Support, referred to as "Tech notes"
- White papers that describe product business scenarios and solutions

IBM Redbooks® publications that cover IMS Tools are available from the following web page:

http://www.redbooks.ibm.com

The IBM Information Management System website shows how IT organizations can maximize their investment in IMS databases while staying ahead of today's top data management challenges:

https://www.ibm.com/software/data/ims/

Receiving documentation updates automatically

To automatically receive emails that notify 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 Notifications service. You can customize the service so that you receive information about only those IBM products that you specify.

To register with the My Notifications service:

1. Go to http://www.ibm.com/support/mysupport
2. Enter your IBM ID and password, or create one by clicking **register now**.
3. When the My Notifications page is displayed, click **Subscribe** to select those products that you want to receive information updates about. The IMS Tools option is located under **Software** > **Information Management**.
4. Click **Continue** to specify the types of updates that you want to receive.
5. Click **Submit** to save your profile.

How to send your comments

Your feedback helps IBM to provide quality information. Send any comments that you have about this book or other IMS Tools documentation to comments@us.ibm.com. Include the name and version number of the product and the title and number of the book. If you are commenting on specific text, provide the location of the text (for example, a chapter, topic, or section title).

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 this product enable users to perform the following activities:

- 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 the ISPF interface, 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.

Part 2. IMS Tools Generic Exits reference

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:

Topics:

Chapter 2. 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 are prerequisites for multiple IMS tools. The IMS Tools Generic Exits are shared with multiple IMS tools and contain the common code components that are listed in the following table.

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

Component name	Product prefix
Generic Logger exit	GLX
Generic Partner exit	GPR
Generic MSC exit (Generic Transaction Manager and Multiple Systems Coupling Message Routing and Control User exit)	GEX
Generic QSN exit (Generic Queue Space Notification exit)	GEXQ

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:

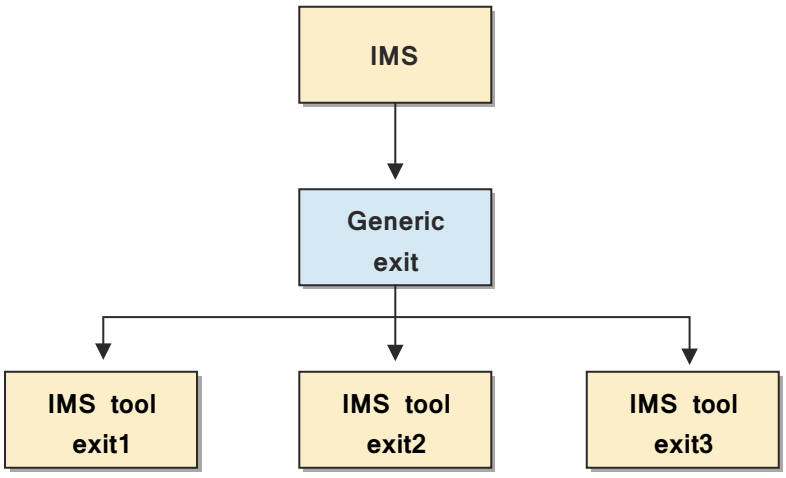


Figure 1. Exit control flow

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.

Chapter 3. Configuring 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.

Chapter 4. Generic Logger exit overview and usage

The IMS Tools Generic Logger exit (also referred to as the Generic Logger exit with 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

The 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:

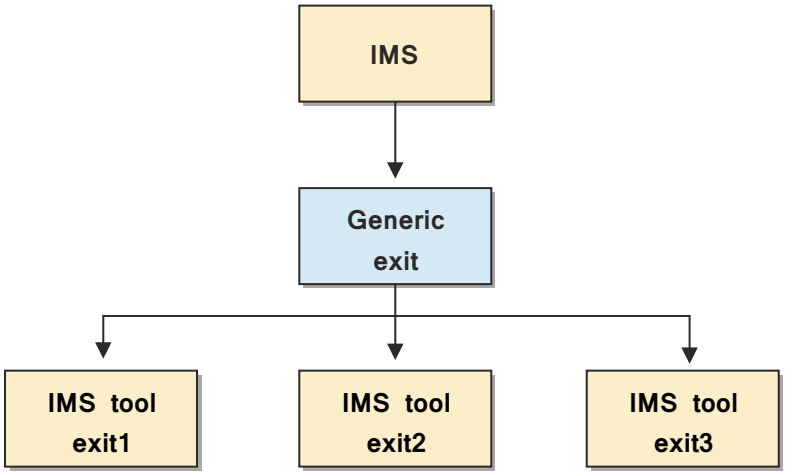


Figure 2. Exit control flow

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'.

```
          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” on page 14.

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: GLX*xxxx*0, 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 GLX*xxxx*0
2. Load module member GLX*xxxx*0
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:

```
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:

```
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:

```
         GLXIEXIT FUNC=BEGIN, IMSID=iiii
label    GLXIEXIT FUNC=DEFINE, TYPE=LOGR,
               EXITNAME=exit-name, LOADLIB=load-library
         GLXIEXIT FUNC=END
```

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:

```
         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:

```
         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.

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 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.

Chapter 5. Generic Logger exit messages (GLX)

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

Message format

IMS Tools Generic Logger exit (GLX) messages adhere to the following format:

```
GLXnnnnx
```

Where:

GLX
Indicates that the message was issued by IMS Tools Generic Logger exit (GLX)

nnnn
Indicates the message identification number

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

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 stops abnormally.

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 stops abnormally.

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 stops abnormally.

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 stops abnormally.

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 stops abnormally.

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 stops abnormally.

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 key value 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 Logger exit routine installation information to ensure that the PROCLIB member *member* has been specified correctly.

GLX2910E LOGGER EXIT *name* INITIALIZATION FAILED.

Explanation

An error occurred during the initialization of the logger exit routine *name*.

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 logger exit routine for support.

GLX2911W MISSING OR INVALID EXIT

Explanation

During initialization, the Generic Logger exit routine found no 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 logger exit routines by using a PROCLIB member or a load module. If the exit definition is invalid, see the Generic Logger exit routine setup and usage information, and then redefine the exit routine.

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

GLX2912E DUPLICATE EXIT DEFINITION

Explanation

The Generic Logger exit routine has found duplicate logger 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 and delete the duplicate logger exit routine definition.

GLX2913E ERROR LOADING EXIT DEFINITION MODULE *name*

Explanation

An error occurred when the Generic Logger exit routine attempted to load the exit definition module.

System action

The IMS control region stops abnormally.

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

Processing continues based on the EXITINIT keyword setting

User response

Ensure the load library is APF-authorized and resubmit the job.

GLX2921E **GLX DRIVER GLXILGXX NOT FOUND**

Explanation

The Generic Logger exit routine driver routine GLXILGXX was not found.

System action

The IMS control region stops abnormally.

User response

Ensure that the Generic Logger exit routine has been correctly installed in the //JOBLIB or //STEPLIB.

GLX2923E **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 stops abnormally.

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. This message is informational.

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 stops abnormally.

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.

Chapter 6. Generic Logger exit user abend codes

TheIMS Tools Generic Logger exit (GLX) 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.

3333

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'
GLXILGXX NOT LOADED

X'C9'
LOAD GLXIIII0 FAILED

X'CA'
LOAD GLXICHKX FAILED

X'CB'
LOAD GLXILGXX FAILED

X'CC'
GLXILGX0 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 GLXIESTX FAILED

X'D4'
NO EXIT DEFINITIONS

X'D5'
DUPLICATE EXIT DEFINITIONS

X'D6'
LOAD GLXILODX FAILED

X'D7'
GET ITASK ECB FAILED

X'12D'
ALLOCATE LOADLIB FAILED

X'12E'
LOAD EXIT FAILED

X'12F'
OPEN LOADLIB FAILED

X'130'
LOADLIB NOT APF-AUTHORIZED

X'191'
GET ITASK ECB FAILED

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.

Chapter 7. Generic Partner exit overview and usage

The IMS Tools Generic Partner exit (also referred to as the Generic Partner exit with 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

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:

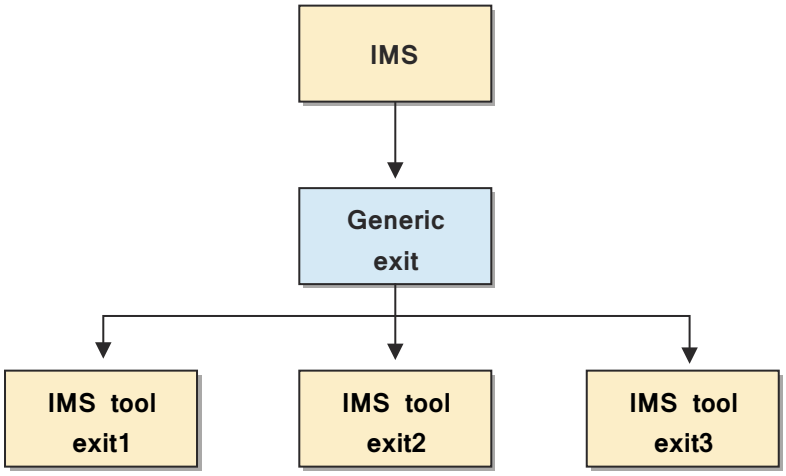


Figure 3. Exit control flow

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

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'.

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

Generic Partner exit activation

To activate this exit, set up the required member that is described in “Generic Partner exit definitions” on page 28.

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*iiii*0, where *iiii* 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*iiii*0
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.

Chapter 8. Generic Partner exit messages (GPR)

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

Message format

IMS Tools Generic Partner exit (GPR) messages adhere to the following format:

```
GPRnnnnx
```

Where:

GPR
Indicates that the message was issued by IMS Tools Generic Partner exit (GPR)

nnnn
Indicates the message identification number

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

GPR2901E UNABLE TO LOCATE IMS SSCD

Explanation

Generic Partner exit could not locate IMS SSCD.

System action

The IMS control region ends abnormally with a U=3000.

User response

Contact IBM Software support and provide dump.

GPR2902E IMS RELEASE NOT SUPPORTED

Explanation

Generic Partner exit is executing in an unsupported IMS release.

System action

The IMS control region ends abnormally with a U=3000.

User response

Ensure that the Generic Partner exit that is being run is on a supported IMS release.

GPR2903E **LOAD FAILED FOR GPR MODULE *name***

Explanation

Generic Partner exit could not locate the named module.

System action

The IMS control region ends abnormally 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 ends abnormally with a U=3000.

User response

Examine the previous messages for the reason.

GPR2908E **MVS NAME TOKEN SERVICE FAILED FOR *name*, RC=*nnnn*, RSN=*nnnn***

Explanation

Generic Partner exit has failed to obtain a name token.

System action

The IMS control region ends abnormally with a U=3000.

User response

Contact IBM Software support.

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 *reason*s 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 key value 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=*nnnn*, RSN=*nnnn*, INFO=*nnnn***

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=*nnnn*, RSN=*nnnn*, INFO=*nnnn***

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 ends abnormally 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 ends abnormally 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. This message is informational.

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 ends abnormally with a U=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.

GPR2930E EXIT *name* TERMINATED DUE TO ERROR

Explanation

The named Partner exit has been terminated because of an error.

System action

The named Partner exit will no longer be driven by Generic Partner exit.

User response

Examine previous error messages for the causes.

Chapter 9. Generic Partner exit user abend codes

The IMS Tools Generic Partner exit (GPR) 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 GPRICHKX 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 GPRILODX FAILED

X'D7'
GET ITASK ECB FAILED

X'12D'
ALLOCATE LOADLIB FAILED

X'12E'
LOAD EXIT FAILED

X'12F'
OPEN LOADLIB FAILED

X'130'
LOADLIB NOT APF-AUTHORIZED

X'191'
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.

Chapter 10. Generic MSC exit overview and 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

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:

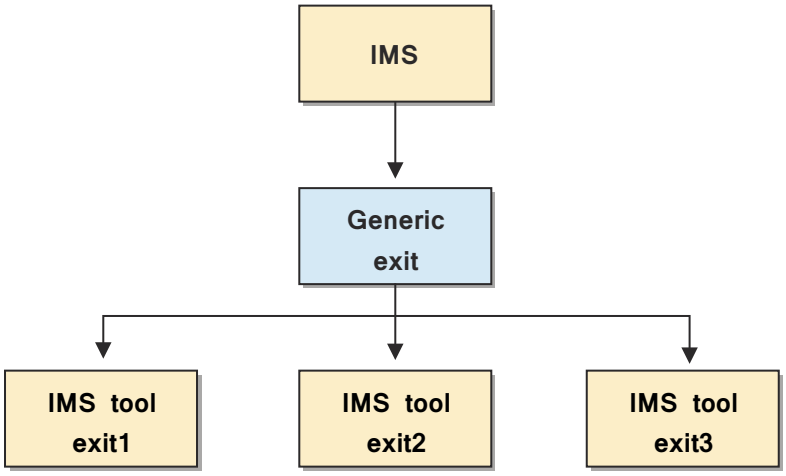


Figure 4. Exit control flow

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'.

```
          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 40.

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: GEX*xxxx*0, 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 GEX*xxxx*0
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.

Chapter 11. Generic MSC exit messages (GEX)

The IMS Tools Generic MSC exit (GEX) issues messages that can help you understand the state of the exit and help you resolve errors.

Message format

IMS Tools Generic MSC exit (GEX)) messages adhere to the following format:

```
GEXnnnnx
```

Where:

GEX
Indicates that the message was issued by IMS Tools Generic MSC exit (GEX)

nnnn
Indicates the message identification number

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

GEX2902E IMS RELEASE NOT SUPPORTED

Explanation

Generic MSC exit is executing in an unsupported IMS release.

System action

The IMS control region ends abnormally with 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 ends abnormally with 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 ends abnormally with 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 ends abnormally with 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 ends abnormally with 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)
- 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 key value 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=*nnnn*, RSN=*nnnn*, INFO=*nnnn*

Explanation

The Generic MSC 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.

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

Explanation

The Generic MSC 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.

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 ends abnormally with 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 ends abnormally with 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 *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. This message is informational.

GEX2928E IMS GENERIC MSC EXIT TERMINATED DUE TO ERROR

Explanation

A Generic MSC exit routine component has terminated due to an error.

System action

The Generic MSC exit functions are no longer available.

User response

Examine previous error messages for causes.

GEX2930E EXIT *name* TERMINATED DUE TO ERROR

Explanation

The named MSC exit has been terminated due to an error.

System action

The named MSC exit can no longer be driven by the Generic MSC exit.

User response

Examine previous error messages for causes.

Chapter 12. Generic MSC exit user abend codes

The IMS Tools Generic MSC exit (GEX) 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:

X'66'
IMS RELEASE NOT SUPPORTED

X'67'
LOAD GEXIINTX FAILED

X'68'
INVALID ENVIRONMENT

X'69'
GEXIMSCX NOT LOADED

X'CA'
LOAD GEXICHKX FAILED

X'CB'
LOAD GEXIMSCX FAILED

X'CC'
GEXMSCE0 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 GEXIESTX FAILED

X'D4'
NO EXIT DEFINITIONS

X'D5'
DUPLICATE EXIT DEFINITIONS

X'D6'
LOAD GEXILODX FAILED

X'12D'
ALLOCATE LOADLIB FAILED

X'12E'
LOAD EXIT FAILED

X'12F'
OPEN LOADLIB FAILED

X'130'
LOADLIB NOT APF-AUTHORIZED

System action

Processing is dependent on the settings of the IMS Multiple Systems Coupling 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 13. Generic QSN exit overview and usage

The IMS Tools 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

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:

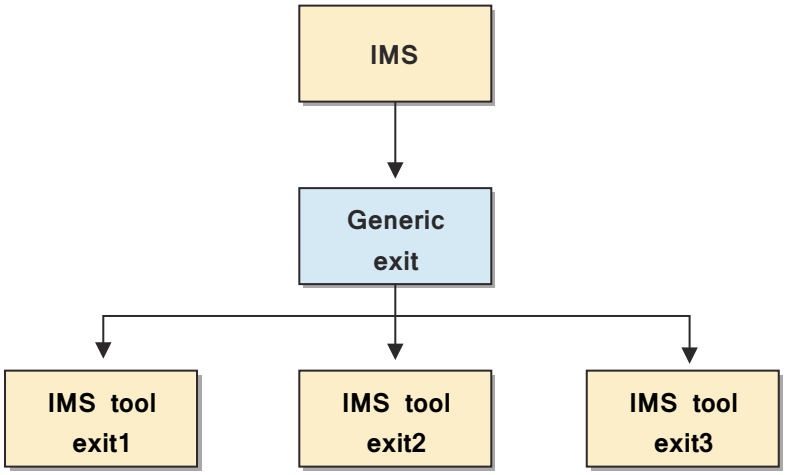


Figure 5. Exit control flow

For example, to configure IMS Sysplex Manager, you must specify GJEQSSP0 in the Generic QSN exit (GEXQ) PROCLIB member. When GJEQSSP0 is added to the GEXQ PROCLIB member, the Generic QSN exit calls GJEQSSP0 after the IMS initialization process calls the Generic QSN exit.

Coexistence with other QSN exits

The Generic QSN exit drives all other QSN exits under each IMS control region. In the //STEPLIB concatenation, placing the Generic exit routine DFSQSSP0 (alias GEXQSSP0) as the first copy of the DFSQSSP0 is recommended.

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

- The DFSQSSP0 that is before the Generic QSN exit must pass control to the Generic QSN exit.

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

  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'.

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

Generic QSN exit activation

To activate this exit, set up the required member that is described in “Generic QSN exit definitions” on page 52.

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: GEXQ*xxxx*, 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 GEXQ*xxxx*
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.

Chapter 14. Generic QSN exit messages (GEXQ)

The IMS Tools Generic QSN exit (GEXQ) issues messages that can help you understand the state of the exit and help you resolve errors.

Message format

IMS Tools Generic QSN exit (GEXQ) messages adhere to the following format:

```
GEXQnnnnx
```

Where:

GEXQ
Indicates that the message was issued by IMS Tools Generic QSN exit (GEXQ)

nnnn
Indicates the message identification number

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

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 ends abnormally 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 ends abnormally 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 ends abnormally 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

Generic QSN exit failed to obtain a name token.

System action

The IMS control region ends abnormally with a U=4016 abend.

User response

Contact IBM Software Support and provide the message number, return code, and reason code.

GEXQ909E ERROR *action* PROCLIB MEMBER *member*, REASON=*reason*

Explanation

An error occurred while processing the Generic QSN 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. 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.

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

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

X'60'
A parameter value that is defined as a key value 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 QSN exit routine installation information to ensure that the PROCLIB member *member* has been specified correctly.

GEXQ910E QSN EXIT *name* INITIALIZATION FAILED.

Explanation

The named exit failed to initialize.

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 ends abnormally 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 ends abnormally 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.

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

None. This message is informational.

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.

Chapter 15. Generic QSN exit user abend codes

The IMS Tools Generic QSN exit (GEXQ) 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.

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.

4016

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

X'130'
LOADLIB NOT APF-AUTHORIZED

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.

Part 3. IMS Tools Online System Interface reference

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:

Topics:

Chapter 16. IMS Tools Online System Interface overview

IMS Tools Online System Interface (product prefix FOI) is a general purpose command interface that allows IMS tools to interface with all supported IMS versions. IBM IMS Tools products use IMS Tools Online System Interface to issue action commands and IMS commands.

IMS Tools Online System Interface is started during IMS initialization.

IMS Tools Online System Interface reorganization and recovery solutions allow other clients to start and stop full-function database resources and issue IMS commands that need to interact with online the DB/DC IMS or CICS® DBCTL systems that own the target databases.

IMS Tools Online System Interface 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 you are using.

Chapter 17. 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.

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 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 FOIPPUE0 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 FOI*imsid*P 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 1.1 (FMID H2B7110) or 1.2 (FMID H2B7120) to the current FMID, you must define the IMS Tools Online System Interface partner exit (FOIPPUE0) 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 Chapter 18, “Configuring IMS Tools Online System Interface,” on page 69 to configure the IMS Tools Online System Interface to work with the Generic Partner exit.

Chapter 18. 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 Guide for IMS.

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

Chapter 19. IMS Tools Online System Interface messages (FOI)

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

Message format

IMS Tools Online System Interface messages adhere to the following format:

```
FOInnnnx
```

Where:

FOI
Indicates that the message was issued by IMS Tools Online System Interface

nnnn
Indicates the message identification number

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

Return and reason codes for client exception processing

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

Return code
Reason code

12

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.

FOI001E TOOLS ONLINE INTERFACE INIT FAILURE - REASON=*rsn*

Explanation

A failure occurred initializing the IMS Tools Online System Interface environment. The *rsn* value states the failure reason. Two modules issue the FOI001E message. Failures detected by DFSPPUE0 display reasons codes 1*xx* and failures detected by FOIITK0X display reason codes 2*xx*.

Reason code
Explanation

100
IMS SSCT not found

101
IMS Release unknown

105
Error loading FOIITK0X

106
Unable to locate DISP WA

107
Unable to allocate QSAV

110
Unable to create ITASK

112
Error posting ITASK

200
GETMAIN failed for FOIMCB

201
IMS Release not supported

202
GETMAIN failed for volatile work area

203
Load failed for IMS Tools Online System Interface abend intercept routine FOIAIR0X

204
IMS Tools Online System Interface ESTAE request failed

205
GETMAIN failed for 24 BIT dynamic storage

210
LOAD failed for dependent functional action module FOIDAM0X

215
PROCLIB read error

220
XCF group name invalid

240
Load failed for XCF message exit initialization module FOIMSGIX

241
Initialize XCF message exit failed

242
Load failed for action message module FOIACTMX

250
IXCJOIN failure

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.

FOI002I DUPLICATE INITIALIZATION CALL IS IGNORED

Explanation

The IMS Partner Product exit routine (PPUE) issued an initialization call to initialize the IMS Tools Online System Interface environment; however, the environment is already initialized.

System action

The duplicate initialization call is ignored, and the processing continues.

User response

None. This message is informational.

FOI005W DUPLICATE KEYWORD ENCOUNTERED, MEMBER=*m*, KW=*k*

Explanation

The IMS Tools Online System Interface PROCLIB member *m* contained a duplicate keyword *k*. The first occurrence of the keyword is accepted and subsequent occurrences are ignored.

System action

Processing continues with the accepted keyword parameter.

User response

If the accepted keyword parameter is valid, no action is required. Otherwise, correct the PROCLIB member and restart IMS.

FOI006E **KEYWORD DATA INVALID, MEMBER=*m*, KW=*k***

Explanation

The IMS Tools Online System Interface PROCLIB member *m* contained a keyword *k* which specified invalid data.

System action

Processing continues, the invalid keyword data is ignored.

User response

Correct the invalid keyword data in the PROCLIB member and restart IMS.

FOI007W **PARAMETER NOT RECOGNIZED, MEMBER=*m*, STRING=*s***

Explanation

The IMS Tools Online System Interface PROCLIB member *m* contained a parameter string *s*, which is not recognized.

System action

Processing continues, the unrecognized parameter string is ignored.

User response

Correct the unrecognized parameter string in the PROCLIB member and restart IMS.

FOI090W **XCF LEAVE FAILED, XCF GROUP=*g*, RC=*rc*, RSN=*rsn***

Explanation

During IMS Tools Online System Interface shutdown processing, the IXCLEAVE call to XCF to leave the XCF Group *g* failed. The IXCLEAVE return code *rc* and reason code *rsn* identify the failure.

System action

Processing continues, the IMS Tools Online System Interface environment did not leave the XCF group.

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. This message is informational.

FOI101I **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*
R*xx-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*, CTOK=*########*

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. CTOK= has the client token involved in the failing XCF SEND request.

System action

None.

User response

The return and reason codes are described in *z/OS MVS Programming: Sysplex Services Reference*. Review the return and reason codes to correct any problems, and then retry the operation.

If the problem persists, contact IBM Software Support.

FOI110I **ACTION INITIATED**

Explanation

This message indicates that the command action has been received by the IMS Tools Online System Interface API. All IMS Tools Online System Interface commands cause this message to display with the command text attached at the end of the message – up to a maximum of 40 bytes.

A "###" string always appears at the end of the message to indicate 1) the end of the complete message (when less than or equal to 40 bytes), or 2) where the message truncation begins (when greater than 40 bytes).

System action

None.

User response

None. This message is informational.

FOI120I **ACTION INITIATED**

Explanation

This message indicates that the command action has been received by the IMS Tools Online System Interface server. All IMS Tools Online System Interface commands cause this message to display with the command text attached at the end of the message – up to a maximum of 90 bytes.

System action

None.

User response

None. This message is informational.

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.

XCF SRB Message exit services have also been set up to be scheduled.

System action

IMS Tools Online System Interface initialization continues.

User response

None. This message is informational.

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, Volume 1: DFS Messages*.

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.

Return code
Explanation

00
Parsing has completed successfully.

04
Warnings

Reason code
Explanation

514
The AREA keyword is not supported.

08
Errors

Reason code
Explanation

501
The command verb was not found in CVB.

502
Invalid command verb.

503
The GET CPOOL attempt failed.

510
The required 'DB' keyword was not found.

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

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

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

515
LOCAL and GLOBAL parameters are mutually exclusive.

516
Duplicate keywords were found.

517
An invalid keyword was found.

518
Generic DBnames are not supported.

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

520
An invalid access parameter was detected.

521
GLOBAL and ACCESS parameters are mutually exclusive.

522
Either the INTTIME or INTNUM parameter is not numeric.

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

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

525
The required 'DD' keyword was not found.

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

527
Multiple DDNAMEs were specified.

529
The RAND or NAREAS parameter is too long.

530
The required 'RAND' keyword is not found.

531
Too many parameters are specified for 'RAND' or 'NAREAS' keyword.

532
The NAREAS parameter is 0 or not numeric.

12
Invalid function code

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

Explanation

An error was encountered when processing action command *cccccccc* (DBRTEST or BMPLIST).

Message FOI210I is issued in conjunction with message FOI110I.

Message FOI212I is not displayed for RC=04.

Return code
Explanation

00
Successful completion

04
Warning completion (no message is issued)

Reason code
Explanation

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 WFI.

33
OLR is active for this database or area.

34
ORS recovery is active.

08
Critical error

Reason code
Explanation

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 code
Explanation

01
CPOOL was not obtained.

48
XCF send error

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=*rsn***

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. *v.r.m* shows the function level of the TOSI client API that the IMS tools product uses.

System action

Processing continues, the client is ready to process API function requests.

User response

None. This message is informational.

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 MVS Programming: Authorized Assembler Services Reference, Volume 3 (LLA-SDU)* for SCC-RS. Correct the error, and resubmit the initialization process.

FOI520I **TOOLS ONLINE INTERFACE CLIENT API ENABLED, XCF GROUP=*gggggggg*, XCFTOKN=*########***

Explanation

The IMS Tools Online System Interface client has successfully connected to the XCF group *gggggggg* with client token number *#######*.

System action

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

User response

None. This message is informational.

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*, RSNC=*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 *z/OS MVS Programming: Sysplex Services Reference* for the return code (*rc*) and the 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:

Reason code	Explanation	User response
201	The TOSI client application could not query the specified group name.	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.	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.	Ensure that all of the required modules are in the //STEPLIB concatenation. Contact IBM software support if necessary and provide them with documentation.

The IXGJOIN return and reason codes in this message are described in *z/OS MVS Programming: Sysplex Services Reference*. Review the return code and the reason code 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. This message is informational.

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. This message is informational.

FOI527E **USER NOT AUTHORIZED TO ISSUE COMMAND**

Explanation

When the IMS Tools Online System Interface passed the command to the Operations Manger (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.

FOI528I **NUMBER OF REGISTERED IMS SYSTEMS=*nn*. IMS=*ssid*,*ssid*,...**

Explanation

This message shows the number of IMS systems in the XCF group. Up to 15 IMS IDs are listed in the message.

System action

Processing continues.

User response

None. This message is informational.

FOI530I **REQUEST COMPLETED SUCCESSFULLY**

Explanation

The IMS Tools Online System Interface client was successful in sending a message to every IMS Tools Online System Interface element in the server list.

System action

Processing continues.

User response

None. This message is informational.

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:

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

Reason code	Explanation	User response
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.	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.	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.	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:

Reason code	Explanation	User response
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.	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.	Internal error. Contact IBM Software Support and provide them with documentation.
310	The TOSI client application specified an incorrect API TYPE.	Internal error. Contact IBM Software Support and provide them with documentation.
311	There is no IMS system registered with the Operations Manager (OM) component.	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.	Internal error. Contact IBM Software Support and provide them with documentation.

Reason code	Explanation	User response
313	The SAF AUTH call failed.	Internal error. Contact IBM Software Support and provide them with documentation.
314	The SAF CREATE call failed.	Internal error. Contact IBM Software Support and provide them with documentation.
315	The SAF LIST call failed.	Internal error. Contact IBM Software Support and provide them with documentation.
316	The SAF UNLIST call failed.	Internal error. Contact IBM Software Support and provide them with documentation.
317	The SAF DELETE call failed.	Internal error. Contact IBM Software Support and provide them with documentation.
318	Failed to get the CPOOL storage that is necessary for SAF processing.	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 the job log. If the job fails, find the OM return code and reason code in *IMS Messages and Codes, Volume 4: IMS Component Codes* for details about the failure. If the error is not caused by user set up, contact IBM Software Support and send them your job log.

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. This message is informational.

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:

Reason code	Explanation	User response
100	The TOSI client application processed the RESPONSE request successfully; however, there were no messages to process.	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.	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.	If a response message is expected, then try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

FOI542E **RESPONSE 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

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:
  - 8 = Critical
- Reason codes:

Reason code	Explanation	User response
200	The TOSI client application was unable to establish timer services.	Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.
201	The TOSI client application encountered an error when setting timer services with the specified interval.	Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

Reason code	Explanation	User response
202	The TOSI client application encountered an error when setting timer services with the remaining time interval.	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.	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.	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.	Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

FOI550I **RETURN RESPONSE BUFFER COMPLETED SUCCESSFULLY. IMS=*ssid***

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. This message is informational.

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

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, otherwise contact IBM Software Support and provide them with documentation.

- Return code:
  - 4 = Warning
- Reason codes:

Reason code	Explanation	User response
100	The TOSI client application could not process the RETURNBUF request because an address for the buffer was not provided.	Try the operation again with a valid address.

FOI552E **RETURNBUF FAILED. RC=*rc*, RSN=*rsn*, IMS=*ssid***

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:

Reason code	Explanation	User response
300	The TOSI client application encountered an internal error while processing the RETURNBUF function.	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. This message is informational.

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:

Reason code	Explanation	User response
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.	Try the operation again.
102	The TOSI client application could not process the QUERYGROUP because there was an active server list detected.	Free the active server list by issuing a RETURNBUF BUFFER=ALL command and then try the operation again.
103	The TOSI client application could not process the QUERYGROUP because the group name was not provided.	Try the operation again with a group name.

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 MVS Programming: Authorized Assembler Services Reference, Volume 2 (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. This message is informational.

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:

Reason code	Explanation	User response
703	The TOSI client application encountered an internal error while obtaining storage for the DISCONNECT request.	Try the operation again. Contact IBM Software Support if necessary and provide them with documentation.

FOI573I **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. This message is informational.

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. This message is informational.

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

Processing to disable the client environment was ended.

User response

See the section about the STORAGE macro in the *z/OS MVS Programming: Authorized Assembler Services Reference, Volume 4 (SET-WTO)*. Correct the error, and resubmit the initialization process.

FOI583W **UNABLE TO RELEASE STORAGE, RC=*rc***

Explanation

The IMS Tools Online System Interface client was not successful in releasing storage obtained for termination processing.

System action

Termination processing continues.

User response

None.

FOI996I **SHUTDOWN AWE ENQUEUE FAILED**

Explanation

When the IMS Tools Online System Interface FRR (Function Recovery Routine) for the XCF message exit gets control from MVS, it tries to enqueue an AWE (asynchronous work element) to IMS Tools Online System Interface for shutdown processing. FOI996I is issued if the enqueue fails.

System action

Processing continues.

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. Notify the client program administrator that you received this error message.

FOI997E **SDUMP FAILED FOR ABEND *abend*, RC=*retcode*, RSN=*rsncode***

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 macro or service returned a nonzero return code *retcode*.

rsncode is the SDUMP reason code.

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 MVS Programming: Authorized Assembler Services Reference, Volume 3 (LLA-SDU)*.

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 *z/OS 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. This message is informational.

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.

Chapter 20. 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.

0200

Explanation

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:

X'10'
Unable to obtain a Short-Stack Block (SSBL) from the CPOOL.

X'30'
Unable to obtain the requested message area from the CPOOL.

X'40'
An XCF IXCMSGI macro or service returned a nonzero return code.

X'50'
The DFSAW 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.

System action

IMS Tools Online System Interface abnormally ends IMS command processing.

User response

Review the IMS control region job log for other messages that are associated with this abend. Correct the error if possible. If the problem persists, contact IBM Software Support if necessary and provide them with the dump and messages.

400 Reason Code=10

Explanation

Internal error indicating the requested cell pool (CPOOL) size is not available.

System action

IMS Tools Online System Interface abnormally ends IMS command processing.

User response

Update the Cell Pool Manager accordingly to support the requested pool size.

400 Reason Code=20

Explanation

Internal error indicating the Cell Pool Manager is not initialized.

System action

IMS Tools Online System Interface abnormally ends IMS command processing.

User response

Determine the cause for the Cell Pool Manager initialization failure.

4005

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.

System action

See the system action of the associated message.

User response

See the user response of the associated message.

Part 4. IMS Tools Catalog Interface reference

IMS Tools Catalog Interface allows IMS Tools products to communicate with the IMS Catalog.

Topics:

Chapter 21. IMS Tools Catalog Interface messages (GEX3)

IMS Tools Catalog Interface is a common interface used by IMS Tools products to process the IMS catalog directory. IMS Tools Catalog Interface issues messages that can help you understand the state of the interface and help you resolve errors.

Message format

IMS Tools Catalog Interface messages adhere to the following format:

```
GEX3nnnx
```

Where:

GEX3
Indicates that the message was issued by IMS Tools Catalog Interface.

nnn
Indicates the message identification number.

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message can include the following variables that are useful for problem analysis:

function
Indicates requested function: OPEN, CLOSE, GET, or LIST

csect_name
Indicates the CSECT name that called the IMS Tools Catalog Interface

msgmark
Indicates an identifier for problem analysis

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

GEX3510E **DFS3CATQ FAILED WITH RC=*rc* RSN=*rsn* FUNC=*function* IN *csect_name msgmark*.**

Explanation

IMS Catalog API (DFS3CATQ) failed.

- *rc* indicates the return code (Hexadecimal)
- *rsn* indicates the reason code (Hexadecimal)

System action

IMS Tools Catalog Interface stops all processing.

User response

When the message shows OPEN, GET, or LIST, take the following actions.

- If the message shows FUNC=OPEN, check that the correct IMS Catalog is specified to the job.

  If the IMS Catalog specification is incorrect, correct the error and rerun the job.
- If the message shows FUNC=GET or LIST, insufficient region size might cause this problem.

  Increase the REGION= *size* in the EXEC statement of the JCL and rerun the job.
- If the problem persists, contact IBM Software Support.

GEX3520E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* LOAD FAILED WITH SYSTEM COMPLETION CODE=*sc* AND RSN=*rsn*. MEMBER=*member***

Explanation

The LOAD macro failed with system completion code *sc* and reason code *rsn*.

member indicates the name of the member that caused the failure.

System action

IMS Tools Catalog Interface stops all processing.

User response

Refer to the *z/OS MVS Programming: Assembler Services Reference* to determine the meaning of the return code and reason code.

Take the following actions:

- If the STEPLIB data sets do not contain the correct member, correct the error and rerun the job.
- Increase the region size in the REGION= parameter of the EXEC statement in the JCL, and rerun the job.
- If the problem persists, contact IBM Software Support.

GEX3521E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* GETMAIN FAILED WITH RC=*rc* SIZE=*size*.**

Explanation

GETMAIN failed with system completion code *rc*.

size indicates the requested storage size.

System action

IMS Tools Catalog Interface stops all processing.

User response

Take the following actions:

- Increase the region size in the REGION= parameter of the EXEC statement in the JCL, and rerun the job.
- If the problem persists, contact IBM Software Support.

GEX3522E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* NAME/TOKEN SERVICE *service* FAILED. NAME=*nametoken* RC=*rc***

Explanation

The NAME/TOKEN service failed with system completion code *rc*.

service indicates the service name and *nametoken* indicates the name/token.

System action

IMS Tools Catalog Interface stops all processing.

User response

Contact IBM Software Support.

GEX3523E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* DYNAMIC DEALLOCATION FAILED FOR DD=*ddname* RC=*rc* AND RSN=*rsn*.**

Explanation

The IMS directory data set could not be unallocated. This message contains the following information:

- *rc* indicates the return code.

- *rsn* indicates the reason code.
- *ddname* indicates the name of the DD for which the unallocation failed.

System action

IMS Tools Catalog Interface stops all processing.

User response

Contact IBM Software Support.

GEX3540E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* IMS DIRECTORY DATA SET WAS NOT OPENED.**

Explanation

IMS directory data set was not opened.

System action

IMS Tools Catalog Interface stops all processing.

User response

Contact IBM Software Support.

GEX3541E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* CLOSE PROCESS IS IN PROGRESS.**

Explanation

Closing IMS directory data set failed because it was in progress.

System action

IMS Tools Catalog Interface stops all processing.

User response

Contact IBM Software Support.

GEX3542E **TOOLS CATALOG INTERFACE FAILED. FUNC=*function* IN *csect_name msgmark* ABEND OCCURED IN THE PREVIOUS TOOLS CATALOG INTERFACE PROCESSING.**

Explanation

ABEND had occurred in the IMS Catalog Interface task.

System action

IMS Tools Catalog Interface stops all processing.

User response

Contact IBM Software Support.

Part 5. IMS Tools Resource Manager Structure utility reference

The Resource Manager Structure utility is a batch utility that queries or deletes resources in the Resource Manager (RM) structure used by the IMS systems that are running in an IMSplex.

The Resource Manager Structure utility accesses resources based on the specified resource types and names by using the IMS Common Service Layer (CSL). It then writes the results in a report.

You cannot delete specific resources from the Resource Manager (RM) structure by using the IMS base product; the resources are cleaned up automatically as an internal process. The Resource Manager Structure utility assists you to identify and delete resources that you no longer want in the Resource Manager.

Information about the Resource Manager Structure utility is provided in the following topics:

Topics:

Chapter 22. Running the Resource Manager Structure utility

The Resource Manager Structure utility runs as a standard z/OS batch job. To query or delete resources in the resource structure and to write the results in a report, code the Resource Manager Structure utility JCL and run the job.

Procedure

1. Write the EXEC and DD statements.

   For the format of the EXEC statement and the list of DD statements, see Chapter 23, “EXEC and DD statements for the Resource Manager Structure utility,” on page 101.
2. Code the control statement in the GEXSYSIN data set.

   For the syntax of the control statement, see Chapter 24, “Control statement for the Resource Manager Structure utility,” on page 103.

   The following figure shows a JCL example for the Resource Manager Structure utility:

```
//GEXSUTL0 JOB  class="A"
//PGM1     EXEC PGM=GEXSUTL0,PARM='FUNC=RMSU'
//STEPLIB  DD DISP=SHR,DSN=ITB.SGLXLOAD
//         DD DISP=SHR,DSN=ITB.SHKTLOAD
//         DD DISP=SHR,DSN=IMS.SDFSRESL
//GEXSJRNL DD SYSOUT=*
//GEXSRPRT DD SYSOUT=*
//GEXSYSIN DD *
  FUNC(QUERY)
  PLEXNAME(IMSPX)
  TRANSACT(DFS*)
  LTERM(LTERM00*)
/*
```

   Figure 6. JCL example for the Resource Manager Structure utility
3. Run the Resource Manager Structure utility job step to generate a report. Ensure that the return code is 0.

   For an example of the report, see Chapter 25, “Output from the Resource Manager Structure utility,” on page 107.

Chapter 23. EXEC and DD statements for the Resource Manager Structure utility

You must specify an EXEC statement and DD statements that define the input and output data sets in your JCL.

Topics:

EXEC statement

The EXEC statement must be in the following format:

```
//STEP EXEC PGM=GEXSUTL0,PARM='FUNC=RMSU'
```

The EXEC statement in the batch JCL contains one keyword specification in the PARM field: FUNC=.

FUNC
Identifies which Common Services is to be invoked.

To invoke the Resource Manager Structure utility, specify 'FUNC=RMSU'.

Summary of DD statements

DD statements of the Resource Manager Structure utility determine the input and output data sets and specify how to run this utility.

The following table summarizes the DD statements for the Resource Manager Structure utility.

Table 2. DD statements for the Resource Manager Structure utility

DD name	Use	Format	Can be dynamically allocated?	Required or optional?
STEPLIB	Input	PDS RECFM U	No	Required
GEXSYSIN	Input	RECFM=FB,LRECL=80	No	Required
GEXSJRNL	Output	RECFM=FBA,LRECL=133	Yes	Optional
GEXSRPRT	Output	RECFM=FBA,LRECL=133	Yes	Optional

DD statements for input

The following input DD statements are used for the Resource Manager Structure utility.

STEPLIB
This DD statement is required. It specifies the load module library of IMS Tools Base (SGLXLOAD, SHKTLOAD) and IMS.SDFSRESL.

GEXSYSIN
This DD statement is required. It specifies the input control statement that controls the Resource Manager Structure utility functions.

The GEXSYSIN DD statement can be coded as a standard SYSIN file, a sequential data set, or a PDS member. LRECL=80 is required for the DCB of this data set.

For details about coding the GEXSYSIN DD statement, see Chapter 24, “Control statement for the Resource Manager Structure utility,” on page 103.

DD statements for output

The following output DD statements are used for the Resource Manager Structure utility.

GEXSJRNL
This DD statement is optional. It specifies the processing log output data set, which stores processing messages that are issued by the Resource Manager Structure utility.

If you do not specify this DD statement, the Resource Manager Structure utility dynamically allocates the data set by using SYSOUT=*.

GEXSRPRT
This DD statement is optional. It specifies the data set in which information about the RM resources that were queried or deleted is to be written.

If you do not specify this DD statement, the Resource Manager Structure utility dynamically allocates the data set by using SYSOUT=*.

Chapter 24. Control statement for the Resource Manager Structure utility

The control statement for the Resource Manager Structure utility controls the functions of this utility.

The control statement must be specified in the GEXSYSIN data set. This control statement data set generally resides in the input stream. However, it can also be defined as a sequential data set or as a member of a partitioned data set. It must contain 80-byte, fixed-length records. The block size, if coded, must be a multiple of 80.

Topics:

Format of the control statement

The control statement includes a set of keywords, parameters, and comments that are specified in the GEXSYSIN data set.

Keywords
A keyword defines an option for the Resource Manager Structure utility. Keywords can be specified in any order, and any two adjacent keywords must be separated by a blank or a comma. Each keyword has one associated parameter.

Parameters
A parameter defines a value for the associated keyword. All keywords require only one parameter. Parameters must be character or numeric values.

A keyword and the associated parameter are separated by parentheses. For example,

```
keyword(parameter)
```

Comments
You can include comments in the GEXSYSIN data set by marking a line with an asterisk (*) in column 1.

The Resource Manager Structure utility ignores the comment line when analyzing the control statement in the GEXSYSIN data set.

Summary of keywords

The following table summarizes required keywords of the control statement for the Resource Manager Structure utility. None of these keywords has a default value.

Table 3. Required keywords for the Resource Manager Structure utility

Keyword	Description
FUNC	Specifies whether you want to query or delete the indicated Resource Manager structure.
PLEXNAME	Specifies the 5-character IMSplex name.

The following table summarizes optional keywords of the control statement for the Resource Manager Structure utility. None of these keywords has a default value.

Table 4. Optional keywords for the Resource Manager Structure utility

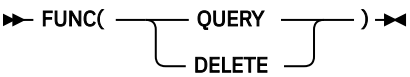
Keyword	Description
ALL_RESOURCES	Specifies that all resource types handled by this utility are to be queried when FUNC(QUERY) is specified. This keyword cannot be specified with any other resource keywords. For a list of resource keywords, see Table 5 on page 105.
APPCDESC	Specifies the names of the APPC descriptor resources to be queried or deleted.
AREA	Specifies the names of the DEDB area resources to be queried or deleted.
CPICTRAN	Specifies the names of the CPIC transaction resources to be queried or deleted.
DATABASE	Specifies the names of the database resources to be queried or deleted.
DYNUSER	Specifies the names of the dynamic user resources to be queried or deleted.
IMSPLEX	Specifies the names of the IMSplex resources to be queried or deleted.
LTERM	Specifies the names of the logical terminal (LTERM) resources to be queried or deleted.
RTMSNAME	Specifies the names of the remote MSNAME resources to be queried or deleted.
RTNODE	Specifies the names of the remote node resources to be queried or deleted.
SERPROG	Specifies the names of the scheduled serial program resources to be queried or deleted.
STNUSER	Specifies the names of the static node user resources to be queried or deleted.
TRANSACT	Specifies the names of the transaction resources to be queried or deleted.
USERID	Specifies the names of the user ID resources to be queried or deleted.

Description of keywords

The following keywords are available for the control statement.

FUNC
This required keyword specifies whether to query or delete resources in the resource structure.

Format:



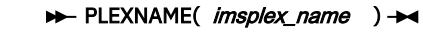
QUERY
Extracts the resources that meet the selection criteria specified by the resource keywords, and writes the results in the Resource Manager Resource Information report.

DELETE
Deletes the resources specified by the resource keywords, and writes the results in the Resource Manager Resource Information report.

There is no default.

PLEXNAME
This required keyword specifies the name of the IMSplex whose resource structure is to be accessed by this utility.

Format:



imsplex_name
Specify a 1- to 5-character IMSplex name.

There is no default.

APPCDESC
AREA
CPICTRAN
DATABASE
DYNUSER
IMSPLEX
LTERM
RTMSNAME
RTNODE
SERPROG
STNUSER
TRANSACT
USERID

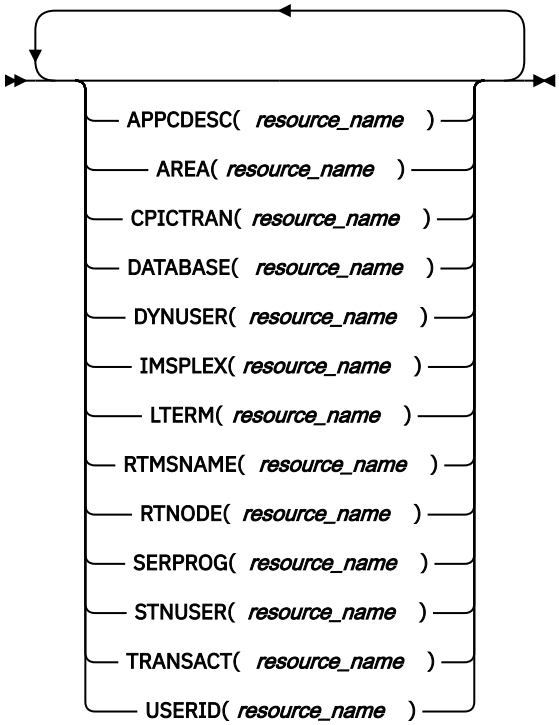
These optional keywords are resource keywords that you use to specify which resources types you want to process. The resource keywords specify the names of the resources to be queried or deleted.

Although these keywords are optional, at least one of them must be specified. Also, the same keyword can be specified repeatedly.

Table 5. Resource keywords

Keyword	Description
APPCDESC	APPC descriptor
AREA	DEDB area
CPICTRAN	CPIC transaction
DATABASE	Database
DYNUSER	Dynamic user
IMSPLEX	IMSplex
LTERM	Logical terminal (LTERM)
RTMSNAME	Remote MSNAME
RTNODE	Remote node
SERPROG	Scheduled serial program
STNUSER	Static node user
TRANSACT	Transaction
USERID	User ID

Format:



resource_name
Specify a 1- to 11-character resource name.

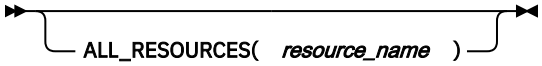
When FUNC(QUERY) is specified, the resource name can include wildcards (* and %). If a wildcard is used, all the resources that match that wildcard are returned.

There is no default.

ALL_RESOURCES
This optional keyword specifies that the resource names of all resource types handled by this utility are to be queried.

This keyword is applicable only when FUNC(QUERY) is specified and cannot be specified with any other resource keywords.

Format:



resource_name
Specify a 1- to 11-character resource name. The resource name can include wildcards (* and %). If a wildcard is used, all the resources that match that wildcard are returned.

There is no default.

Chapter 25. Output from the Resource Manager Structure utility

The Resource Manager Structure utility generates the Journal Messages report and the RM Structure Information report.

Topics:

Journal Messages report

The Journal Messages report contains processing messages about the Resource Manager Structure utility job. This report is generated in the GEXSJRNL data set.

Sample report

The following figure shows an example of the Journal Messages report:

```
Tools Base Common Services - V1R6               Journal Messages                                    RM Structure Utility
5655-V93                                                                                            Date: 2020-10-27  Time: 04:11:59

2020-10-27 04:11:599 GEXS101I THE RM STRUCTURE UTILITY PROCESS HAS STARTED.
2020-10-27 04:11:599 GEXS131I THE FOLLOWING OPTIONS ARE USED FOR THE RM STRUCTURE UTILITY:
2020-10-27 04:11:599 GEXS131I   - FUNC           ... QUERY
2020-10-27 04:11:599 GEXS131I   - PLEXNAME       ... IMSPX
2020-10-27 04:11:599 GEXS131I   - TRANSACT       ... DSFFHR2A
2020-10-27 04:11:599 GEXS131I   - TRANSACT       ... DSF*
2020-10-27 04:11:599 GEXS131I   - LTERM          ... LT%%%%A
2020-10-27 04:12:000 GEXS102I THE RM STRUCTURE UTILITY PROCESS HAS ENDED NORMALLY.
```

Figure 7. Journal Messages report

RM Structure Information report

The RM Structure Information report contains information about the resources that were queried or deleted. This report is generated in the GEXSRPRT data set.

Sample reports

The following figure shows an example of the RM Structure Information report when FUNC(QUERY) was specified:

```
Tools Base Common Services - V1R6               RM Structure Information Report                                      Page:       1
5655-V93                                                                                            Date: 2020-10-27  Time: 04:11:59

FUNC    (QUERY)
PLEXNAME(IMSPX)
TRANSACT(DSF*)

  TYPE       NAME          VERSION            OWNER
  --------   -----------   ----------------   --------
  TRANSACT   DSFFHR2A      0000000000000001
  TRANSACT   DSFFOE2A      0000000000000001
  TRANSACT   DSFFIT8A      0000000000000001
```

Figure 8. RM Structure Information report (Query)

The following figure shows an example of the RM Structure Information report when FUNC(DELETE) was specified:

```
Tools Base Common Services - V1R6              RM Structure Information Report                                  Page:       1
5655-V93                                                                                        Date: 2020-10-27  Time: 04:11:59

FUNC    (DELETE)
PLEXNAME(IMSPX)

  TYPE       NAME          VERSION            OWNER      RESULT
  --------   -----------   ----------------   --------   ------------------------------------------------------------------------------
  TRANSACT   DSFFHR2A      0000000000000001              DELETED
  TRANSACT   DSFFOE2A                                    GEXS141W NO RESOURCE FOUND.
  LTERM      LT0501A       0000000000000001              DELETED
    :
```

Figure 9. RM Structure Information report (Delete)

Report field descriptions

The RM Structure Information report shows the following fields:

FUNC
PLEXNAME
resource keywords
Shows the values specified for the FUNC keyword and the PLEXNAME keyword in the control statement. If you queried resources, the resource keywords specified in the control statement are also shown.

The table in the report shows information about the resources that were queried or deleted.

If you queried resources, the resource information extracted for each resource keyword is listed on a page. If multiple resource keywords were specified, the resource information for each resource keyword is listed on a separate page.

If you deleted resources, the resource information about all the specified resource keywords are listed on a page, followed by the results of processing.

The report fields are as follows:

TYPE
This column shows the resource keyword of the resource type that you specified. If you specified ALL_RESOURCES, individual resource keywords are shown.

NAME
This column shows the 11-byte resource name defined by the client (IMS).

VERSION
This column shows the resource version, which is the number of times the resource has been updated.

OWNER
This column shows the resource attribute that signifies the owner of the resource. This column might be blank.

RESULT
This column shows the result of the deletion process. If a resource was successfully deleted, DELETED is displayed.

Chapter 26. JCL examples for the Resource Manager Structure utility

Use these JCL examples to code JCL statements for the Resource Manager Structure utility.

Topics:

Example 1: Extracting all resources for all resource types handled by this utility

The following figure shows example JCL for extracting all resources from the resource structure.

```
//GEXSUTL0 JOB  class="A"
//PGM1     EXEC PGM=GEXSUTL0,PARM='FUNC=RMSU'
//STEPLIB  DD DISP=SHR,DSN=ITB.SGLXLOAD
//         DD DISP=SHR,DSN=ITB.SHKTLOAD
//         DD DISP=SHR,DSN=IMS.SDFSRESL
//GEXSJRNL DD SYSOUT=* //GEXSRPRT DD SYSOUT=*
//GEXSYSIN DD *
  FUNC(QUERY)
  PLEXNAME(IMSPX)
  ALL_RESOURCES(*)
/*
```

Figure 10. Example 1: Extracting all resources

In this example, the generic resource name (*) specified in ALL_RESOURCES means returning all resources of all resource types handled by this utility.

Example 2: Extracting the resources that meet the selection criteria specified for each resource type

The following figure shows example JCL for extracting only the resources that meet the specified selection criteria from the resource structure.

```
//GEXSUTL0 JOB  CLASS=A
//PGM1     EXEC PGM=GEXSUTL0,PARM='FUNC=RMSU'
//STEPLIB  DD DISP=SHR,DSN=ITB.SGLXLOAD
//         DD DISP=SHR,DSN=ITB.SHKTLOAD
//         DD DISP=SHR,DSN=IMS.SDFSRESL
//GEXSJRNL DD SYSOUT=*
//GEXSRPRT DD SYSOUT=*
//GEXSYSIN DD *
  FUNC(QUERY)
  PLEXNAME(IMSPX)
  TRANSACT(DSFFHR2A)
  TRANSACT(DFS*)
  LTERM(LT%%%%A)
/*
```

Figure 11. Example 2: Extracting the resources that meet the selection criteria

In this example,

- The transaction resource DSFFHR2A is extracted and reported because TRANSACT(DSFFHR2A) is specified.
- The transaction resources that begin with DFS are extracted and reported because TRANSACT(DFS*) is specified.

- The logical terminal (LTERM) resources of any 7-character strings that begin with LT and ends with A are extracted and reported because `LTERM(LT%%%%A)` is specified.

Example 3: Deleting the specified resources

The following figure shows example JCL for deleting the specified resources from the resource structure.

```
//GEXSUTL0 JOB  CLASS=A
//PGM1     EXEC PGM=GEXSUTL0,PARM='FUNC=RMSU'
//STEPLIB  DD DISP=SHR,DSN=ITB.SGLXLOAD
//         DD DISP=SHR,DSN=ITB.SHKTLOAD
//         DD DISP=SHR,DSN=IMS.SDFSRESL
//GEXSJRNL DD SYSOUT=*
//GEXSRPRT DD SYSOUT=*
//GEXSYSIN DD *
  FUNC(DELETE)
  PLEXNAME(IMSPX)
  TRANSACT(DSFFHR2A)
  TRANSACT(DSFFHR3A)
  LTERM(LT0501A)
/*
```

Figure 12. Example 3: Deleting the specified resources

In this example,

- The transaction resources DSFFHR2A and DSFFHR2A are deleted and reported because `TRANSACT(DSFFHR2A)` and `TRANSACT(DSFFHR3A)` are specified.
- The logical terminal (LTERM) resource LT0501A is deleted and reported because `LTERM(LT0501A)` is specified.

Chapter 27. Resource Manager Structure utility messages (GEXS)

The IMS Tools Resource Manager Structure utility issues messages that can help you diagnose and solve the utility problems.

Message format

The IMS Tools Resource Manager Structure utility messages adhere to the following format:

```
GEXSnnnx
```

Where:

GEXS
Indicates that the message was issued by the IMS Tools Resource Manager Structure utility.

nnn
Indicates the message identification number.

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

GEXS100E INCORRECT EXEC PARAMETER IS SPECIFIED.

Explanation

An incorrect EXEC parameter is specified for the Common Services utility interface (GEXSUTL0).

System action

Processing ends with a return code of 8.

User response

Correct the EXEC parameter, and rerun the job.

GEXS101I THE *utility_name* PROCESS HAS STARTED.

Explanation

The Common Services named *utility_name* has started.

System action

Processing continues.

User response

None. This message is informational.

GEXS102I THE *utility_name* PROCESS HAS ENDED NORMALLY.

Explanation

The Common Services named *utility_name* has ended normally.

System action

Processing continues.

User response

None. This message is informational.

GEXS103W THE *utility_name* PROCESS HAS ENDED WITH WARNING.

Explanation

The Common Services named *utility_name* has ended with warnings.

System action

Processing ends with a return code of 4.

User response

Check another message whose suffix is `W`. If this is not the expected result, correct the error, and rerun the job.

GEXS104E THE *utility_name* PROCESS HAS ENDED WITH ERROR.

Explanation

The Common Services named *utility_name* has ended with errors.

System action

Processing ends with a return code of 8.

User response

Check another message whose suffix is E. Correct the error, and rerun the job.

GEXS105E STORAGE OBTAIN FAILED. RC=*return_code*, SIZE=*size*, MOD=*module*, ERROR_ID=*error_id*.

Explanation

The Resource Manager Structure utility failed to obtain storage.

return_code
Shows the return code (in hexadecimal) that is returned from the STORAGE macro.

size
Shows the size of the storage that could not be obtained.

module
Shows the name of the failed module.

error_id
Shows the error ID that is associated with the module.

System action

Processing ends with a return code of 8.

User response

Increase the REGION size on the JOB statement in the JCL, and rerun the utility.

GEXS106E STORAGE RELEASE FAILED. RC=*return_code*, SIZE=*size*, MOD=*module*, ERROR_ID=*error_id*.

Explanation

The Resource Manager Structure utility failed to release storage.

In the message text,

return_code
Shows the return code (in hexadecimal) that is returned from the STORAGE macro.

size
Shows the size of the storage that could not be released.

module
Shows the name of the failed module.

error_id
Shows the error ID that is associated with the module.

System action

Processing ends with a return code of 8.

User response

This error might be an internal system error. Contact IBM Software Support.

GEXS107E **OPEN FAILED. DDNAME=*ddname*. RC=*return_code*.**

Explanation

The Resource Manager Structure utility failed to open the data set that is specified by the *ddname* DD. The hexadecimal value *return_code* is the return code from the OPEN macro.

System action

Processing ends with a return code of 8.

User response

See *z/OS DFSMS Macro Instructions for Data Sets* to determine the meaning of the return code. If the problem persists, contact IBM Software Support.

GEXS108W **SNAP FAILED. RC=*return_code*. SNAP SERVICE TERMINATED DUE TO PREVIOUS ERROR.**

Explanation

The Resource Manager Structure utility failed to create a snap dump. The hexadecimal value *return_code* is the return code from the SNAP macro. The Resource Manager Structure utility terminated the snap service due to the error.

System action

Processing continues with a return code of 4.

User response

Correct the error, and rerun the job.

GEXS109E **DYNALLOC SERVICE FAILED FOR FUNC=[ALLOC | UNALLOC], [DDNAME=*ddname* | DSNAME=*dsname*], RC=*return_code*, RSN=*reason_code*.**

Explanation

The Resource Manager Structure utility failed to allocate or unallocate the data set for DD name *ddname* or the data set named *dsname*. The hexadecimal value *return_code* is the return code from SVC99. The hexadecimal value *reason_code* is the S99ERROR and S99INFO contents.

System action

Processing ends with a return code of 8.

User response

Look up the dynamic allocation (SVC99) code in *z/OS MVS Programming: Authorized Assembler Services Guide*. Correct the problem, and rerun the job.

GEXS110E **UTILITY ENDED WITH ERROR. RC=*return_code*, RSN=*reason_code*.**

Explanation

The Resource Manager Structure utility interface (GEXSUTL0) ended with an error. Hexadecimal values *return_code* and *reason_code* indicate the return and reason codes from the requested function, respectively.

System action

Processing ends with a return code of 8.

User response

Correct the error, and rerun the job.

GEXS111E **ERRORS DETECTED WHILE *xxxxxxxx***

Explanation

The Resource Manager Structure utility encountered errors during its processing.

xxxxxxxx indicates one of the following text:

```
ANALYZING INPUT PARAMETERS
BUILDING SCI ENVIRONMENT
GENERATING REPORTS
```

System action

Processing ends with a return code of 8.

User response

Check another message whose suffix is E. Correct the error, and rerun the job.

GEXS112E **LOAD FAILED. MODULE=*modname*, SC=*code*, RSN=*reason_code*.**

Explanation

The Resource Manager Structure utility failed to load the module named *modname*. The hexadecimal value *code* is the abend code, and the hexadecimal value *reason_code* is the reason code associated with the abend.

System action

Processing ends with a return code of 8.

User response

Check if the correct load module library is specified in the STEPLIB DD statement.

GEXS113W **THE BPE STRING PRINT FORMATTING SERVICE DETECTED AN ERROR: RC=*nn*.**

Explanation

The internal messaging service detected an error during the message validation process. The hexadecimal value *nn* is the return code returned by BPE message processing.

System action

The message validation process stops, and processing continues with a return code of 4.

User response

Contact IBM Software Support.

GEXS114W **THE BPE WTO PRINT FORMATTING SERVICE DETECTED AN ERROR: RC=*nn*.**

Explanation

The internal messaging service detected an error during the message validation process. The hexadecimal value *nn* is the return code returned by BPE message processing.

System action

The message validation process stops, and processing continues with a return code of 4.

User response

Contact IBM Software Support.

GEXS119E **ESTAE FAILED. RC=*return_code*, MOD=*modname*.**

Explanation

The ESTAE request issued by the Resource Manager Structure utility failed. The hexadecimal value *return_code* is the return code of the ESTAE macro. *modname* is the module name that requested the ESTAE macro.

System action

Processing ends with a return code of 8.

User response

Correct the error, and rerun the job.

GEXS120E **UNSUPPORTED *component_type* RELEASE FOR *component_name*.**

Explanation

The Resource Manager Structure utility detected an unsupported release of an IMS system component. The component type and name are included in the message.

System action

Processing ends with a return code of 8.

User response

Correct the error, and rerun the job.

GEXS121E **SCI *service* SERVICE FAILURE. RC=*return_code*, RSN=*reason_code*.**

Explanation

A Structured Call Interface (SCI) service request failed. The requested service in the message indicates the failing SCI service. Hexadecimal values *return_code* and *reason_code* are the return and reason codes returned by SCI, respectively.

System action

Processing ends with a return code of 8.

User response

For more information about SCI services, see *IMS System Programming APIs*. If the problem persists, contact IBM Software support.

GEXS122E **RM *service* SERVICE FAILURE. RC=*return_code*, RSN=*reason_code*.**

Explanation

A Resource Manager (RM) service request failed. The requested service in the message indicates the failing RM service. Hexadecimal values *return_code* and *reason_code* are the return and reason codes returned by RM, respectively.

System action

Processing ends with a return code of 8.

User response

For more information about RM services, see *IMS System Programming APIs*. If the problem persists, contact IBM Software support.

GEXS123E **SCI WAS NOT ACTIVE IN THE IMSPLEX(*plexname*).**

Explanation

The Resource Manager Structure utility attempted to establish a connection to SCI, and the SCI was not active in the IMSplex.

In the message text, *plexname* is the IMSplex name specified by the PLEXNAME keyword.

System action

Processing ends with a return code of 8.

User response

Correct the error, and rerun the job.

GEXS130E **AN ERROR WAS DETECTED WHILE ANALYZING THE CONTROL STATEMENT. RC=*return_code*, FUNC=*function*.**
DETAIL OF THE ERROR IS AS FOLLOWS:
...

Explanation

The control statement analysis process detected a syntax error in the control statement. Review the other message, BPE0003E, which explains the details of the error.

System action

Processing ends with a return code of 8.

User response

Correct the control statement, and rerun the job.

GEXS131I **THE FOLLOWING OPTIONS ARE USED FOR THE RM STRUCTURE UTILITY:**
- keyword_name1 ... value1
- keyword_name2 ... value2
...

Explanation

This message shows individual processing options of the Resource Manager Structure utility on each line. This message is for informational purposes only.

System action

Processing continues.

User response

None. This message is informational.

GEXS133E **RESOURCE MUST BE SPECIFIED WITH FUNC(*function*).**

Explanation

No resource keywords were specified in the control statement. Resource keywords are the keywords used to specify which resources you want to process.

System action

Processing ends with a return code of 8.

User response

Specify one or more resource keywords, and rerun the job.

GEXS134E ***keyword1* KEYWORD AND ALL_RESOURCES KEYWORD ARE MUTUALLY EXCLUSIVE.**

Explanation

The keyword *keyword1* was specified with the keyword ALL_RESOURCES. These keywords are mutually exclusive.

System action

Processing ends with a return code of 8.

User response

Correct the control statement, and rerun the job.

GEXS135E **ALL_RESOURCES KEYWORD CANNOT BE SPECIFIED WITH FUNC(DELETE).**

Explanation

The keyword ALL_RESOURCES was specified with FUNC(DELETE). These keywords are mutually exclusive.

System action

Processing ends with a return code of 8.

User response

Correct the control statement, and rerun the job.

GEXS140W NO RESOURCES FOUND THAT MEET SELECTION CRITERIA.

Explanation

There are no records that meet the selection criteria specified by the resource keyword.

System action

Processing continues with a return code of 4.

User response

If this is not the expected result, correct the control statement, and rerun the job.

GEXS141W NO RESOURCE FOUND.

Explanation

The resource information to be deleted was not found.

System action

Processing continues with a return code of 4.

User response

Correct the control statement, and rerun the job.

GEXS142W THE SPECIFIED RESOURCE NAME INCLUDES WILDCARD CHARACTERS.

Explanation

One or more wildcard characters were specified in the resource keyword. You cannot specify wildcard characters in the resource name when deleting a resource.

System action

Processing continues with a return code of 4.

User response

Correct the control statement, and rerun the job.

Chapter 28. Resource Manager Structure utility return codes

The Resource Manager Structure utility ends with one of the following return codes:

Table 6. Return codes reported by the Resource Manager Structure utility

Return code	Description	User response
0	Job successfully ended.	None.
4	Job ended with a warning message.	Check the messages whose message numbers are suffixed by the letter *W*. If this is not the expected result, correct the error, and rerun the job.
8	Job ended with an error message.	Check the messages whose message numbers are suffixed by the letter *E*. Correct the error, and rerun the job.
12	Job abnormally ended and recovered by ESTAE routine.	This might be an internal system error. Contact IBM Software Support.
16	Job failed to initialize the BPE environment.	Correct any errors, and rerun the job. If this situation persists, contact IBM Software Support.

Part 6. Tools Base Diagnostics Aid reference

This section describes the Tools Base Diagnostics Aid utility.

Topics:

Chapter 29. Tools Base Diagnostics Aid overview

If you have a problem that you think is not a user error, use the Tools Base Diagnostics Aid to collect the necessary information before you contact IBM Software Support.

1. Run Tools Base Diagnostics Aid (HKTUDIAG) and obtain the Load Module APAR Status report.
2. Attach the report to the other diagnostic documents (such as job dump list or I/O of the utility).
3. Report the error to IBM.

Tools Base Diagnostics Aid (HKTUDIAG) generates the Load Module APAR Status report for the IMS Tools maintenance by IBM. This report shows the latest APAR fixes applied to each module of IMS Tools components.

Tools Base Diagnostics Aid supports the following load modules of IMS Tools products:

Table 7. Load modules supported by the Tools Base Diagnostics Aid

Product name	Load module library low-level qualifier (LLQ)	Load module prefix
IMS Administration Tool	SATYLOAD	ATY
IMS Buffer Pool Analyzer	SBPLLINK	BPL
IMS Cloning Tool	SGCLLOAD	GCL
IMS Command Control Facility	SCCFLINK	CCF
IMS Database Control Suite	SIDLLMD0	IDL
IMS DEDB Fast Recovery	SDFRLMD0	DFR
IMS Extended Terminal Option Support	SIZTLINK	IZT
IMS High Performance System Generation Tools	SIOHLINK	IOH
IMS Network Compression Facility	SCFNLINK	CFN
IMS Program Restart Facility	SIRTLOAD	IRT
IMS Recovery Solution Pack	SBSYLOAD SFRXLOAD SHPCLMD0	BSY FRX IRO HPC
Tools Base	SAIILINK SFOILOAD SGLXLOAD SHCOLMOD SHKTLOAD	AII BSN FOI FPQ GEX GLX GPR HCO HKT IAV

Chapter 30. How to run Tools Base Diagnostics Aid with JCL stream

To run Tools Base Diagnostics Aid (HKTUDIAG), supply an EXEC statement and DD statements that define the input and output data sets.

The following figure shows a JCL example for the Tools Base Diagnostics Aid:

```
//HKTUDIAG JOB  CLASS=A
//PGM1     EXEC PGM=HKTUDIAG
//STEPLIB  DD DISP=SHR,DSN=ITB.SHKTLOAD
//LOADLIB  DD DISP=SHR,DSN=ITB.SAIILINK
//         DD DISP=SHR,DSN=ITB.SHKTLOAD
//SYSUDUMP DD SYSOUT=A
//HKTPRINT DD SYSOUT=A
//HKTRPRT  DD SYSOUT=A
```

EXEC

This statement must be in the following form:

```
//stepname  EXEC PGM=HKTUDIAG
```

STEPLIB DD

This statement points to the load module library data set where HKTUDIAG load module resides:

```
//STEPLIB DD DISP=SHR,DSN=ITB.SHKTLOAD
```

ITB.SHKTLOAD is the name of the library that contains the IMS Tools Knowledge Base load modules.

LOADLIB DD

This statement defines the libraries that contain the load modules with which you have a problem. The Tools Base Diagnostics Aid will generate the Load Module APAR Status Report from the libraries defined by the LOADLIB DD.

If this DD statement is not provided, the Load Module APAR Status report will be generated from the libraries defined by the STEPLIB DD.

HKTPRINT DD

This statement defines the output data set for the Journal Messages report. The data set contains 133-byte, fixed-length records. It can reside on a tape, direct-access device, or printer; or it can be routed through the output stream. If BLKSIZE is coded in the DD statement, it must be a multiple of 133. However, it is recommended that you use the following:

```
//HKTPRINT DD SYSOUT=A
```

If you do not specify this DD statement, the Tools Base Diagnostics Aid dynamically allocates the data set by using SYSOUT=*.

HKTRPRT DD

This statement defines the output data set for the Load Module APAR Status report. The data set contains 133-byte, fixed-length records. It can reside on a tape, direct-access device, or printer; or it can be routed through the output stream. If BLKSIZE is coded in the DD statement, it must be a multiple of 133. However, it is recommended that you use the following:

```
//HKTRPRT  DD SYSOUT=A
```

If you do not specify this DD statement, the Tools Base Diagnostics Aid dynamically allocates the data set by using SYSOUT=*.

Chapter 31. Output from the Tools Base Diagnostics Aid

The Tools Base Diagnostics Aid generates a Journal Messages report and a Load Module APAR Status report.

Topics:

Journal Messages report

The Journal Messages report contains processing messages about the Tools Base Diagnostics Aid job. This report is generated in the HKTPRINT data set.

Sample report

The following figure shows an example of the Journal Messages report:

```
Tools Base for z/OS                              Journal Messages                                  Tools Base Diagnostics Aid
5655-V93                                                                                           Date: 2020-11-25  Time: 22:51:28

2020-11-25 22:51:280 HKT8001I THE TOOLS BASE DIAGNOSTICS AID PROCESS HAS STARTED.
2020-11-25 22:51:281 HKT8002I THE TOOLS BASE DIAGNOSTICS AID PROCESS HAS ENDED NORMALLY.
```

Figure 13. Journal Messages report

Load Module APAR Status report

The Load Module APAR Status report contains information about the modules and their applied APARs.

Sample report

The following figure shows an example of the Load Module APAR Status report for the SHKTLOAD library.

```
Tools Base for z/OS                                Load Module APAR Status Report                                                Page:       1
5655-V93                                                                                                  Date: 2020-11-25  Time: 23:32:53

Load Module Library: ITB.SHKTLOAD

  Module     Alias-of     CSECT      APAR      APAR          CSECT      APAR      APAR          CSECT      APAR      APAR
  Name                    Name       Number    Fix Date      Name       Number    Fix-Date      Name       Number    Fix Date

  BSN$RBP0                BSN$RBP0   PI76011   2017-08-04    HKTAPRS0   None      n/a
  BSNAMD00                BSNAMD00   None      n/a
  BSNAMG00                BSNAMG00   None      n/a
  BSNAMI00                BSNAMI00   None      n/a
  BSNAMP00                BSNAMP00   None      n/a
  BSNAMT00                BSNAMT00   None      n/a
  BSNAMU00                BSNAMU00   None      n/a
  BSNAM000                BSNAM000   None      n/a
  BSNAPRS0                BSNAPRS0   None      n/a
  BSNASM00                BSNASM00   PI93320   2018-03-13
  BSNASM10                BSNASM10   None      n/a
  BSNA1BBE                BSNA1BBE   None      n/a
  BSNA1HFP                BSNA1HFP   None      n/a
  BSNA1IRO                BSNA1IRO   None      n/a
  BSNBASEP                BSNBASEP   PI70647   2017-05-19    BSNBAS10   None      n/a           BSNWMMSG   None      n/a
                          BSNBAS12   None      n/a           BSNBAS14   None      n/a
  BSNDDI00                BSNDDI00   PI98323   2018-05-28
  ...
```

Figure 14. Load Module APAR Status report

Report field descriptions

The Load Module APAR Status report shows the following fields:

Load Module Library
This field shows the data set names specified in the LOADLIB DD statement. If multiple data sets are concatenated, only the first data set is shown with a plus sign (+).

Module Name
This is the name of either the load module member or the alias that is associated with an IMS Tools feature.

Alias-of
This is the name of the original member of the alias. If the module name is not an alias, this field is left blank.

The following fields are repeated if the module contains more than one CSECT.

CSECT Name
This is the name of the CSECT included in the module. The CSECT names are listed in the order in which they are included in the module.

APAR Number
This is the latest APAR number applied to the module represented by the CSECT name. If no APAR is applied, None is shown.

APAR Fix Date
This is the date on which the modification for the module represented by the CSECT name was prepared. If no APAR is applied or no date information is included in the CSECT, n/a is shown.

Chapter 32. Tools Base Diagnostics Aid return codes

The Tools Base Diagnostics Aid ends with one of the following return codes:

Table 8. Return codes reported by Tools Base Diagnostics Aid

Return code	Description	User response
0	Job successfully ended.	None.
4	Job ended with a warning message.	Check the messages whose message numbers are suffixed by the letter *W*. If this is not the expected result, correct the error, and rerun the job.
8	Job ended with an error message.	Check the messages whose message numbers are suffixed by the letter *E*. Correct the error, and rerun the job.
16	Job failed to initialize the BPE environment.	Correct any errors, and rerun the job. If this situation persists, contact IBM Software Support.

Chapter 33. Tools Base Diagnostics Aid messages

The Tools Base Diagnostics Aid issues messages that can help you diagnose and solve the problems.

Message format

The Tools Base Diagnostics Aid messages adhere to the following format:

```
HKTnnnx
```

where:

HKT
Indicates that the message was issued by the Tools Base Diagnostics Aid.

nnn
Indicates the message identification number.

x
Indicates the severity of the message:

A
Indicates that operator intervention is required before processing can continue.

E
Indicates that an error occurred, which might or might not require operator intervention.

I
Indicates that the message is informational only.

W
Indicates that the message is a warning to alert you to a possible error condition.

Each message also includes the following information:

Explanation:
The Explanation section explains what the message text means, why it occurred, and what its variables represent.

System action:
The System action section explains what the system will do in response to the event that triggered this message.

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.

HKT8001I THE *utility_name* PROCESS HAS STARTED.

Explanation

The batch utility named *utility_name* has started.

System action

Processing continues.

User response

None. This message is informational.

HKT8002I THE *utility_name* PROCESS HAS ENDED NORMALLY.

Explanation

The batch utility named *utility_name* has ended normally.

System action

Processing continues.

User response

None. This message is informational.

HKT8003W THE *utility_name* PROCESS HAS ENDED WITH WARNING.

Explanation

The batch utility named *utility_name* has ended with warnings.

System action

Processing ends with a return code of 4.

User response

Check another message whose suffix is *W*. If this is not the expected result, correct the error, and rerun the job.

HKT8004E **THE *utility_name* PROCESS HAS ENDED WITH ERROR.**

Explanation

The batch utility named *utility_name* has ended with errors.

System action

Processing ends with a return code of 8.

User response

Check another message whose suffix is *E*. Correct the error, and rerun the job.

HKT8005E **STORAGE OBTAIN FAILED. RC=*return_code*, SIZE=*size*, MOD=*module*, ERROR_ID=*error_id*.**

Explanation

The batch utility failed to obtain storage.

return_code
Shows the return code (in hexadecimal) that is returned from the STORAGE macro.

size
Shows the size of the storage that could not be obtained.

module
Shows the name of the failed module.

error_id
Shows the error ID that is associated with the module.

System action

Processing ends with a return code of 8.

User response

Increase the REGION size on the JOB statement in the JCL, and rerun the utility.

HKT8006E **STORAGE RELEASE FAILED. RC=*return_code*, SIZE=*size*, MOD=*module*, ERROR_ID=*error_id*.**

Explanation

The batch utility failed to release storage. In the message text,

return_code
Shows the return code (in hexadecimal) that is returned from the STORAGE macro.

size
Shows the size of the storage that could not be released.

module
Shows the name of the failed module.

error_id
Shows the error ID that is associated with the module.

System action

Processing ends with a return code of 8.

User response

This error might be an internal system error. Contact IBM Software Support.

HKT8007E **OPEN FAILED. DDNAME=*ddname*. RC=*return_code*.**

Explanation

The batch utility failed to open the data set that is specified by the *ddname* DD. The hexadecimal value *return_code* is the return code from the OPEN macro.

System action

Processing ends with a return code of 8.

User response

See *z/OS DFSMS Macro Instructions for Data Sets* to determine the meaning of the return code. If the problem persists, contact IBM Software Support.

HKT8009E **DYNALLOC SERVICE FAILED FOR FUNC=[ALLOC | UNALLOC], [DDNAME=*ddname* | DSNAME=*dsname*],**

RC=*return_code*,
RSN=*reason_code*.

Explanation

The batch utility failed to allocate or unallocate the data set for DD name *ddname* or the data set named *dsname*. The hexadecimal value *return_code* is the return code from SVC99. The hexadecimal value *reason_code* is the S99ERROR and S99INFO contents.

System action

Processing ends with a return code of 8.

User response

Look up the dynamic allocation (SVC99) code in *z/OS MVS Programming: Authorized Assembler Services Guide*. Correct the problem, and rerun the job.

HKT8011E **ERRORS DETECTED WHILE *xxxxxxxx***

Explanation

The batch utility encountered errors during its processing.

xxxxxxxx
Indicates one of the following:

- ANALYZING INPUT PARAMETERS
- ANALYZING LOAD MODULES
- GENERATING REPORTS

System action

Processing ends with a return code of 8.

User response

Check the message whose suffix is *E* in the Journal Messages report. Correct the error, and rerun the job.

HKT8012E **LOAD FAILED. MODULE=*modname*, SC=*code*, RSN=*reason_code*.**

Explanation

The batch utility failed to load the module named *modname*. The hexadecimal value *code* is the abend code, and the hexadecimal value *reason_code* is the reason code associated with the abend.

System action

Processing ends with a return code of 8.

User response

Check if the correct load module library is specified in the STEPLIB DD statement.

HKT8016E **BINDER API FAILED.**
FUNC=*function*, RC=*return_code*,
RSN=*reason_code*.
- DDNAME=*ddname*,
MODULE=*modname*.

Explanation

The binder API (IEWBIND) failed to retrieve information from the load module *modname* in the library *ddname*. *function* is the name of the failed IEWBIND function. The hexadecimal values *return_code* and *reason_code* are the return code and the reason code from the IEWBIND.

System action

Processing ends with a return code of 8.

User response

Check if the correct load module library is specified in the *ddname* DD statement. See *z/OS MVS Program Management: Advanced Facilities* to determine the meaning of the return code and the reason code. If the problem persists, contact IBM Software Support.

HKT8018E **RDJFCB FAILED.**
DDNAME=*ddname*.
RC=*return_code*.

Explanation

The batch utility issued an RDJFCB macro for the specified *ddname*, and the macro returned an error. The hexadecimal value *return_code* is the return code from the RDJFCB macro.

System action

Processing ends with a return code of 8.

User response

Check if the correct load module library is specified in the *ddname* DD statement. See *DFSMS DFSMSdfp Advanced Services* to determine the meaning of the return code. If the problem persists, contact IBM Software Support.

HKT8026W **UNABLE TO DIAGNOSE THE CSECT *csectname* IN THE MODULE *modname*. REASON: *text*.**

Explanation

The Tools Base Diagnostics Aid could not diagnose the CSECT *csectname* in the load module *modname*. *text* shows the reason why the Diagnostics Aid could not diagnose this CSECT. The Tools Base Diagnostics Aid skips this CSECT and continues processing.

System action

Processing continues with a return code of 4.

User response

Check if the correct load module library is specified in the LOADLIB DD statement. If the problem persists, contact IBM Software Support.

HKT8027W **THE NUMBER OF CSECTS IN THE MODULE *modname* EXCEEDS THE LIMIT TO DIAGNOSE.**

Explanation

The number of CSECTs in the module *modname* exceeds the limit for the Tools Base Diagnostics Aid. Some CSECTs in the *modname* will not be shown in the Load Module APAR Status report.

System action

Processing continues with a return code of 4.

User response

Check if the correct load module library is specified in the LOADLIB DD statement. If the problem persists, contact IBM Software Support.

HKT8029E **THERE ARE NO MEMBERS TO DIAGNOSE.**

Explanation

The Tools Base Diagnostics Aid could not find any load module member to diagnose.

System action

Processing ends with a return code of 8.

User response

Specify the correct load module library in the LOADLIB DD statement, and rerun the job.

HKT8030E **AN ERROR WAS DETECTED WHILE ANALYZING THE CONTROL STATEMENT. RC=*return_code*, FUNC=*function*.**
DETAIL OF THE ERROR IS AS FOLLOWS:
...

Explanation

The control statement analysis process detected a syntax error in the control statement.

System action

Processing ends with a return code of 8.

User response

Review the other message, BPE0003E, which explains the details of the error. Correct the control statement, and rerun the job.

HKT8031I **THE FOLLOWING OPTIONS ARE USED FOR THE *utility_name*:**
- keyword_name1 ... value1
- keyword_name2 ... value2

Explanation

This message shows individual processing options of the batch utility named *utility_name* on each line. This message is for informational purposes only.

System action

Processing continues.

User response

None. This message is informational.

HKT8032E **THE VALUE *value* IS INCORRECT FOR THE *keyword* KEYWORD**

Explanation

The value *value* is incorrect for the *keyword* keyword.

System action

Processing ends with a return code of 8.

User response

Correct the control statement, and rerun the job.

HKT8039E ***value1* AND *value2* ARE MUTUALLY EXCLUSIVE FOR *keyword* KEYWORD.**

Explanation

The value *value1* was specified with the value *value2* for the *keyword* keyword. These values are mutually exclusive.

System action

Processing ends with a return code of 8.

User response

Correct the control statement, and rerun the job.

HKT8056E NO MEMBERS WERE FOUND IN THE *ddname* DD.

Explanation

The batch utility tried to obtain load module members from the *ddname* DD, but there were no members in the DD.

System action

Processing ends with a return code of 8.

User response

Specify the correct load module library, and rerun the job.

HKT8057E DESERV FAILED. FUNC=*function_code*, RC=*return_code*, RSN=*reason_code*, DDNAME=*ddname*.

Explanation

The batch utility issued the z/OS DESERV macro internally, but the macro failed.

- *function_code*, *return_code*, and *reason_code* show the function code, the return code, and the reason code of the DESERV macro, respectively.
- *ddname* shows the name of the DD statement that caused the error.

System action

Processing ends with a return code of 8.

User response

Check if the correct data set is specified in the *ddname* DD, and rerun the job. If the problem persists, contact IBM Software Support.

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