Message Advisor for IMS User Guide

Supporting

Version 1.7 of Message Advisor for IMS

December 2015
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HOUSTON TX 77042-2827 USA | 1 713 918 8800 or 1 800 841 2031 | 1 713 918 8000 |

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  - Operating system type, version, and service pack or other maintenance level such as PUT or PTF
  - System hardware configuration
  - Serial numbers
  - Related software (database, application, and communication) including type, version, and service pack or maintenance level
- Sequence of events leading to the problem
- Commands and options that you used
- Messages received (and the time and date that you received them)
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- In the United States and Canada, call 1 800 537 1813. Outside the United States and Canada, contact your local support center for assistance.
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This book contains detailed information about the Message Advisor solution.

The information presented in this book is for system programmers, database administrators, and any other individuals involved in the installation, operation, and maintenance of an IMS system.

Message Advisor comprises two components that provide a comprehensive solution to the problems associated with managing IMS message queues in shared queues and non-shared queues environments. The components of Message Advisor improve IMS availability by helping you maintain the integrity of your IMS message queues.

Message Advisor provides the extended performance of its Queue Protection Facility (QPF) component. QPF automatically monitors and manages IMS message queues based on user-defined criteria to prevent IMS outages (shutdowns and/or abends) caused by message queue overflow.

With the Queue Manager utilities (QMR) component of Message Advisor, you can view and create reports on message queue statistics, simplifies requeueing messages to message queues, dequeue unwanted messages, and unload messages for later use. QMR can perform these functions in a shared queues environment, and provides an additional Analyzer Facility. The Analyzer Facility produces printed and online output of the contents of the primary and overflow structures (which comprise the global queues), breaks down statistics by different queue types, and reports a variety of IMS data errors.

Like most BMC documentation, this book is available in printed and online formats. To request printed books or to view online books and notices (such as release notes and technical bulletins), see the support website at http://www.bmc.com/support.

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The software also offers online Help. To access Help, press F1 within any product or click the Help button in graphical user interfaces (GUIs).
How this book is organized

This book is organized as follows. In addition, a glossary of terms and an index appear at the end of the book.

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<td>“Introduction” on page 19</td>
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<td>“Displaying IMS message queues” on page 95</td>
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<td>“Dequeueing messages” on page 123</td>
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<td>Describes how to analyze your IMS systems in preparation for setting QPF options</td>
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<tr>
<td>“Define the QPF options” on page 233</td>
<td>Describes the features and functions of the Queue Protection Facility (QPF)</td>
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<tr>
<td>“Building a QPF_OPTIONS command set” on page 269</td>
<td>Describes how to set the options for QPF Monitor, Protect, and Overflow phases</td>
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<td>“Manually initiating QPF actions” on page 305</td>
<td>Describes how to access the QPF Problem List and how to initiate actions to correct high-queue levels</td>
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<td>“Understanding Message Advisor and shared queues” on page 319</td>
<td>Describes Message Advisor shared queues functions</td>
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<tr>
<td>“Using the Message Advisor Analyzer Facility” on page 343</td>
<td>Describes the features and functions of the Message Advisor Analyzer Facility</td>
</tr>
<tr>
<td>“Message Advisor reports” on page 351</td>
<td>Describes Message Advisor reports, the fields on the reports, and the commands that generate the reports</td>
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Related publications

From the BMC Support Central website, you can use the following methods to access related publications that support your product or solution:


- View Quick Course videos (short overviews of selected product concepts, tasks, or features), which are available from the following locations:
  - Documentation Center (primary center and secured center)
  - Support Central (at http://www.bmc.com/support/mainframe-demonstrations)
  - BMC Mainframe YouTube channel (https://www.youtube.com/user/BMCSoftwareMainframe)


Products with online interfaces also offer online Help via the F1 key or, for graphical user interfaces (GUIs), via a Help button.

Tip
If you prefer hardcopy documentation, you can order it from your BMC sales representative or from Support Central. Also, from Support Central you can subscribe to receive proactive e-mail alerts when BMC issues notices.
Conventions

This section provides examples of the conventions used in this book and explains how to read ISPF panel-flow diagrams and syntax statements.

General conventions

This book uses the following general conventions:

<table>
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<th>Item</th>
<th>Example</th>
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</thead>
<tbody>
<tr>
<td>information that you are instructed to type</td>
<td>Type DATABASE in the designated field.</td>
</tr>
<tr>
<td>specific (standard) keyboard key names</td>
<td>Press Enter.</td>
</tr>
<tr>
<td>field names</td>
<td>Type the letter of the action that you want to perform in the Act field</td>
</tr>
<tr>
<td>text on a panel</td>
<td>The LGMSG is 35% used, and MONITOR is highlighted.</td>
</tr>
<tr>
<td>nonspecific key names, option names</td>
<td>Use the HELP function key.</td>
</tr>
<tr>
<td>MVS calls, commands, keywords, parameters, reserved words</td>
<td>Use the /DISPLAY command to display IMS resources and status.</td>
</tr>
<tr>
<td>control statements, code examples, syntax statements</td>
<td>//SYSTSIN DD * &lt;-REQUIRED</td>
</tr>
<tr>
<td>system messages</td>
<td>BMC43267I MESSAGE ADVISOR READING INPUT LOG(S), IMSID=R61P</td>
</tr>
<tr>
<td>screen text</td>
<td>PROFILE MSGID</td>
</tr>
<tr>
<td>emphasized words, new terms</td>
<td>The instructions that you give to the software are called commands.</td>
</tr>
<tr>
<td>variables</td>
<td>In this message, the variable file_name represents the file that caused the error.</td>
</tr>
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This book uses the following types of special text:

---Note---

Notes contain important information that you should consider.
**WARNING**

Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

**Tip**

Tips contain useful information that can improve product performance or that can make procedures easier to follow.

---

**IMS versions**

The term IMS refers to all supported versions and releases of IMS. The specific product name, version, and release numbers are noted only when this information is significant.

---

**Panel-flow diagrams**

Panel-flow diagrams summarize the ISPF panels that you see while completing specific tasks. The following example explains how to read a panel-flow diagram:
Introduction

This chapter provides an overview of Message Advisor. The functions and components of the product are described. Considerations and restrictions related to using Message Advisor are also discussed.

Overview

Message Advisor helps you preserve data integrity by resolving message handling problems through advanced features for dequeueing, unloading, and requeueing messages as well as displaying messages, message queue statistics, and message queue contents.

With Message Advisor, you can control and view the contents of IMS message queues by:

- Displaying message queue contents
- Dequeueing queued messages
- Unloading queued messages to external data sets
- Requeueing previously queued messages, and changing certain characteristics, if desired

Components

The IMS control region and Message Advisor Server components shown in the figure below enable you to process requests interactively or defer them for batch mode processing.

Interactive processing results are presented in panels, whereas batch results are printed. The Message Advisor ISPF interface helps you construct requests that contain command sets processed by the Message Advisor Server and IMS control region components. You can also build requests in batch.
IMS control region

Message Advisor service routines are created in the IMS control region to perform work that is required to complete a Message Advisor function. The service routines use the standard ITASK Create interface to establish control within IMS. After establishing control, the service routines validate destinations and access message queues by using standard IMS message queue processing techniques.

One component of the Message Advisor service routines is Checkpoint Tracking. After you install Message Advisor, Checkpoint Tracking resides in the IMS control region. The Message Advisor Checkpoint Tracking data set contains a record of IMS checkpoints, and Message Advisor uses these checkpoints to automatically select the correct checkpoint for requeue processing.

Message Advisor facilitates message requeue processing with automatic checkpoint tracking. The Message Advisor Checkpoint Tracking data set keeps a record of the following IMS checkpoints:

- **STARTUP**
- **SNAPQ**
- **DUMPQ**
The Message Advisor Checkpoint Tracking service routines reside and execute in the IMS control region. Message Advisor records checkpoints in the Message Advisor Checkpoint Tracking data set. Message Advisor then reads the data set to determine the correct checkpoint when you request a requeue. The Message Advisor Server uses information from the IMS RECON data sets and the Message Advisor Checkpoint Tracking data set to select the appropriate log data sets to use as input when requeueing messages. You can override this selection by specifying a checkpoint and the input data set name or the UNIT and VOLSER numbers of an uncataloged SLDS to be used for requeue.

### Message Advisor server

Message Advisor processing is controlled by a program called the Message Advisor Server. This program executes in its own address space and communicates with IMS through ECSA. The program uses proprietary BMC Software techniques and does not run as a BMP.

After you activate the Message Advisor Server, Message Advisor reads an options module to obtain information to process your requests. The options module contains information about the Message Advisor Server and its associated IMS environment (for example, names of IMS data sets). You can customize the options module to meet your specific needs.

For more information about customization, see the online help, the installation guide, and the Message Advisor for IMS Reference Manual.

### ISPF interface

The Message Advisor ISPF interface, in conjunction with the Message Advisor Server, is used to rebuild IMS message queues remotely because Message Advisor can be executed from an ISPF interface residing on a remote, nonshared DASD system.

You can perform all Message Advisor functions by using the Message Advisor ISPF interface to build command sets, execute requests, and display statistical information that could be useful in tuning IMS message queues. In addition, you can perform the following tasks by using the Message Advisor ISPF interface:

- Select individual IMS messages to browse or dequeue. For more information, see “Message Advisor ISPF interface usage” on page 59.
Submit IMS commands through the Message Advisor ISPF interface and save and/or print the output returned from IMS. For more information, see “Message Advisor ISPF interface usage” on page 59.

**Commands**

The Message Advisor base product provides the following commands:

- CUSTOMIZE
- DEQUEUE
- DISPLAY
- IMSCMD
- PLEXCMD
- REQUEUE
- UNLOAD

**CUSTOMIZE**

You can adapt Message Advisor to your IMS environments by specifying Message Advisor Server options and the following IMS options:

- Data set names
- VTAM definitions
- Processing parameters

You can also activate the Message Advisor Automatic Requeue feature.

All Message Advisor options are saved in an options module. When you install Message Advisor, you can accept the defaults or customize the product to meet your needs. You can also customize the product at any time after installation and create your own options module.

For more information about customization, see the following sections:

- For information about customization during installation, see the installation guide and the *Message Advisor for IMS Reference Manual*.

- For more information about modifying customization options after installation, see “Operational procedures” on page 39.

- For information about the automatic requeue feature, see “Requeueing messages” on page 161.
DEQUEUE

You use Message Advisor to dequeue messages from the message queues. DEQUEUE lets you dequeue input and output messages based on a wide variety of criteria.

By controlling the contents of the message queues, you can prevent IMS outages that would occur if the queues were full.

For more information about building and executing a DEQUEUE command, see “Dequeuing messages” on page 123. For a syntax diagram, sample command sets, and a description of the subcommands, keywords, and parameters associated with the DEQUEUE command, see the Message Advisor for IMS Reference Manual.

DISPLAY

You can use the DISPLAY command to view and create reports on information about your IMS message queues. You can use this information to determine how to most effectively control the contents of the message queues. For example, if you see that the message queues are getting full, you can select or reject messages to unload and dequeue. By controlling the contents of the message queues, you can prevent IMS outages that would occur if the queues were full.

For more information about building and executing a DISPLAY command, see “Displaying IMS message queues” on page 95. For a syntax diagram, sample command sets, and a description of the subcommands, keywords, and parameters associated with the DISPLAY command, see the Message Advisor for IMS Reference Manual.

IMSCMD

With Message Advisor, you can submit IMS commands through the Message Advisor ISPF and batch interfaces. The ISPF interface provides options that allow you to save and/or print the output returned from IMS.

For more information about the IMSCMD command and the ISPF interface, see “Message Advisor ISPF interface usage” on page 59. For a syntax diagram, sample command sets, and a description of the subcommands, keywords, and parameters associated with the IMSCMD command, see the Message Advisor for IMS Reference Manual.
plexcmd

With Message Advisor, you can submit IMSplex commands through the IMSplex Operations Manager interface, by using the Message Advisor ISPF command interface or through a batch server running Message Advisor. The IMSplex Operations Manager is a feature that was introduced with IMS 8.1 to provide for the following:

- Positive responses to certain IMS commands
- Ability to add commands
- Ability to simultaneously issue a command to multiple systems in an IMSplex

For a syntax diagram, sample command sets, and a description of the subcommands, keywords, and parameters associated with the PLEXCMD command, see the Message Advisor for IMS Reference Manual.

requeue

With Message Advisor, you can requeue messages in various situations, not just when messages have been lost. You can use the REQUEUE command with the UNLOAD and DEQUEUE commands to unload messages queued to a specific LTERM destination. Later, you can requeue them to the same or another LTERM. Message Advisor also provides flexible select and reject capabilities for you to use when requeueing messages.

---

WARNING

If you restart the requeue process, you may duplicate your messages. If you need to restart a requeue, contact BMC Customer Support.

Requeue from one system to another

With Message Advisor, you can requeue messages from one system to another for testing or benchmarking purposes. BMC Software recommends that you requeue messages to a production system only if they were originally generated on that system. BMC Software cautions you against requeueing messages from one production system to another because destination differences between the two can lead to unpredictable results.

If Message Advisor detects nonexistent destinations while requeueing messages that originated on a different production system, it may perform any of several options, including creating virtual destinations or scrapping messages. If the same destination represents a different application or device on the two systems, Message...
Advisor cannot detect this difference and will requeue the messages, which may cause problems for the application or device.

**Requeue between IMS versions**

With Message Advisor, you can requeue conversational and nonconversational messages between different versions of IMS.

When requeueing between different versions of IMS, if the LGMSG LRECL value for your messages remains the same, messages with the same or almost the same LRECL value may be reformatted by Message Advisor to segment the data portion into multiple physical records on the message queue. This situation arises when the new IMS version has message prefixes that are larger than the previous version. To avoid this, BMC Software recommends that you perform the following tasks:

- Increase the LRECL values of queue data sets to handle increased prefix sizes, which can be significant if APPC or OTMA capability is added to an IMS SYSGEN.

- Process all messages on a lower level of IMS before you upgrade to a higher level of IMS. If you cannot process messages on a lower level of IMS before you upgrade, minimize the number of messages that are not processed and must be requeued.

**Flexible requeue input**

You can requeue IMS messages by using input from online log data sets (OLDS), system log data sets (SLDS), data that has been unloaded from the message queue, or data that has been extracted from the OLDS or SLDS. When you requeue messages, Message Advisor performs the following tasks:

- Automatically selects the checkpoint that is used for requeueing

- Override the selected checkpoint

- Dynamically allocates log data set names obtained from RECON data sets, or lets you enter log data set names manually

- Override the log data set names by specifying an input data set name or the UNIT and VOLSER numbers of an uncataloged SLDS

- Select or reject messages, based on a wide variety of criteria

**Requeue user exit**

The REQUEUE feature provides a user exit to override selection criteria.
Automatic requeues

You can also configure Message Advisor to initiate a requeue automatically after a normal IMS cold start.

For more information about building and executing a REQUEUE command set and about using the automatically initiated requeue feature, see “Requeueing messages” on page 161. For a syntax diagram, sample command sets, and a description of the subcommands, keywords, and parameters associated with the REQUEUE command, see the Message Advisor for IMS Reference Manual.

UNLOAD

The UNLOAD command unloads messages from IMS message queues that meet your selection criteria. In effect, you are copying the messages to a sequential data set; the messages are not dequeued. After unloading messages, you can requeue them to another IMS system.

A similar function can be achieved to unload messages from IMS logs by issuing a REQUEUE MODE=EXTRACT command. You can also use the unloaded or extracted messages to create a production work load and requeue the messages to a test system. For more information about the REQUEUE command, see “Requeueing messages” on page 161, and see the Message Advisor for IMS Reference Manual.

To simultaneously unload and dequeue messages in the same command set, use the DEQUEUE command feature, MODE=UNLOAD_DEQUEUE. This feature ensures that only the messages that are unloaded will be dequeued.

You can use the unloaded messages in the following situations:

- Unload a set of messages, dequeue them from one IMS system, and requeue them to the same or another IMS system.

  Note

  BMC recommends that you use the DEQUEUE command feature, MODE=UNLOAD_DEQUEUE, whenever messages are to be unloaded and dequeued.

- Unload a production work load and requeue it to a test system. This capability is useful in quality assurance and performance testing.

  If messages are queued to a multiple system coupling (MSC) link partner that is inoperative, you can use Message Advisor to unload and dequeue these messages. Then, by using the unloaded messages, you can requeue the messages when the MSC partner is operative.
Command sets

Message Advisor uses commands, subcommands, keywords, and parameters to accomplish its functions.

These commands, subcommands, keywords, and parameters are grouped into command sets. Some subcommands can be repeated one or more times within a command set. This flexibility can be specific about which messages you want to process. For more information, see “Building and executing a command set” on page 73.

Table 1 on page 27 lists the commands and subcommands that can be used to build a particular command set.

Table 1: Message Advisor command sets

<table>
<thead>
<tr>
<th>Commands</th>
<th>Command sets</th>
<th>Subcommands</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMIZE</td>
<td>CUSTOMIZE END</td>
<td>IMS_OPTIONS LIST_OPTIONS SERVER_OPTIONS</td>
</tr>
<tr>
<td>For information about this command, see the online help and the Installation System documentation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEQUEUE</td>
<td>DEQUEUE END</td>
<td>INTERVAL OUTPUT REJECT SELECT</td>
</tr>
<tr>
<td>Display</td>
<td>DISPLAY END</td>
<td>INTERVAL REJECT SELECT</td>
</tr>
<tr>
<td>IMSCMD</td>
<td>IMSCMD END</td>
<td>None</td>
</tr>
</tbody>
</table>
### Commands and restrictions

This section describes some considerations for, and restrictions to, using Message Advisor.

### Syntax

The following considerations and restrictions apply to syntax structure:

- Message Advisor supports 64-character destinations (for TPNAMEs only) and an LUNAME keyword. The following commands/keywords accept 64-character destinations:
  - `REQUEUE SELECT/REJEC`T,DESTINATION
  - `DEQUEUE SELECT/REJEC`T,DESTINATION
  - `UNLOAD SELECT/REJEC`T,DESTINATION
  - `DEQUEUE DESTINATION`
  - `UNLOAD DESTINATION`
  - `DISPLAY DESTINATION`
The following command/keywords do not accept 64-character destinations:
REQUEUE CHGDEST, DEST and NEWDEST

Command names, keywords, and undelimited values are not case-sensitive. All lowercase characters in command names, keywords, and undelimited values will be converted to uppercase before processing begins. Therefore, commands, keywords and undelimited values can be typed in lowercase, uppercase, or mixed case.

If a keyword value contains lowercase or special characters, the value must be delimited by one of the following three methods:

— Type the value enclosed in single or double quotation marks (for example, KEYWORD='value'). The value may not contain the delimiters.

— Type the character C followed by any special character (including quotation marks) to be used as a delimiter, followed by the string, followed by the delimiter (for example, KEYWORD=C/value/). The value may not contain the delimiters.

— Type the character X followed by any special character (including quotation marks) to be used as a delimiter, followed by the value of the keyword (expressed in hexadecimal format), followed by the delimiter (for example, KEYWORD=X/E5C1D3E4C5/).

The LUNAME parameter accepts a network ID qualifier. The format is as follows:
LUNAME=netid.luname

The network ID and the LUNAME may contain mask characters where masks are allowed.

For more information about syntax restrictions, see the Message Advisor for IMS Reference Manual.

Conversational messages

The following considerations and restrictions apply to conversational messages:

— Message Advisor supports VTAM devices only.

— Input and output CNTs must match.

— The target conversational control block (CCB) cannot be active.

— Segmented SPAs are not allowed.
Requeue conversational messages

The following considerations and restrictions apply when requeuieing conversational messages:

- Only one transaction can be on the queue at a time for a given conversation ID for a given user or LTERM.
- It is not possible to "queue up" multiple instances of a conversational transaction to be executed on behalf of a user or an LTERM.
- Conversational messages are not valid for TYPE=REPROCESS.
- For REQueue TYPE=EREfail, Message Advisor will establish conversations in the same state as they existed at the Abend point after the selected checkpoint, unless CONV=NONE is specified.
- For REQueue TYPE=FILE, Message Advisor will establish conversations in the same state as they existed when the conversations were Unloaded or Extracted unless CONV=NONE is specified. Because IMS allows only one PENDING or SCHEDULED conversation for a given LTERM/USER at one time, Message Advisor may be unable to Requeue and establish some conversations without manual intervention to /EXIT or /HOLD any existing conversational work for a given LTERM/USER.
- You can execute a REQUEUE TYPE=COLD, MODE=EXTRACT from the DUMPQ to an extract file, and then execute a REQUEUE TYPE=FILE to requeue active/scheduled/held conversations.
- Message Advisor only requeues conversational messages destined for local processing.
- Message Advisor requeue processing of conversational messages assigns new CCBs to the queued conversations. Table 2 on page 30 shows the enhancements to the IMS /RELEASE command that Message Advisor provides.

Table 2: Message Advisor enhancements to the IMS /RELEASE command

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/RELEASE CONVERSATION *</td>
<td>Releases and returns the last held conversation to the IMS user</td>
</tr>
<tr>
<td>/RELEASE CONVERSATION ?</td>
<td>Returns a list of the held conversations and their associated CCB number so the user can release specific conversations</td>
</tr>
</tbody>
</table>

- If you are running BMC Software’s DELTA IMS VIRTUAL TERMINAL, held conversations are exited after requeue if the held conversation exit interval time period is exceeded. BMC Software recommends that you specify TIMESTAMP=CURRENT on the REQUEUE command or change the Held
**conversation exit interval** option in DELTA IMS VIRTUAL TERMINAL to 0 or blank. Making of these changes tells DELTA IMS VIRTUAL TERMINAL not to exit any held conversations.

For more information about the DELTA IMS VIRTUAL TERMINAL Held Conversation Exit Interval option, see the *DELTA IMS VIRTUAL TERMINAL User Guide*.

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**WARNING**

If you restart the requeue process, you may duplicate your messages. If you need to restart a requeue, contact BMC Software Product Support.

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**IMS**

Although Message Advisor does not specifically prohibit requeuing messages from one IMS system to another or from one IMS version to another, you should be aware of the following constraints:

- If you requeue from one IMS system to another, the systems must be identical; otherwise, unpredictable and possibly undesirable results may occur. For example, if one IMS system has a transaction defined that does not exist on the other IMS system, Message Advisor discards and does not requeue the messages for the undefined transaction.

- IMS prefixes usually vary from one level of IMS to another. Sometimes fields are in different locations and new functions usually require the addition of new fields. For more information, see “Requeue between IMS versions” on page 25.

Message Advisor uses the IMS counter to tally the messages dequeued from a destination. Because the IMS counter "wraps" at 64K, message number 65,536 becomes zero again. Even if more than 65,535 messages are queued to a destination, they will be dequeued; however, DEQUEUE will never report the deletion of more than 65,535. Because Message Advisor uses this same counter to calculate the totals on the DISPLAY Statistics Information panel, the total count will be inaccurate if a destination has more than 65,535 messages.

**APPC**

The following considerations apply to Advanced Program-to-Program Communications (APPC):

- **Synchronous and Asynchronous Sessions**
  
  Sessions between IMS and an LU 6.2 device can be synchronous or asynchronous. A synchronous session occurs when the LU 6.2 device sends an inbound message...
to IMS through APPC and stays connected waiting for a response, which is then delivered back to the originating device (the outbound message). There is no APPC TPNAME associated with a synchronous session.

An asynchronous session occurs when the LU 6.2 device sends an inbound message to IMS through APPC, then disconnects. IMS/APPC sends the response, the outbound message, asynchronously to TPNAME DFSASYNC or DFSCMD at the originating LUNAME. Asynchronous messages can also be sent by using DFSAPPC and specifying the TPNAME and LUNAME or an LU 6.2 descriptor which contains the TPNAME and LUNAME. An application program may also insert to a specific TPNAME and LUNAME or to an LU 6.2 descriptor.

Another type of APPC "message" is used to schedule a CPIC driven transaction. This "message" is actually considered a "scheduling request" and is never placed on the message queues. It is, therefore, not processed by Message Advisor.

- Asynchronous Outbound Message Processing

Asynchronous outbound messages are queued on the message queues and are anchored to a Queue Anchor Block (QAB) which represents a specific TPNAME/LUNAME combination. You can DISPLAY, UNLOAD, DEQUEUE, and REQUEUE these messages by using Message Advisor. Message Advisor will process these messages no differently than messages queued to other destinations. On the Message Advisor commands, the DEST= keyword is used to specify the TPNAME. If the TPNAME is unique, that is all that is necessary. If the TPNAME is not unique, the LUNAME= keyword must also be specified.

- Inbound and Synchronous Outbound Message Processing

Inbound messages and synchronous outbound messages are associated with a Transaction Instance Block (TIB) which represents an existing APPC session. Message Advisor will DISPLAY, UNLOAD, and DEQUEUE inbound messages destined to an IMS-defined transaction since they are queued to the transaction (the TIB is the origin). Message Advisor will not DISPLAY, UNLOAD, or DEQUEUE synchronous outbound messages, inbound messages for DFSAPPC, or inbound commands since these messages do not normally remain on the message queues.

Certain types of APPC messages are considered discardable because they are not retained by IMS after a warm start. The following types of APPC messages are discardable:

- Synchronous inbound messages
- Synchronous outbound messages
- Asynchronous inbound messages if an APPC synclevel of NONE is used
- Inbound messages destined for an inquiry-only or nonrecoverable transaction

When you use Message Advisor to REQUEUE APPC messages, the discardable messages will be written to the SCRAP file (they will not be requeued) unless you
use the new Message Advisor keyword, DISCARD=NO. DISCARD=NO allows discardable messages to be requeued. This keyword will also cause nonrecoverable messages not related to APPC to be requeued.

When using the REQUEUE command to reprocess discardable messages, inbound and synchronous outbound messages cannot be requeued because no APPC session (TIB) exists to associate them with. Instead, Message Advisor will change these messages to asynchronous messages and requeue them. This change will cause any responses to be queued asynchronously to TPNAME DFSASYNC or DFSCMD. If asynchronous queuing is not desirable, then DISCARD=NO should not be used.

Inbound messages destined for DFSAPPC and inbound IMS commands will never be requeued. They will always be written to the SCRAP file; however, outbound messages from DFSAPPC and commands will be requeued.

- Report Processing

  In DISPLAY and other reports, Message Advisor follows the IMS convention that if the TPNAME is DFSSIDE, it is not the real TPNAME, and the LUNAME is not the real LUNAME. Instead, the LUNAME is the symbolic destination name and is the key of an entry in the APPC/MVS side information table. This side information entry contains the real TPNAME and LUNAME. The real names are not known to IMS or Message Advisor and thus cannot be used in any Message Advisor command.

- Message Advisor does not support TPNAMEs for the following keywords:
  - ORIGIN on a SELECT or REJECT subcommand
  - CHGDEST DEST or NEWDEST keywords

OTMA

The following considerations apply to Open Transaction Manager Access (OTMA):

- When you use Message Advisor to REQUEUE OTMA messages, the discardable messages will be written to the SCRAP file (they will not be requeued) unless you use the Message Advisor keyword, DISCARD=NO. DISCARD=NO allows discardable messages to be requeued. This keyword will also cause nonrecoverable messages not related to OTMA to be requeued.
Although you may use Message Advisor to REQUEUE nonrecoverable OTMA messages by specifying the Message Advisor keyword, DISCARD=NO, IMS may elect to discard those requeued messages during a subsequent IMS restart. IMS will issue message DFS2610 MSG-Q ERRORS FOUND/CORRECTED. MSG MAY BE LOST and will create X’3B’ and X’3C’ log records to describe the messages it discards.

- Message Advisor does not support OTMA for the following keywords:
  - ORIGIN on a SELECT or REJECT subcommand
  - CHGDEST DEST or NEWDEST keywords

**Performance**

By design, Message Advisor uses significant amounts of memory. If Message Advisor is restricted from using extensive extended private area (EPVT), it is forced to use time-consuming I/O processing (paging). To avoid this, Message Advisor must be run in an MVS performance group with an unlimited working set size. Otherwise, Message Advisor may run significantly slower.

When running head-to-head benchmarks with other message requeuer products, consider the impact of requeueing intersystem communication (ISC), multiple systems coupling (MSC), and conversational messages. Preliminary internal benchmark tests at BMC Software revealed that Message Advisor may appear to run slower because Message Advisor is requeueing a significant number of ISC, MSC, and conversational messages that other products do not requeue. A way to avoid this problem is to increase the number of IMS message queue buffers to safely accommodate the larger number of messages to be requeued and the increased rate at which Message Advisor accesses the IMS message queues.

**Storage**

Message Advisor requires DASD and real storage. Message Advisor requires allocation of DASD work space, which will vary according to the quantity of messages being processed.

BMC Software recommends that you specify a region size large enough to force allocation of all available EPVT storage. A larger region will reduce overflows to DASD storage. The amount of storage required for executing a requeue request depends on the type and size of the checkpoint. For a requeue after an /ERE failure, the storage required depends on the size of the checkpoint plus any additional log records. Requeue processing is normally performed while the production IMS
system is inactive. Allocating all available storage will reduce overflow to the Message Advisor spill files on DASD.

BMC Software does not recommend specifying Region=0MB. It usually does not allocate all available storage. Specify the region size available to your MVS system. For example, Region=64MB.

**REQUEUE INCORE keyword**

When requeueing messages, you can ensure better performance by specifying the INCORE keyword as YES or FIXED on the REQUEUE command.

INCORE=YES causes the log records to be stored in main memory instead of on spill files. When specifying this parameter as YES, make sure there is no working set size limit for the performance group where the job is executing.

INCORE=FIXED causes log records to be page-fixed in main storage. Page-fixing main storage can have a significant impact on the performance of other system applications. When specifying this parameter as FIXED, make sure that the need to perform a REQUEUE outweighs the performance impact to other system applications.

**Automatic requeue**

BMC Software recommends that you use the automatic requeue feature only with REQ_PROMPT=YES. If you activate the automatic requeue feature with REQ_PROMPT=NO, Message Advisor will initiate a requeue with no operator supervision. In some situations, the checkpoint that Message Advisor automatically selects may not be the checkpoint that you need to requeue your IMS messages.

**Redefine destinations from local to remote**

If a transaction is changed from Local to Remote (by a sysgen or with an /MSASSIGN command) between the time an UNLOAD/EXTRACT and a REQUEUE is performed, these messages are discarded to the Scrap file.

Message Advisor does not support requeues to a transaction if the characteristics of the transaction have changed from those specified when the messages were initially inserted.
LOCAL COPY PLUS

If you use the BMC Software LOCAL COPY PLUS product, do not attempt to requeue messages for LCPTRAN1, the LOCAL COPY PLUS IMS administrative transaction. When LOCAL COPY PLUS handles messages for this transaction, portions of the processing occur in the control region as the message passes through IMS terminal I/O routines. When Message Advisor requeues these messages, the IMS terminal routines are bypassed and the control region processing of the message is not performed. Requeueing messages for LCPTRAN1 will not cause internal errors, but the transaction will not process as expected. This restriction applies only to LCPTRAN1. Because output of the LOCAL COPY PLUS COPY/PRINT function is written to the message queues as complete records, Message Advisor can requeue all output for this function.

Locate tasks

Message Advisor tasks are described in the manuals provided with the product. The following tables are a quick reference to the most common Message Advisor tasks.

Table 3 on page 36 identifies Message Advisor tasks and shows the manual name and chapter number of the task description.

Table 3: Message Advisor task locator

<table>
<thead>
<tr>
<th>Subject or task</th>
<th>Manual and chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Message Advisor</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Message Advisor initial and maintenance installations</td>
<td>Installation System documentation</td>
</tr>
<tr>
<td>Message Advisor installation verification procedure</td>
<td>Installation System Reference Manual</td>
</tr>
<tr>
<td>Accessing help online</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Accessing messages online</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Displaying IMS message queues</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Using the Message Advisor ISPF interface</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Creating and executing commands sets</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Subject or task</td>
<td>Manual and chapter</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reports and statistics</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>CPU ID password processing</td>
<td>Installation System Reference Manual</td>
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<tr>
<td>Message Advisor utilities</td>
<td>Message Advisor for IMS User Guide</td>
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<tr>
<td>Diagnostics tools--TRACE</td>
<td>Installation System Reference Manual</td>
</tr>
<tr>
<td>Message Advisor utilities</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Assigning conditional steps to a Message Advisor request</td>
<td>Message Advisor for IMS Reference Manual</td>
</tr>
<tr>
<td>Using the Message Advisor Shared Queues Analyzer facility</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Overview of QPF</td>
<td>Message Advisor for IMS User Guide</td>
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<tr>
<td>QPF automated processing</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>QPF manual processing</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Testing QPF Options command sets</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>List QPF Options example</td>
<td>Message Advisor for IMS Reference Manual</td>
</tr>
<tr>
<td>Subject or task</td>
<td>Manual and chapter</td>
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<td>---------------------------------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>List QPF Problems example</td>
<td>Message Advisor for IMS Reference Manual</td>
</tr>
<tr>
<td>Testing a QPF_OPTIONS command set</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
<tr>
<td>Reports and statistics</td>
<td>Message Advisor for IMS User Guide</td>
</tr>
</tbody>
</table>
Operational procedures

Information in this chapter is designed to help you in the daily use of Message Advisor.

Start and run the Message Advisor server

The Message Advisor Server accepts input from Message Advisor commands. Input from Message Advisor commands lets you requeue, dequeue, unload, and display messages residing in the IMS message queues as well as issue IMS commands. The Message Advisor Queue Protection Facility (QPF) component commands let you monitor your IMS messages queues and prevent message queue overflows by dynamically manipulating message queues. Input from Message Advisor commands may be interactively presented to the Message Advisor Server from an ISPF interface, an outstanding WTOR, or SYSIN input.

The Message Advisor Server and the IMS system that it serves must run on the same CPU. Because BMC Software recommends normally running a single Message Advisor Server for each MVS system, a single Message Advisor Server can service more than one IMS system.

However, if you operate in a multiple-CPU environment, use of standard JES controls will ensure that all Message Advisor batch jobs, including jobs submitted from the ISPF interface, run on the correct CPU. These controls include the use of one of the following statements:

- ROUTE statement in JES2
- MAIN SYSTEM statement in JES3
- CLASS=c statement in JES2 or JES3 (where c is an initiator class that has initiators started on the CPU that you want to run the Message Advisor batch job only)

The Message Advisor Server accepts input in the form of command sets (requests), which consists of commands, subcommands, keywords, and parameters. Each command set must end with an END statement.
IMS checkpoints

The Message Advisor Server keeps a record of the following IMS checkpoints:

- STARTUP
- SNAPQ
- DUMPQ
- PURGE
- FREEZE

Message Advisor records these checkpoints in the Message Advisor Checkpoint Tracking data set, where they automatically provide the correct checkpoint when you request a requeue.

To enable Message Advisor to record these IMS checkpoints, you must perform the following tasks:

- By installing the Message Advisor product via the BMC Installation System, an ALIASED version of DFSMVRC0 module is added to the ICOLIB load library (or, if you performed a merged install, the module will be found in the IMLIB load library).

- The aliased DFSMVRC0 module is required and must reside in an APF-authorized library that is concatenated before the IMS RESLIB to ensure that MVS will load the Message Advisor Checkpoint Tracking component first when starting an IMS system. Message Advisor will then correctly load the IMS copy of the load module.

For more information, see the Installation System documentation.

Run Message Advisor interactively

You can start the Message Advisor Server to process interactive requests through the following two methods:

- Submit Message Advisor Server JCL as a job.

- Run the Message Advisor Server as a console-started task (by placing the online server JCL in the PROCLIB and issuing an MVS START command).

For more information about setting up online JCL, see the sample JCL located in MAQCNTL member QMR#STRT.

After you start the Message Advisor Server in interactive mode, it waits for input from TSO by using the VTAM LU 6.2 interface or from the outstanding WTOR. This
WTOR is issued when the Message Advisor Server is started. The input can contain one or more requests, which will be processed in the order received.

--- Note ---
You can cause the server to stop issuing the WTOR by replying HIDE. To reinstate display of the WTOR again, issue the F server, SHOW command.

You can start the Message Advisor Server for a brief period and then bring it down, or you can run it continuously. If you want to use Message Advisor throughout the day, run the Message Advisor Server continuously. Running it continuously lets you run tasks repeatedly, such as unloading and dequeueing, without having to first bring up the Message Advisor Server.

However, certain tasks can run very quickly. If you want to perform these tasks infrequently, you could bring up the Message Advisor Server as necessary. If you wanted to display the message queue statistics once a week, you would not need to run the Message Advisor Server continuously. Therefore, you would bring it up to run the display and then take it down.

### Running Message Advisor in batch mode

You can run the Message Advisor Server in batch mode by specifying PARM='server_name,BATCH,lines-per-page' as the parameter string to the Message Advisor Server program. lines-per-page specifies the number of lines printed on each page of Message Advisor reports. Sample JCL is located in MAQCNTL member QMR#BJCL.

When you start the Message Advisor Server in batch mode, it processes the request contained in the member specified on the SYSIN DD statement.

The request can consist of multiple command sets, and the command sets are processed as they are read. The Message Advisor Server terminates when it reaches the end of the SYSIN data set. Figure 2 on page 41 shows sample JCL for running Message Advisor in batch mode.

--- Note ---
Message Advisor invokes the SORT utility. If you need to use required ddnames with the SORT utility, include them in the batch job JCL.
In addition, Message Advisor uses SYSPRINT for output messages. Do not customize the SORT utility to use SYSPRINT. For print jobs, use SYSOUT with its default values.

--- Figure 2: Sample JCL to run Message Advisor in batch ---

```
//JOBNAME    (ACCOUNT),
//MSGCLASS=X,CLASS=A,USER=user name
```
Whenever the Message Advisor Server is active, a WTOR is outstanding. You can use the WTOR to obtain the status of the Message Advisor Server activity, to input Message Advisor and/or IMS commands, or to stop the Message Advisor Server.

Change Message Advisor and IMS options

After you initially install Message Advisor, you might need to change the Message Advisor Server options or the options that define the associated IMS system. For example, if you initially installed Message Advisor in a test environment and you want to move it to a production environment, you may need to change the Message Advisor Server options or the options that define the associated IMS system. This section explains how to make these changes.
The Message Advisor Options Module can be changed by batch or ISPF at any time, however the changes become effective only when one of the following events takes place:

- Changes to Message Advisor Server options—the next time the Message Advisor Server is started.
- Changes to most IMSID-specific options—take affect as soon as they are saved. However, the following IMSID options will be refreshed during IMS restart:
  - Automatic start commands
  - Automatic SNAPQ Option
  - Checkpoint Tracking (may also be refreshed with a /CHE SNAPQ if using Message Advisor for IMS 1.2.02 and later)

Modify the Message Advisor options module

To add, change, or delete Message Advisor Server or IMS options, you must modify the Message Advisor options module. You can perform this task online or in batch. To add or change options in batch, see the sample JCL in MAQCNTL member QMR#OPTS.

To perform the task online, access the Message Advisor - Primary Menu panel (Figure 3 on page 43).

Figure 3: Message Advisor Primary Menu panel

<table>
<thead>
<tr>
<th>File</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Advisor - Primary Menu</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following. Then press Enter.

1. Build and execute Message Advisor requests
   Request library ____________________________________________
2. Display and/or dequeue specific IMS messages
3. Display statistics for the IMS messages queues
4. List IMS log/checkpoint history
5. Customize Server and IMS options
6. Execute Message Advisor and IMS commands
7. BMC Software Product Authorization by CPU ID
8. Queue Protection Facility
9. Analyzer Display for Shared Queues

IMSID . . . . ____ + (for options 2, 3, 4, 6, 8, 9)
Server name . . ____ + (all options)

'+' following an entry field indicates that the PROMPT action is available.

Type 5 in the choice entry field to choose Customize Server and IMS options and press Enter.
Subsequent Message Advisor customization panels will be displayed. Supply the appropriate information to each.

For more information about each customization panel, see the online help.

**Modify session options**

The Session action bar pull-down menu lets you select actions to specify your Message Advisor Server production environment, check session status, start or stop sessions, and choose to wait on an active request.

To change the session options, use the Session option on the Message Advisor action bar pull-down menu (Figure 4 on page 44).

**Figure 4: Session action bar pull-down menu**

<table>
<thead>
<tr>
<th>File</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Session control options...</td>
<td>Primary Menu</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>2. Session status...</td>
<td>ter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Start session...</td>
<td>uests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Stop all sessions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>5. Wait on active request</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Display and/or dequeue specific IMS messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Display statistics for the IMS messages queues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 on page 44 lists the actions that are available on this pull-down menu. Type the number of the action that you want to perform in the choice entry field, and press Enter.

**Table 4: Action items available on the pull-down menu**

<table>
<thead>
<tr>
<th>Action item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Session control options</td>
<td>Use to establish your Message Advisor Server and user session options</td>
<td>See “Session Control” on page 45</td>
</tr>
<tr>
<td>2. Session status</td>
<td>Use to check the status of your sessions</td>
<td>See “Session Status” on page 51</td>
</tr>
<tr>
<td>3. Start session</td>
<td>Use to start a session</td>
<td>See the VTAM Session panel in “Session Status” on page 51</td>
</tr>
<tr>
<td>4. Stop all sessions</td>
<td>Use to stop all sessions</td>
<td>See “Stop All Sessions” on page 54</td>
</tr>
<tr>
<td>5. Wait on active request</td>
<td>Use to wait until an active request is completed</td>
<td>See “Waiting” on page 55</td>
</tr>
</tbody>
</table>
Session Control

Use the Session Control options to customize the sessions between your TSO user ID and the Message Advisor Server. Changing these options affects only your TSO user ID. The first three VTAM session options are required before you can communicate with a Message Advisor Server.

Session Control panel (1 of 4)

When you select Session Control from the pull-down menu, the Session Control pop-up panel (Figure 5 on page 45) is displayed.

Figure 5: Session Control panel (Page 1 of 4)

This panel contains the following fields:

- VTAM session LU name prefix
  
  This prefix consists of the first four characters of the VTAM APPLIDs that were allocated at your site for use by the Message Advisor ISPF interface. Message Advisor ISPF appends a numeric suffix (0001, 0002, etc.) to obtain the complete VTAM APPLID. Depending on how Message Advisor was installed, this field may be filled in with a prefix for your site. If not or if an error occurs, contact your system administrator.

- VTAM APPLID for Message Advisor
  
  This APPLID is currently being used by the Message Advisor Server with which you want to communicate. Depending on how Message Advisor was installed, this field may be filled in with an APPLID for your site. If not or if an error occurs, contact your system administrator for assistance.
- VTAM logmode
  This VTAM logmode table entry is assigned at your site for use by Message Advisor. Depending on how Message Advisor is installed, this field may be filled in with a logmode for your site. An invalid logmode will not cause a fatal error, but it may cause a message to appear at your system console or slow down Message Advisor response. When you execute a request or select an option that requires information from the Message Advisor Server, the Message Advisor ISPF interface automatically starts a VTAM LU 6.2 session with the Message Advisor Server identified by the VTAM APPLID described above.

  Some requests may take a long time to complete. The Message Advisor ISPF interface displays the Waiting panel in such cases to inform you about the request status. Any significant messages received from the Message Advisor Server are displayed on the Waiting panel as they are received. The following three options allow you to control the display of the wait panel:

  — Display wait pop-up after
    This option tells the Message Advisor ISPF interface how long to wait (in seconds) before displaying the Waiting pop-up panel for the first time. This capability avoids the overhead of displaying the Waiting panel briefly for requests which complete quickly. The Message Advisor ISPF interface ignores this option and displays the panel immediately if a significant message is received from the Message Advisor Server.

  — When waiting, update display every
    This option tells the Message Advisor ISPF interface how often (in seconds) to update the wait panel after the initial display. The Message Advisor ISPF interface updates the elapsed time display on the panel to assure you that Message Advisor ISPF interface is still waiting for the Message Advisor Server. The panel will be updated immediately if a significant message is received from the Message Advisor Server.

  — Pacing value for message display
    Significant messages from the Message Advisor Server are displayed on the Waiting panel and scrolled off as the panel fills up. If several messages are received at once, they may scroll off the panel before you have time to read them. The pacing value tells the Message Advisor ISPF interface to wait for a short period after displaying each message before displaying the next message. The value is specified in hundredths of seconds (10 indicates 10/100ths or one-tenth of a second). You can always scroll back through the messages when a request completes; so not seeing a message may not cause a problem.

    Some requests for information from the Message Advisor Server may result in hundreds or thousands of data items in reply. If the Message Advisor ISPF interface waited for all of these to be returned, response time would suffer. Therefore, the Message Advisor ISPF interface stops waiting and displays the interim results as soon as possible.
When you use option 2 on the Message Advisor Primary Menu to display destinations with messages, the Message Advisor ISPF interface displays a list of destinations as soon as some destinations are returned from the Message Advisor Server. You can scroll past the bottom of the list to retrieve more destinations. Each time you scroll past the bottom, more destinations will be added to the list.

When you use option 4 on the Message Advisor Primary Menu to display log and checkpoint history, the Message Advisor ISPF interface displays a list of logs as soon as some SLDS are returned from the Message Advisor Server. You can scroll past the end of the list to retrieve more data set names. Each time you scroll past the end, more data set names are added to the list.

When you use option 8 on the Message Advisor Primary Menu to display the QPF Problem List, the Message Advisor ISPF interface displays the problems list. This is the default maximum number of entries to be displayed.

**Session Control panel (2 of 4)**

To see page 2 of the Session Control pop-up panel (Figure 6 on page 47), page down.

**Figure 6: Session Control panel (Page 2 of 4)**

- S  Session Control
  Select one from each group. Then press Enter. Page 2 of 4
  More: < >
  When executing command sets, show
  1. All messages
  2. Error and warning msgs
  3. Error messages only
  4. No messages
  For internal ISPF requests, show
  3. All messages
  2. Error and warning msgs
  3. Error messages only
  4. No messages
  Log/Checkpoint list order
  2. Most recent at top
  2. Most recent at bottom

This panel contains the following fields:

- When executing command sets, show
  The Message Advisor ISPF interface displays significant messages on the Waiting panel while a request is executing. You use this option to tell the Message Advisor ISPF interface which messages are significant. This option applies only to requests that you explicitly execute from option 1 on the Message Advisor Primary Menu.
For internal ISPF requests, show

Use this option to tell Message Advisor ISPF which messages are significant for internal ISPF requests. The Message Advisor ISPF interface issues these requests internally to obtain data from the Message Advisor Server. For example, options 2, 3, 4, and 5 on the Message Advisor Primary Menu all result in internal ISPF requests.

Log/Checkpoint list order

Option 4 on the Message Advisor Primary Menu, as well as the PROMPT action for checkpoints and log data set names when building a REQUEUE command, results in a display of logs and/or checkpoints. Use this option to control the order of these lists. When the list is first displayed, the most recent elements will be displayed whether they are at the top or the bottom of the list. You then scroll up or down to access older elements.

Session Control panel (3 of 4)

To see page 3 of the Session Control pop-up panel (Figure 7 on page 48), page down.

Figure 7: Session Control panel (Page 3 of 4)

This panel contains the following fields:

- Prompt for VTAM LU names each time a session starts
  If you do not select this option, the Message Advisor ISPF interface automatically starts a session with VTAM and with the Message Advisor Server whenever necessary, by using the APPLIDs specified on Page 1 of 4. If you select this option, the Message Advisor ISPF interface prompts you before starting a session. This prompt is useful if you have several Message Advisor Servers and want to be able to select the appropriate Message Advisor Server for each request.
Include default values in all command sets built

Use this option when you build a request (option 1 on the Message Advisor Primary Menu). The Message Advisor command sets can contain many keywords, most of which have default values. If you do not select this option, the command sets you build will not contain any of the keywords for which you have selected the default value. This feature makes the command sets simpler and easier to understand. If you select this option, the command sets you build will contain all applicable keywords, even if the default value was selected. This selection makes the command sets longer but shows the options you chose more explicitly and makes it easier to edit the command set if you want to update a value manually.

Confirm before executing/submitting a request

If you select this option, when you use the execute (Q or X) action from the Member List or the EXECUTE or SUBMIT command while updating a request, you are prompted to confirm the request.

Confirm JCL before adding for submit

If you select this option, when you use the execute (X) action from the Member List or use the SUBMIT command while updating a request, the Message Advisor ISPF interface checks the member to see whether it contains JCL. If so, the Message Advisor ISPF interface submits it as is without confirmation. If the member contains no JCL, the Message Advisor ISPF interface appends the JCL before submitting the request. The Confirm JCL panel is displayed to show you the JCL before adding it to the request.

Confirm before deleting members

If you select this option, when you use the delete (D) action from the Member List, you are prompted to confirm the requested deletion.

Confirm before saving members

If you select this option, when you use the save (S) action from the Member List to update a request and make any changes, the Confirm Save panel is displayed when you exit or cancel. You can choose to save the request in the same or a different member or to cancel the changes.

Confirm changes to individual command sets

If you select this option, after updating an individual command set in a request, the Confirm Changes panel is displayed. With this panel you can accept or cancel the changes. Accepting the changes here does not save the request; it merely updates the request in storage. You can still cancel all changes to the request without saving. The purpose of this confirmation is to allow you to cancel changes to the command set without affecting other changes you may have made to other command sets.
Confirm before dequeueing messages interactively

If you select this option, the Confirm DEQUEUE panel is displayed when you use option 2 on the Message Advisor Primary Menu to display messages and then use the Dequeue message (D) action to dequeue messages.

Confirm before saving changes to customization options

If you select this option, the Confirm Save panel is displayed when you use option 5 on the Message Advisor Primary Menu to update and save customization options.

Confirm before deleting customization options

If you select this option, the Confirm Delete panel is displayed when you use option 5 on the Message Advisor Primary Menu and then use the Delete (D) action to delete a set of customization options.

Confirm before executing QPF actions

If you select this option, the Confirm QPF Actions panel is displayed when you use option 8 on the Message Advisor Primary Menu and then initiate a QPF action against any problem on the QPF Problem List.

Session Control panel (4 of 4)

To see page 4 of the Session Control pop-up panel (Figure 8 on page 50), page down.

Figure 8: Session Control panel (Page 4 of 4)

This panel shows the JCL that is appended to a request when you execute a request by using the X (execute in batch) action on the Request Member List.
Session Status

The following figure shows the Session Status pop-up panel. On this panel, you can choose the View, Select, Cancel and Disconnect actions. You use these options when you have interrupted a request by pressing Attn.

Figure 9: Session Status panel

Table 5 on page 51 describes the action codes. Type the letter of the action that you want to perform in the Act field, and press Enter.

Table 5: Action field codes

<table>
<thead>
<tr>
<th>Action code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Waits on an active request or sees results of a request that is finished processing</td>
</tr>
<tr>
<td>C</td>
<td>Cancels the request</td>
</tr>
<tr>
<td>V</td>
<td>Views any significant messages that have been received, even if the request is not completed</td>
</tr>
<tr>
<td>D</td>
<td>Terminates the session with the Message Advisor Server without canceling the request</td>
</tr>
</tbody>
</table>

Table 6 on page 51 describes the other items displayed on the line.

Table 6: Line item descriptions

<table>
<thead>
<tr>
<th>Line item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server</td>
<td>Name of the Message Advisor Server in session</td>
</tr>
<tr>
<td>Task</td>
<td>Task number assigned to the request</td>
</tr>
<tr>
<td>Line item</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Started</td>
<td>Shows one of the following values:</td>
</tr>
<tr>
<td></td>
<td><strong>Inactive</strong></td>
</tr>
<tr>
<td></td>
<td>No request is active, but a session has been started.</td>
</tr>
<tr>
<td></td>
<td><strong>A time value</strong></td>
</tr>
<tr>
<td></td>
<td>A request has been started and has been active since the time shown.</td>
</tr>
<tr>
<td></td>
<td><em><strong>Done</strong></em></td>
</tr>
<tr>
<td></td>
<td>A request has been completed. To see the results, type S.</td>
</tr>
<tr>
<td></td>
<td><em><strong>Stopped</strong></em></td>
</tr>
<tr>
<td></td>
<td>The session has been terminated.</td>
</tr>
<tr>
<td></td>
<td><em><strong>Error</strong></em></td>
</tr>
<tr>
<td></td>
<td>A transmission error has occurred. The session is terminated.</td>
</tr>
</tbody>
</table>

When you request the START action, you might be prompted for the VTAM LU name prefix to establish communications through VTAM. Figure 10 on page 52 on page 58 shows the first of two VTAM Session pop-up panels.

**Figure 10: First VTAM Session panel**

```
File  Session  Display  Help
Message Advisor - Primary Menu
VTAM Session
A pre-defined VTAM LU name prefix is required in order to establish communications through VTAM. Please contact your system administrator if you do not know what to type.
VTAM session LU name prefix . . . QMRU
Use END or CANCEL to exit without establishing a session.
Command ===> _____________________________________________
'-------------------------------------------------------------'
```

This panel contains the following field:
VTAM session LU name prefix

This prefix consists of the first four characters of the VTAM APPLIDs that were allocated at your site for use by the Message Advisor ISPF interface. The Message Advisor ISPF interface appends a numeric suffix (0001, 0002, etc.) to obtain the complete VTAM APPLID. Depending on how Message Advisor was installed, this field may be filled in with a prefix for your site. If not or if an error occurs, contact your system administrator.

Type the LU name prefix, and press Enter.

The second VTAM Session panel (Figure 11 on page 53) is displayed.

Figure 11: Second VTAM Session panel

This panel contains the following fields:

- VTAM APPLID for Message Advisor
  This APPLID is currently being used by the Message Advisor Server with which you want to communicate. Depending on how Message Advisor was installed, this field may be filled in with an APPLID for your site. If not or if an error occurs, contact your system administrator.

- VTAM logmode
  This VTAM logmode table entry is assigned at your site for use by Message Advisor. Depending on how Message Advisor is installed, this field may be filled in with a logmode table for your site. An invalid logmode table will not cause a fatal error, but it may cause a message to appear at your system console or slow down Message Advisor response. When you execute a request or select an option that requires information from the Message Advisor Server, the Message Advisor ISPF interface automatically starts a VTAM LU 6.2 session with the Message Advisor Server identified by the VTAM APPLID described above.

If you have already specified your VTAM session LU name prefix, the VTAM APPLID for Message Advisor, and the VTAM logmode options, and you have
requested the START session action, the Message Advisor Server List pop-up panel (Figure 12 on page 54) is displayed.

**Figure 12: Message Advisor Server List panel**

This panel contains the following fields:

- **VTAM APPLID for Message Advisor**
  
  This APPLID is currently being used by the Message Advisor Server with which you want to communicate. Depending on how Message Advisor was installed, this field may be filled in with an APPLID for your site. If not or if an error occurs, contact your system administrator.

- **VTAM logmode**
  
  This VTAM logmode table entry is assigned at your site for use by Message Advisor. Depending on how Message Advisor is installed, this field may be filled in with a logmode table for your site. An invalid logmode table will not cause a fatal error, but it may cause a message to appear at your system console or slow down Message Advisor response. When you execute a request or select an option that requires information from the Message Advisor Server, the Message Advisor ISPF interface automatically starts a VTAM LU 6.2 session with the Message Advisor Server identified by the VTAM APPLID described above.

**Stop All Sessions**

If you request the STOP action and sessions are started but inactive, a message is displayed in the upper right corner, as highlighted in the following figure.

**Figure 13: Primary Menu with all sessions stopped message**
1. Build and execute Message Advisor requests
   Request library bmcnode.QMR.REQUEST

2. Display and/or dequeue specific IMS messages
3. Display statistics for the IMS messages queues
4. List IMS log(checkpoint history)
5. Customize Message Advisor Server and IMS options
6. Execute Message Advisor and IMS commands
7. BMC Software Product Authorization by CPU ID

If you request the STOP action and sessions are active, the Confirm Disconnect pop-up panel (Figure 14 on page 55) is displayed.

**Figure 14: Confirm Disconnect panel**

Choose the appropriate action and press **Enter**. You can also use the STATUS action to cancel specific requests.

**Waiting**

The Waiting pop-up panel is displayed when a Message Advisor request is in progress or when you request the WAIT action.

Some requests might take a long time to complete. In such a case, the Message Advisor ISPF interface displays the Waiting pop-up panel (Figure 15 on page 55) to inform you about the request status. Any significant messages received from the Message Advisor Server are displayed on the Waiting panel as they are received.

**Figure 15: Waiting panel**
This panel tells you how long the request has been processing. Set the value that specifies when the Waiting panel is displayed and how often it is updated on the Session Control panel (Page 1 of 4). See “Session Control” on page 45.

If you do not want to wait, press Attn. The Session Status panel (“Session Status” on page 51) is displayed.

### Defining Message Advisor data sets

When defining Message Advisor data set names during options customization, be sure to note the names that you assign to these data sets since you will use these names in the subsequent allocation step. When allocating data sets, consider the following points:

- A unique CHECKPOINT data set is required for each IMSID specified during options customization. Message Advisor Checkpoint Tracking uses this data set to maintain a record of checkpoints, which may later be used for requeue processing. Message Advisor Checkpoint Tracking automatically activates when you install the Message Advisor libraries in the IMS control region.

- A SPILL1 data set may be required for each IMSID specified during options customization. Message Advisor uses this data set during a `REQUEUE TYPE=COLD/EREFAIL/REPROCESS` to hold overflow from main storage for checkpoint records. If overflow occurs and this data set is not available, the requeue process fails. You can specify this data set at command execution time. This data set is required if the extended private storage is exhausted during a requeue.

- A SPILL2 data set is required for each IMSID specified during options customization. Message Advisor uses this data set during a `REQUEUE TYPE=EREFAIL/REPROCESS` to hold log data that will be sorted. You cannot specify this data set at command execution time. This data set is always required for `REQUEUE TYPE=EREFAIL/REPROCESS`. This data set will be created dynamically as temporary files if the DSNs specified in the IMSID options are not found.

- A unique SPILL3 data set is required for each IMSID specified during options customization. Message Advisor uses this data set during a `REQUEUE TYPE=EREFAIL/REPROCESS`, which begins from a SNAPQ, to hold overflow from main storage. This data set contains 01, 03, and 3X log records. You cannot specify
this data set at command execution time. This data set is required if the extended private storage is exhausted during a requeue. This data set will be created dynamically as temporary files if the DSNs specified in the IMSID options are not found.

- A unique SPILL4 data set is required for each IMSID specified during options customization. Message Advisor uses this data set during a **REQUEUE TYPE=EREFAIL/REPROCESS** to hold overflow from main storage. The data set contains 01 and 03 log records. You can specify this data set at command execution time. This data set is required if the extended private storage is exhausted during a requeue.

- The UNLOAD command set and the **DEQUEUE MODE=UNLOAD_DEQUEUE** command set require that you provide a data set to which messages will be unloaded. This data set can be supplied during options customization or specified at command execution. If specified at command execution, you use the **OUTPUT subcommand. Specify OUTPUT DSN** to provide a preallocated data set for the UNLOAD or DEQUEUE command sets. For more information about data set characteristics, see **MAQCNTL member QMR#ALLO. For more information about the UNLOAD command, see “Unloading messages” on page 145.**

- An EXTRACT data set is optional for each IMSID specified during options customization. This data set can be supplied during options customization or specified at command execution. If specified at command execution, you use the **EXTRACT subcommand. Specify EXTRACT DSN** to provide a preallocated data set for the extract process. For more information about data set characteristics, see **MAQCNTL member QMR#ALLO. This data set is required if you use REQUEUE MODE=EXTRACT, which copies messages into this data set. These messages can later be used as input to a requeue if you use REQUEUE TYPE=FILE. For more information about the REQUEUE command, see “Requeueing messages” on page 161.**

- A SCRAP data set is optional for each IMSID specified during options customization. This data set can be supplied during options customization or specified at command execution. If specified at command execution, you use the **SCRAP subcommand. Specify SCRAP DSN** to provide a preallocated data set for the unload procedure. For information about data set characteristics, see **MAQCNTL member QMR#ALLO. If this data set is available during a requeue, Message Advisor writes messages to the data set that cannot be requeued. These messages cannot be requeued because of an exception condition. For example, an exception condition could include an LTERM or transaction that no longer exists in IMS. For more information about the REQUEUE command, see “Requeueing messages” on page 161.”
Message Advisor ISPF interface usage

This chapter describes how to use the Message Advisor ISPF panels.

Overview

The conventions for using the Message Advisor ISPF panels, pull-down menus, and panels are described. All of the panels, pull-down menus, and panels in the interface conform to IBM’s Common User Access (CUA) standards.

Also described is how to access the Message Advisor messages and the detailed help online. The online message explanations are the same as those in the BMC Documentation Center. The online help provides panel- and field-level descriptions.

Message Advisor ISPF interface

The Message Advisor ISPF interface is a text-subset CUA-compliant dialog that helps you perform the following tasks:

- Build and execute Message Advisor requests.
- Select messages to display or dequeue.
- Display IMS message queue statistics.
- Display log and checkpoint history.
- Customize the Message Advisor Server and IMS options.
- Submit commands to IMS.
- Work with CPU ID passwords.
You can use the Message Advisor ISPF panels to build and execute requests. Once built, the requests, consisting of one or more command sets, are maintained as members in a partitioned data set. By using Message Advisor, you can select the requests for execution. They are then transferred from the ISPF session to the Message Advisor Server by using the VTAM LU 6.2 interface. It is not necessary for the ISPF session to reside on the same CPU as the Message Advisor Server if VTAM cross-domain features are used.

**Scroll information**

Whenever the **Scroll** field is displayed on a panel, you can use the function keys designated as your scrolling keys to page forward or backward through a list. Press the function key designated as your **UP** key, usually F7, to move toward the top of the list. Press the key designated as your **DOWN** key, usually F8, to move toward the bottom of the list.

The **More: < - + >** display continuation symbol is displayed above the scrollable portion of the panel whenever all of the available data is not displayed. Table 7 on page 60 describes the symbols.

**Table 7: Description of scroll fields**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;</td>
<td>LEFT scroll key displays more data</td>
</tr>
<tr>
<td>-</td>
<td>UP scroll key displays more data</td>
</tr>
<tr>
<td>+</td>
<td>DOWN scroll key displays more data</td>
</tr>
<tr>
<td>&gt;</td>
<td>RIGHT scroll key displays more data</td>
</tr>
</tbody>
</table>

If all available data fits on the panel, the scrolling symbols are not displayed.

The numbers listed above the scroll indicator (Figure 16 on page 60) represent the current row number and the total rows in the list.

**Figure 16: Sample scroll indicators**

![Sample Panel]

Command ===> ____________________ Scroll ===> ____________________

ROW 1 of 99
MORE: - +
Pop-Up navigation panels

The Message Advisor ISPF interface consists of a combination of panels and pop-up panels. You can navigate through a group of pop-up panels in the following manner:

- To go through the pop-up panels sequentially, press Enter.
  
  The pop-up panels are presented in the order in which they appear on the above panel. Each pop-up panel tells you where you are in the series by displaying Page x of y in the upper right corner of the panel.

- To go directly to a pop-up panel, type the number of the selection and press Enter.

- To exit a series of pop-up panels without going through the entire group, press END.

Prompts

Fields on Message Advisor panels and pop-up panels followed by a + provide a PROMPT capability, as shown in the following figure.

Figure 17: Panel with PROMPT field

Place the cursor on the prompt field and press F4 to view a pop-up panel showing the valid values for that field. You can also type the PROMPT command in the Command area to display a list of valid commands.

Figure 18 on page 61 shows the List of IMS Queues pop-up panel displayed when you place the cursor in the Queue field on the REQUEUE Message Selection panel and press F4 for PROMPT.

Figure 18: Sample Prompt pop-up panel
Command area

You can type any valid command in the **Command** area that is displayed on a panel, as shown in the following figure. Depending on your ISPF settings, the **Command** area can be located at the top or the bottom of the panel.

**Figure 19: Sample command area**

Message Advisor ISPF actions

This section describes the Message Advisor ISPF interface action bar and commands. Most Message Advisor ISPF actions are available from the action bar. All Message Advisor ISPF interface actions are available as commands.

Action bar

Each Message Advisor panel has an action bar across the top of the panel.

The items on the action bar access pull-down menus for more processing options. Table 8 on page 63 lists the items in the action bar.
Table 8: Action bar items

<table>
<thead>
<tr>
<th>Action bar item</th>
<th>Action to perform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>Set display options and colors, change function key settings, set panel ID and function key displays, and restrict which entries are displayed on the QPF Problem list.</td>
</tr>
<tr>
<td>File</td>
<td>Add new objects on panels that list objects and to cancel or exit from any panel</td>
</tr>
<tr>
<td>Help</td>
<td>Access extended help and a Message Advisor message index</td>
</tr>
<tr>
<td>Options</td>
<td>View a list of the actions that you can perform from the Member List panel</td>
</tr>
<tr>
<td>Samples</td>
<td>Select a sample command set template to use to build a command set When the command set is built, it is saved in your request library.</td>
</tr>
<tr>
<td>Session</td>
<td>Control sessions with the Message Advisor Server You can set session control options, view the status of the session, start and stop a session, and wait for active requests to be completed.</td>
</tr>
</tbody>
</table>

Commands

Most Message Advisor ISPF interface actions are available from the action bar. All actions are also available as commands. You can enter a command in two ways:

- Type the command in the **Command** area and press **Enter**.
- Assign the command to a function key.

Throughout this guide, the instructions to type **END**, enter the END command, or press **F3** all mean that the current panel is exited, and a higher level menu is displayed. The function keys are used in this guide as they are distributed with the product. You can change the function key definitions for your user ID from the Display action bar pull-down menu.

To see a list of all actions available from a panel, position the cursor in the **Command** area and press **F4** (PROMPT). The list is also presented when you type an invalid command. The list shows the abbreviated form of the command in uppercase.

Table 9 on page 63 lists and describes the Message Advisor ISPF action commands.

Table 9: Message Advisor ISPF commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABOUT</td>
<td>Displays the Message Advisor ISPF copyright panel</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ADD or NEW</td>
<td>Add a new object on panels that contain a list of objects, such as the Member List or Customization panel. This command is the same as the first choice in the File action bar pull-down menu. On the Member List panel, you can provide a member name as a parameter to indicate the new member name. On the Customize panel, you must specify SERVER or IMS as the parameter to indicate which type of element to add.</td>
</tr>
<tr>
<td>CANCEL</td>
<td>Exits the current panel without processing any changes. If the current panel is one of a series of pages (noted by Page x of y in the upper right area of the panel), the previous page is displayed. If you are currently updating an object (such as a request or the customization options), a confirmation menu is displayed so that you can confirm that changes should be discarded. In any other circumstance, CANCEL causes the next higher level menu panel to be displayed. When you use ISPF EDIT to update a member, the standard ISPF meaning of CANCEL prevails; there is no confirmation, and changes to the member are not saved.</td>
</tr>
<tr>
<td>DEBUG</td>
<td>Toggles DEBUG mode on and off. You can also type DEBUG ON and DEBUG OFF. DEBUG mode is only in effect for the current session and results in the display of additional panels for use in resolving problems.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Causes the DISPLAY panel to be displayed. This panel provides the same choices as the Display action bar pull-down menu, so you can customize the colors and presentation of the Message Advisor ISPF panels. You can also enter the command with a parameter (OPTIONS, COLORS, KEYS, PANELID, or FKA) to select one of Display options without displaying the initial panel.</td>
</tr>
<tr>
<td>EDIT or E</td>
<td>Selects a member for ISPF edit from the requested Member List panel. The member name may be specified as a parameter or, if none is specified, you will be prompted. A new or existing member may be specified.</td>
</tr>
<tr>
<td>END and EXIT</td>
<td>Exits current panel and a higher level menu is displayed. If you are updating an object, a confirmation menu is displayed so that you can confirm that changes should be saved.</td>
</tr>
<tr>
<td>EXECUTE</td>
<td>Executes a request interactively (as modified) but does not save any changes to the request library. This command is available after you select a request for update from the request member list.</td>
</tr>
<tr>
<td>HELP</td>
<td>Accesses the ISPF help service for the current message, field, or panel.</td>
</tr>
<tr>
<td>HELPHELP</td>
<td>Displays a panel that describes how to use the ISPF help service.</td>
</tr>
<tr>
<td>IMS</td>
<td>Adds a new IMSID options element. On the Customization panel, this command is a Fast Path version of the ADD IMS command.</td>
</tr>
<tr>
<td>INDEX or I</td>
<td>Accesses the Message Advisor help index, so you can select and view help information online. From the index, you select a topic by tabbing to the item and pressing Enter or by typing the page number or the first few characters of the item and pressing Enter.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LEVEL</td>
<td>Displays the current maintenance level of the Message Advisor ISPF interface</td>
</tr>
</tbody>
</table>
| MASK      | Causes the MASK Problem List panel to be displayed  
This panel enables you to restrict which entries are displayed on the QPF Problem list.                                                                 |
| MESSAGES or MSGS | Accesses the Message Advisor message index, so you can select and view messages online  
To display a specific message, type the message number after this command.                                                                 |
| OPTIONS   | Only available on panels that contain both an object list and an action bar (for example, the Member List panel)  
If you select an object from the action list by using the /, you can then specify the action with the OPTIONS command.                                    |
| PROMPT    | Displays a list of available values for the input field for selection  
Input fields that support PROMPT are identified with a + following the input field. PROMPT is also available with the cursor in the Command area to display a list of available actions. You can use PROMPT on a message in the scrollable area of the panel to display an explanation about the message. You can also provide a parameter to explicitly specify a field name or message ID, but it is easier to position the cursor on that field or message ID and press F4. |
| QUIT      | Immediately exits from the Message Advisor ISPF application  
A confirmation panel is always displayed.                                                                                                                                                              |
| SAMPLES   | Displays a list of available sample templates on the request Member List panel  
This list is the same as the list displayed from the Samples action bar pull-down menu. You can enter the command with a parameter specifying the name of a member from the sample library (MAQSAMP) to select that sample. You can also type SAMPLES? to specify an alternate samples library. |
| SAVE      | Saves the object immediately as currently modified but without leaving the current panel  
This command is only available when you are updating an object such as a member from the request Member List panel or Customize panel. A save confirmation panel is displayed if the Confirmation option is turned on. |
| SERVER    | Adds a new Message Advisor Server options module.  
In the Customize panel, this command is a Fast Path version of the ADD IMS command.                                                                                                             |
| SESSION   | Displays the Session Control panel  
This panel is the same as the first choice from the Session action bar pull-down menu. Use it to customize the session control options for your sessions with Message Advisor Servers. |
| START     | Starts a session with a Message Advisor Server  
This is the same as the third choice from the Session action bar pull-down menu. There is normally no need to explicitly start a session since a session is started automatically when needed. However, if your site has more than one Message Advisor Server, you can use the START command to start a session with a Message Advisor Server other than your default. You can provide a VTAM APPLID as a parameter; for example, START applid. |
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
</table>
| STATUS     | Displays the Session Status panel with a list of active and inactive sessions  
This is the same as the second choice from the Session action bar pull-down menu.                                                                                                                                                                                                                       |
| STOP       | Stops all sessions with Message Advisor Servers  
This is the same as the fourth choice from the Session action bar pull-down menu. This is normally done automatically when you exit the Message Advisor ISPF interface but may be done explicitly if you want to free VTAM resources or restart a Message Advisor Server without exiting the Message Advisor ISPF interface. |
| SUBMIT     | Submits the request as a batch job (as modified) but without saving any changes to the request library  
This command is available after you select a request for update from the request Member List.                                                                                                                                                                                                     |
| TUTORIAL   | Accesses the Message Advisor ISPF tutorial                                                                                                                                                                                                                                                                                                                   |
| UP/DOWN/   | Scrolls the list on panels  
If the current panel is one of a series of pages (designated by Page x of y in the upper right area of the panel), LEFT and RIGHT switch to the previous and next page, respectively. UP and DOWN also switch to the previous and next page, but only after any list in the panel has been scrolled to the top or bottom. |
| LEFT/RIGHT |                                                                                                                                                                                                                                                                                                                                                             |
| WAIT       | Resumes waiting for a request to finish  
This is the same as the fifth choice from the Session action bar pull-down menu. This is appropriate only if you have interrupted a request and now want to resume waiting on the request.                                                                                                                             |

### Submitting IMS commands

To submit a command directly to IMS, perform the following steps:

1. Type 6 on the Message Advisor Primary Menu, and press Enter.

The Message Advisor and IMS Commands panel (Figure 20 on page 66) is displayed.

**Figure 20: Message Advisor and IMS commands panel**

```plaintext
File  Session  Display  Help
---------------------------------------------------------------
Message Advisor and IMS

Commands
IMSID . . . . ___ + Server name . . _____ + Condition code:
Type the Message Advisor command set or IMS commands. Then press Enter.
```

Line 00000 of 00000  Cols 001 080

************** Top of Data **************
2 Type the IMS ID in the **IMSID** field (or press PROMPT to select from a list of IMSIDs), and type an asterisk (*) in the **Server name** field (or press PROMPT to select from a list of server names).

3 Type each IMS command, and press **Enter**.

Message Advisor uses the area beneath the commands to present command output.

You can print or save this information by using the File action bar pull-down menu (Figure 21 on page 67).

---

**Note**

The SAVE as and PRINT choices are only valid after an IMS command is executed.

---

**Figure 21: Message Advisor and IMS commands panel with File pull-down menu**

You can also submit commands to IMS through the Message Advisor batch facility. The IMSCMD command is described in the *Message Advisor for IMS Reference Manual*. 
Online help

This section discusses the following topics:

- Message help
- Panel-level, field-level, and command-level help
- Online manuals

Message help

All Message Advisor message explanations are available online. You can access these messages in the following ways:

- When an ISPF-style message is displayed in the upper right corner of the panel or in a message pop-up panel, you can use the HELP command or the function key to view the complete message text. You can use the HELP command or function key again to view the message explanation.

- When a Message Advisor message is displayed in a scrollable area of the screen, such as on the Request Status pop-up panel, you can position the cursor on the line containing the message ID and use the PROMPT action or function key to view the message explanation.

- From any Message Advisor panel or pop-up panel, you can display the message index or a specific message.

— If you type the MESSAGE or MSG command in the Command area, the Message Advisor Message Index - Help pop-up panel (Figure 22 on page 68) is displayed.

Figure 22: Message Advisor for IMS Messages Index - Help panel

<table>
<thead>
<tr>
<th>File Options Session Display Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Advisor for IMS Messages Index - Help</td>
</tr>
</tbody>
</table>

This is the Message Advisor message index. Type the complete message id below to view the explanation of a specific message, or type a partial message id to jump to the index page for that message, or press Enter to view the index sequentially.

Message id . . . BMC43111_ (for example, BMC43111)

Within the index, the following actions are available:
- Press Enter or use RIGHT to continue to the next page.
- Use LEFT, BACK, or B to return to the previous page.
- Select or tab to a message and press Enter to view the explanation for that message.
- Type a page number or a full or partial message id on the command line and press Enter.
- Use UP or DOWN to return to this panel.
— If you type `MSG BMCxxxx` (where `xxxx` is the message number) in the **Command** area on any panel, and press **Enter**, the specified message is displayed (Figure 23 on page 69).

**Figure 23: Sample message Help panel**

<table>
<thead>
<tr>
<th>File</th>
<th>Options</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Message BMC43111W - Help</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BMC43111W</strong></td>
<td><strong>nn COMMAND SET(S) FLUSHED DUE TO ERROR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Explanation:** | A command set either abended or failed with a return code of 8 or higher. All command sets queued for execution for this request are flushed. The number of command sets flushed is `nn`.
| **System Action:** | Message Advisor flushes command sets already queued without executing them.
| **User Response:** | Correct the error, and submit the request again.

— If you type a partial message ID, the page on the index where the message ID is listed is displayed.

You can view the entire message index from the beginning by pressing **Enter** without typing a message ID.

### Accessing panel-level, field-level, and command-level help

Message Advisor explains all panels, fields, commands, subcommands, keywords, and parameters. This online information can be accessed in the following ways:

- Access the index from the Index Help panel or directly from a panel.
- Access panel-level and field-level help from a panel.

**To access index information**

1. Display the Message Advisor Help Index by performing one of the following actions:

   - Select the Help action bar pull-down menu (Figure 24 on page 69), type **4** and press **Enter**.

**Figure 24: Help pull-down menu**

<table>
<thead>
<tr>
<th>File</th>
<th>Options</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Command Sets</strong></td>
<td>1. Help for help...</td>
<td>2. Extended help...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
■ Type INDEX or I in the Command area of any panel, including other help panels, and press Enter.

The Message Advisor Index Help panel (Figure 25 on page 70) is displayed.

**Figure 25: Message Advisor Index - Help panel**

To locate an index term, perform one of the following actions:

■ Press Enter to browse the index.

■ Type a term in the Index item field, and press Enter.

The index page for the specified term is displayed (Figure 26 on page 70).

**Figure 26: Message Advisor Index panel—REQUEUE command**

3 Type S in the appropriate selection field, and press Enter.
The description of the selected term is displayed.

**Note**

You can also access the index directly from any panel or pop-up panel. Type `INDEX` or `I` and a few characters of the term you want explained in the **Command** area of any panel or pop-up panel and press **Enter**.

---

**To access panel-level or field-level help from any panel**

1. Perform one of the following actions

   - To access panel-level help, type **HELP** on the Command line (Figure 27 on page 71), and press **Enter**.

   **Figure 27: Help from the command area – any panel**

   ![Help from the command area – any panel](image)

   By using **HELP** on a panel, pop-up panels (Figure 28 on page 71) are displayed that describe the panel and that provide topics to select for further explanation.

   **Figure 28: Help pop-up panel—EQUEUE Processing Options**

   ![Help pop-up panel—EQUEUE Processing Options](image)

---

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To access field-level help, place your cursor on any field, and press F1.

Information about that field is displayed.
Building and executing a command set

This chapter describes how to set up a request library, build a command set, save a command set in your request library, and execute a command set. These tasks can be performed interactively by using the Message Advisor ISPF interface, in a batch process, or through a combination of interactive and batch processes. Assigning conditional steps to a request is also described.

Overview

Before you can execute a Message Advisor for IMS command set, you must build a request for the function you want to perform. A request is a unit of work that contains one or more command sets. A command set is a task within a request consisting of a command and one or more subcommands, keywords, and parameters followed by the END command.

You may want to build several command sets and execute them as one Message Advisor request. By using multiple command sets within a single request, you can accomplish multiple tasks with one request. For example, you can unload, dequeue, and requeue all messages as a single task with one request containing multiple command sets. If you are building a request by using a data set editing facility, you can also assign conditional steps to one or more command sets within the request. Conditional steps are used to specify that a command set will not be executed unless a previous command set is successfully executed or that it will only be executed if a previous command set is not successful.

A Message Advisor command set or request can be built from by typing the desired Message Advisor commands, subcommands, keywords, and parameters; or it can be built by using a sample command set. A sample command set is a template that can be copied and then modified to meet your needs, thus minimizing errors and saving the effort of typing in the required data. One or more sample command sets are provided for most Message Advisor commands.

For demonstration purposes, the following two approaches to building and executing a command set are described in this chapter:
Interactive method—build and execute a command set by using that Message Advisor ISPF interface

Batch method—build a command set by using a data set editing facility, such as ISPF, then submit it through a batch job

How a command set is built does not determine how it can be executed. You can build a command set by using the Message Advisor ISPF interface panels and then submit it through a batch job. Conversely, you can build a command set by using ISPF or a similar data set editing facility, then execute it through the Message Advisor ISPF interface panels in foreground or background.

For an explanation about how to build and execute a command set by using the Message Advisor ISPF interface, see “Interactive method” on page 74. For an explanation about how to build a command set by using ISPF or a similar data set editing facility, and submit it through a TSO batch job, see “Batch method” on page 84.

**Interactive method**

The Message Advisor ISPF interface provides structured data entry panels and pop-up panels that let you build certain command sets by typing the required values without remembering keywords or referring to the *Message Advisor for IMS Reference Manual*. The Message Advisor base commands, DEQUEUE, DISPLAY, REQUEUE, and UNLOAD, can be built in this manner.

This section describes how to build and execute these commands by using the Message Advisor ISPF interface panels.

---

**Note**

Only command sets for Message Advisor DEQUEUE, DISPLAY, REQUEUE, and UNLOAD commands can be built by using the structured data entry panels of the Message Advisor ISPF interface.

Other Message Advisor commands and all Message Advisor QPF commands must be built by using ISPF or a similar data set editing facility. Because the Message Advisor interface contains a direct interface to ISPF edit, these commands can be built without exiting the Message Advisor interface.

When a Message Advisor command set is built, it can be executed by submitting a batch job or it can be executed by using the Message Advisor ISPF interface panels. Through the interface panels, you can execute the command set in foreground or background.
If you use a sample command set with the interface panels, the sample command set will populate the interface panel fields, which you can then accept or modify to meet your needs.

To build and execute a DEQUEUE, DISPLAY, REQUEUE, or UNLOAD command set interactively, perform the following tasks:

- Allocate a request library.
  You may want to allocate a separate library for your command set, such as `bmcnode.MAQ.REQUEST`.

- Build a command set from a sample.
  Although a command set can be built by typing the desired commands, subcommands, keywords, and parameters, this chapter emphasizes building command sets by using the sample command sets provided by BMC Software. By using these samples, you will minimize errors and reduce the time that is required to build a command set. One or more sample command sets are provided for most Message Advisor commands.

  **Note**
  All sample command sets are shown with the option of including default values. For information about how to create command sets without the defaults being shown, see “Session Control” on page 45.

- Execute a command set.

## Allocating a request library

Use the following procedure to allocate a library containing your Message Advisor requests.

1. From the Message Advisor banner panel, press **Enter**.

The Message Advisor Primary Menu (Figure 29 on page 75) is displayed. Use this panel to enter the data set information, space information, and data control block (DCB) information for the Message Advisor request library.

**Figure 29: Message Advisor Primary Menu**

<table>
<thead>
<tr>
<th>File</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Message Advisor - Primary Menu

Select one of the following. Then press Enter.

- 1. Build and execute Message Advisor requests
- 2. Display and/or dequeue specific IMS messages
- 3. Display statistics for the IMS messages queues
2 Type 1 in the choice entry field.

3 Type a library name in the Request library field, and press Enter.

   **Note**

If the library exists, one of the following panels is displayed:

- If the specified library exists but is empty, the Sample List pop-up panel (Figure 31 on page 77) is displayed.
- If the library exists and contains requests, a member list is displayed (see a sample Member List panel in “Building a command set” on page 77).

The Request Library Create pop-up panel (Figure 30 on page 76) is displayed.

**Figure 30: Request Library Create panel**

```
Data set information
Data set name . . . bmcnode.MAO.REQUEST____________________________
Volume serial . . . ______ (optional, for new data set only)
Generic unit . . . ________ (optional, for new data set only)

Space information (for new data set only)
Units . . . . . . . . . TRKS (BLKS, TRKS, or CYLS)
Primary quantity . . 10__
Secondary quantity . 5___
Directory blocks . . 20_

DCB information (for new data set only)
Record format . . . FB_ (F,FB,FA,FMA,FMB,V,VA,VM,VBA,VBM)
Logical record length 80__ (80-255 recommended)
Block size . . . . 6160
```

4 To define the library’s attributes, accept or change the defaults shown on this pop-up panel and press Enter.
The Sample List pop-up panel (Figure 31 on page 77) is displayed.

**Figure 31: Sample List panel**

From the Sample List pop-up panel, you can select a sample command set from the templates, save the sample in your library, and use it as is or modify it. You can also select **None** and create a new request without using a template. For more information, see "Building a command set" on page 77.

**Building a command set**

Use the following procedure to build a command set. To display the list of command set samples, use one of the following methods:

- Selecting a sample
- Creating a command set and storing it in your request library

The samples are templates that allow you to copy the sample without removing it from MAQSAMP.

**To build a command set**

1. Display the list of samples by performing the following steps:
   a. Select the Samples pull-down menu (Figure 32 on page 77) from the action bar.

   **Figure 32: Samples action bar pull-down menu**
Interactive method

2. Set alternate sample library...

S=Update member   Q=Execute interactively  D=Delete  B=Browse
A=Add new member  X=Execute in batch       R=Rename  E=Edit
More:   +

Act Name     Prompt          Size    Created           Changed            ID
_ A        ________            4   2001/07/30   2001/07/30 14:16:43    USERID2

**END**

b Type 1 to select List samples, and press Enter.

The Sample List pop-up panel is displayed (as shown in “Allocating a request library” on page 75).

2 Determine whether one of the sample command sets performs the functions that you require by performing one of the following actions:

- If a sample command meets your needs, go to Step 3 on page 78.
- If none of the sample commands meets your needs, go to Step 4 on page 78.

3 Type a slash (/) next to the sample command set that meets your needs, and press Enter.

The Command Sets panel is displayed. For example, Figure 33 on page 78 shows a sample command set for requeueing all messages after a cold start.

**Figure 33: Sample Command Sets panel**

4 Build your own command set without using a template by performing the following steps:

a Type a slash (/) next to (None - create a new request), and press Enter.
The Insert Command Set pop-up panel (Figure 34 on page 79) is displayed.

**Figure 34: Insert Command Set panel**

<table>
<thead>
<tr>
<th>Insert Command Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following Message Advisor command sets. Then press Enter.</td>
</tr>
<tr>
<td>1. REQUEUE</td>
</tr>
<tr>
<td>2. DEQUEUE</td>
</tr>
<tr>
<td>3. UNLOAD</td>
</tr>
<tr>
<td>4. DISPLAY</td>
</tr>
</tbody>
</table>

b Type the number of the command set that you want to build, and press Enter.

A series of pop-up panels for the command that you selected are displayed. Use these pop-up panels to rename the command set, and accept or change the title describing it.

For more information about using Message Advisor ISPF panels to build command sets, see the following chapters:

- For information about building DISPLAY commands, see “Displaying IMS message queues” on page 95.
- For information about building DEQUEUE commands, see “Dequeueing messages” on page 123.
- For information about building UNLOAD commands, see “Unloading messages” on page 145.
- For more information about building REQUEUE commands, see “Requeueing messages” on page 161.

5 Name the command set, and accept or change the command description by performing the following steps:

a In the Member field, type the name for the command set.

b Accept the description in the title field by pressing Enter, or type your description, and press Enter.

The Confirm Save pop-up panel (Figure 35 on page 79) is displayed.

**Figure 35: Confirm Save panel**

<table>
<thead>
<tr>
<th>File Options Samples Session Display Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member List - bmcnode.MAQ.REQUEST</td>
</tr>
<tr>
<td>T</td>
</tr>
<tr>
<td>Select one of the following. Then press Enter.</td>
</tr>
</tbody>
</table>
6 Confirm that you want to create and save a new member by performing the following steps:

a If you did not type the name on the previous pop-up panel, type a member name in the **Create new member** field.

b If the number is not displayed, type 2 in the choice entry field.

If you named the command set on the command set pop-up panel, 2 is displayed in the choice entry field and the member name is carried forward to this pop-up panel.

c Press **Enter**.

The Member List panel (**Figure 36 on page 80**) is displayed.

**Figure 36: Sample Member List panel**

7 Browse or edit the command by performing one of the following steps:

- Browse the command set by typing **B** in the **Act** field, and pressing **Enter**.

- Edit the command set by typing **E** in the **Act** field, and pressing **Enter**.
The new command set is displayed. Figure 37 on page 81 shows the command set that was built with the REQUEUEING ALL MESSAGES: COLD START template.

**Figure 37: Sample Command Set that was created from sample template**

```
BROWSE--- bmcnode.MAO.REQBUE(REQUEUE1) - 01.00 -------------- COLUMNS 001 072
****** *************************** TOP OF DATA ***************************
000010 *TITLE=REQUEUING ALL MESSAGES: COLD START
000020 REQUEUE ; AUTOMATICALLY (Message Advisor SELECTS THE CHECKPOINT)
000030 IMSID=?,MODE=REQUEUE,TYOE=COLD,CONVERSATIONS=ALL,
000040 BMP=YES,MSGTYPE=ALL,SYSMSG=YES,TIMESTAMP=ORIGINAL,
000050 SCRAP=YES,OLDS=NO,COMPRESS=YES,INCORE=YES,PRINT=ALL,
000060 RATE=0
000070 END
```

**Note**
All sample command sets in this chapter are shown with the option of including the default values. For information about how to create command sets without the defaults being shown, see “Session Control” on page 45.

8 Review the command set for accuracy and edit the command as necessary.

9 Press **END**.

The Member List panel (Figure 36 on page 80) is displayed.

You can add conditional steps to specify that a command set within a request will not be executed unless a previous command set is successfully executed, or that it will be executed only if a previous command set is not successful. For more information, see “Conditional steps” on page 90.

**Executing a command set**

Use this procedure to execute the command set from the Member List panel.
Note

You can also execute a request interactively, submit a request in batch, or enter other Message Advisor ISPF action command from the command line by using the standard ISPF member list SELECT command. For example:

- To execute the command set in member REQUEUE1, type S REQUEUE1 Q on the command line.
- To build a new member by using the structured data entry panels, type ADD REQUEUE1.
- To create a new member by using ISPF edit, type E REQUEUE1.

To execute a command set

1. From the Member List panel, execute the command set by performing one of the following actions:

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Execute the request interactively</td>
<td>Type Q in the Act field, and press Enter.</td>
</tr>
<tr>
<td>Submit the request as a batch job</td>
<td>Type X in the Act field, and press Enter.</td>
</tr>
</tbody>
</table>

The Confirm Execute panel (Figure 38 on page 82) is displayed.

Figure 38: Confirm Execute panel

2. Type 1 in the choice entry field, and press Enter.
Message Advisor prompts (Figure 39 on page 83) you for any keywords that contain a ?.

**Note**
You can specify your command set keywords with a ? in place of a value (see “Building a command set” on page 77). When the command is executed, Message Advisor prompts you for the information.

In this example, the Execution Time Prompt pop-up panel that is displayed because the IMSID field contains a ? instead of a value.

**Figure 39: Sample Execution Time Prompts panel**

<table>
<thead>
<tr>
<th>Execution Time Prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type the following keyword values required to complete the request. Then press Enter.</td>
</tr>
<tr>
<td>Command: REQUEUE AUTOMATICALLY (Message Advisor SELECTS THE CHECKPOINT)</td>
</tr>
<tr>
<td>IMSID . . . . . . . . ____</td>
</tr>
</tbody>
</table>

3 Type the IMSID for which you want to process the request, and press Enter.

**Where to go from here**

You have completed the generic steps required to set up a request library, build a command set, save the command set in your request library, and execute the request from the Message Advisor ISPF interface panels.

Table 10 on page 83 lists the chapters that describe how to build specific Message Advisor base command sets interactively by using the Message Advisor ISPF interface.

**Table 10: Message Advisor command chapters**

<table>
<thead>
<tr>
<th>Command set</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISPLAY</td>
<td>“Displaying IMS message queues” on page 95</td>
</tr>
<tr>
<td>DEQUEUE</td>
<td>“Dequeuing messages” on page 123</td>
</tr>
<tr>
<td>UNLOAD</td>
<td>“Unloading messages” on page 145</td>
</tr>
<tr>
<td>REQUEUE</td>
<td>“Requeueing messages” on page 161</td>
</tr>
</tbody>
</table>

For command syntax and descriptions, see the Message Advisor for IMS Reference Manual.
Batch method

This section describes how to build Message Advisor commands in an ISPF environment and how to submit them in batch.

Note

The Message Advisor base commands DEQUEUE, DISPLAY, REQUEUE, and UNLOAD can be built by using the structured data entry panels of the Message Advisor ISPF interface, or they can be built by using a data set editing facility such as ISPF.

Other Message Advisor commands and all Message Advisor QPF commands (QPF_ACTION, QPF_LIST, and QPF_OPTIONS) must be built by using ISPF or a similar data set editing facility. Because the Message Advisor interface contains a direct interface to ISPF edit, these commands can be built without exiting the Message Advisor interface.

You may want to build several command sets and execute them as one Message Advisor request. By using multiple command sets within a single request, you can accomplish multiple tasks with one request. For example, you can unload, dequeue, and requeue all messages as a single task with one request containing multiple command sets.

If you are building a request by using a data set editing facility, you can also assign conditional steps to one or more command sets within the request. Conditional steps are used to specify that a command set will not be executed unless a previous command set is executed successfully or that it will be executed only if a previous command set is unsuccessful.

When a command set or a Message Advisor request is built, it can be submitted through a TSO batch job or it can be executed through the Message Advisor ISPF interface panels. Through the interface panels, you can execute the command set or a Message Advisor request in foreground or background.

To build and execute a command set or Message Advisor request by using the batch method, perform the following tasks:

- Allocate a request library.
  
  You may want to allocate a separate library for your command set, such as *bmcnode .MAQ.REQUEST*.

- Build a command set or a Message Advisor request from a sample.
  
  Although a command set or a Message Advisor request can be built by typing the desired commands, subcommands, keywords, and parameters, this chapter emphasizes by using the sample command sets provided by BMC Software. By using these samples, you will minimize errors and reduce the time that is required to build a command set. One or more sample command sets are provided for most Message Advisor commands.
Assign conditional steps to a request.

This is an optional task that lets you specify that a command set within a request will not be executed unless a previous command set is executed successfully or that it will be executed only if a previous command set is unsuccessful.

Execute a command set or a Message Advisor request.

---

**Note**

A batch request can consist of multiple command sets. If a batch request contains multiple command sets, the command sets are processed as they are read. The Message Advisor Server terminates when it reaches the end of the SYSIN data set.

---

### Allocate a request library

This section describes how to allocate a library containing your Message Advisor requests if you are working in ISPF or a similar data set editing facility.

A request library is a normal PDS data set with an LRECL of 80. You can allocate a request library in batch or by using ISPF option 3.2.

When allocating your request library, ensure that you allocate sufficient space and directory control blocks to hold the command sets that you want to create.

You may want to use a naming convention such as `bmcnode.MAQ.REQUEST` for your request library.

### Building a command set or request

Use the following procedure to display the list of command set samples, select a sample or create a command set from scratch, and store the command set in your request library if you are working in an ISPF environment. The samples are templates that let you copy the sample without removing it from MAQSAMP.

1. Review the sample command sets that are located in MAQSAMP.

   **Table 11 on page 86** describes the sample command sets for Message Advisor that are available in MAQSAMP.
### Table 11: Sample Message Advisor command sets

<table>
<thead>
<tr>
<th>Member</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QMR@DEQ1</td>
<td>Dequeueing all messages—one destination</td>
</tr>
<tr>
<td>QMR@DEQ2</td>
<td>Dequeueing selected messages—multiple destinations</td>
</tr>
<tr>
<td>QMR@DEQ3</td>
<td>Dequeueing a specific message</td>
</tr>
<tr>
<td>QMR@DSP1</td>
<td>Displaying message queue statistics</td>
</tr>
<tr>
<td>QMR@DSP2</td>
<td>Displaying destination queue information</td>
</tr>
<tr>
<td>QMR@DSP3</td>
<td>Displaying detailed destination queue information</td>
</tr>
<tr>
<td>QMR@DSP4</td>
<td>Displaying record information</td>
</tr>
<tr>
<td>QMR@REQ1</td>
<td>Requeueing all messages—COLD start</td>
</tr>
<tr>
<td>QMR@REQ2</td>
<td>Requeueing all transaction messages—COLD start</td>
</tr>
<tr>
<td>QMR@REQ3</td>
<td>Requeueing messages to an LTERM—COLD start</td>
</tr>
<tr>
<td>QMR@REQ4</td>
<td>Requeueing messages—/ERE failure</td>
</tr>
<tr>
<td>QMR@UNL1</td>
<td>Unloading all messages—one destination</td>
</tr>
<tr>
<td>QMR@UNL2</td>
<td>Unloading messages—multiple destinations</td>
</tr>
<tr>
<td>QMC@DEQ1</td>
<td>Dequeueing all messages—one destination</td>
</tr>
<tr>
<td>QMC@DEQ2</td>
<td>Dequeueing selected messages—multiple destinations</td>
</tr>
<tr>
<td>QMC@DEQ3</td>
<td>Dequeueing a specific message</td>
</tr>
<tr>
<td>QMC@DSP1</td>
<td>Displaying message queue statistics</td>
</tr>
<tr>
<td>QMC@DSP2</td>
<td>Displaying destination queue information</td>
</tr>
<tr>
<td>QMC@DSP3</td>
<td>Displaying detailed destination queue information</td>
</tr>
<tr>
<td>QMC@DSP4</td>
<td>Displaying record information</td>
</tr>
<tr>
<td>QMC@REQ1</td>
<td>Requeueing messages—/ERE failure</td>
</tr>
<tr>
<td>QMC@REQ2</td>
<td>Requeueing messages—REPROCESS</td>
</tr>
<tr>
<td>QMC@REQ3</td>
<td>Requeueing messages from a file</td>
</tr>
<tr>
<td>QMC@UNL1</td>
<td>Unloading all messages—one destination</td>
</tr>
<tr>
<td>QMC@UNL2</td>
<td>Unloading messages—multiple destinations</td>
</tr>
</tbody>
</table>

Table 12 on page 87 describes the sample command sets for Message Advisor QPF that are available in MAQSAMP.
## Table 12: Sample Message Advisor QPF command sets

<table>
<thead>
<tr>
<th>Member</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPF@ACT1</td>
<td>Unloading, dequeueing, and stopping a destination</td>
</tr>
<tr>
<td>QPF@LST</td>
<td>Displaying all QPF problem entries</td>
</tr>
<tr>
<td>QPF@LST1</td>
<td>Displaying the first 20 QPF problem entries</td>
</tr>
<tr>
<td>QPF@LST2</td>
<td>Displaying QPF options</td>
</tr>
<tr>
<td>QPF@OPT1</td>
<td>Activating QPF—submitting this command set activates QPF</td>
</tr>
<tr>
<td>QPF@OPT2</td>
<td>Scenario command set—defines the QPF options to address the queue overflow problems described in the sample scenario</td>
</tr>
<tr>
<td>QPF@OPT3</td>
<td>QPF options template command set—sample command set that can be used as a template when creating your own QPF_OPTIONS command set</td>
</tr>
<tr>
<td>QPF@OPT4</td>
<td>QPF options template command set for local shared queues—sample command set that can be used as a template when creating your own QPF_OPTIONS command set for local shared queues</td>
</tr>
<tr>
<td>QPF@OPT5</td>
<td>Sample ENFORCE statements that can be used as a template when creating your own ENFORCE statements</td>
</tr>
</tbody>
</table>

2 Determine whether a sample command set or group of sample command sets performs the functions that you require.

<table>
<thead>
<tr>
<th>Result</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the sample command meets your needs</td>
<td>go to Step 3 on page 87</td>
</tr>
<tr>
<td>If none of the sample commands meet your needs</td>
<td>go to Step 5 on page 88</td>
</tr>
</tbody>
</table>

3 Copy the appropriate sample members into a member in your request library.

4 Review and modify the command sets as appropriate.

You can add conditional steps to specify that a command set within a request will not be executed unless a previous command set is executed successfully or that it will be executed only if a previous command set is not successful. For more information, see “Conditional steps” on page 90.

**Note**

As provided, the sample command sets are designed to be executed interactively. They contain field-level prompting (e.g., IMSID ?). When processing Message Advisor command sets in batch, you will not be prompted to replace the ?. Therefore, you must modify any field that contains a ?.
This step completes the process of building a command set or Message Advisor request by using a sample command set in ISPF or a similar data set editing facility.

5 Build the command set or Message Advisor request by typing the desired commands, subcommands, keywords, and parameters, using ISPF EDIT.

You can add conditional steps to specify that a command set within a request will not be executed unless a previous command set is executed successfully or that it will be executed only if a previous command set is not successful. For more information, see “Conditional steps” on page 90.

If you want to review command syntax diagrams, sample command sets, or descriptions of the subcommands, keywords, and parameters associated with each Message Advisor command, see the Message Advisor for IMS Reference Manual. Command set syntax requirements are also provided in the Message Advisor for IMS Reference Manual.

This step completes the process of building a command set or Message Advisor request in ISPF or a similar data set editing facility.

## Executing a command set or request

Use the following procedure to submit a Message Advisor command set in batch.

A Message Advisor command set or Message Advisor request can be submitted in batch by specifying it as SYSIN to the Message Advisor Batch Server JCL.

Batch jobs run as a server just like the online server. It is advisable to customize a separate server definition for batch use to avoid a conflict with the Message Advisor Online Server. If you use the same server definition for both online and batch, it will not have an adverse impact on the execution or running of Message Advisor command sets.

**To execute a command set or request**

1 Select MAQCNTL member QMR#BJCL.

The sample JCL provided in this member (Figure 40 on page 88) is displayed.

Figure 40: Sample JCL for Message Advisor batch processing

```plaintext
/ //QMR#BJCL JOB (ACCT),’BATCH MESSAGE ADVISOR SERVER’  <== MODIFY
/*
/* 1. THE REGION SPECIFIES 64MEG. IF YOU DO NOT HAVE THIS MUCH STORAGE, IT CAN BE DECREASED. (REQUEUE MESSAGES ARE BUFFERED
```
2 Modify the sample Batch Server JCL.

a Modify the Server name to ensure that `PARM='@@@@@@@@,BATCH'` provides the name of the default Message Advisor Server and specifies that this command set will be executed in batch. Any value may be specified in place of `@@@@@@@@`, whether it was previously defined or not. If the value specified is a defined server name, it will be used. If the value is not defined, then the default name `@@@@@@@@` will be used.

b Ensure that `BATCH` is the second parameter on the EXECUTE card.

This parameter causes the server to look for the SYSIN DD, process the commands in the SYSIN data set, and terminate when command processing is complete.
c  Modify the STEPLIB DD statement to ensure that the APF-authorized library contains the Message Advisor modules.

If the library is not authorized, you will receive a system S047 abend.

d  Update the QMROPTS DD statement to ensure that a load library that contains the QMRUOPT0 options module.

You can use the same library as the one specified in the STEPLIB DD or a different load library.

3  Submit the job, and review the output.

Where to go from here

You have completed the generic steps required to set up a request library, build a command set, and save the command set in your request library by using ISPF or a similar data set editing facility. You have also completed the steps required to submit a batch request.

The Message Advisor for IMS Reference Manual provides the command syntax, command set examples, and command description for each Message Advisor command.

Conditional steps

You can assign conditional steps to one or more command sets within a Message Advisor request. Conditional steps are used to specify that a command set will not be executed unless a previous command set is executed successfully or that it will only be executed if a previous command set is unsuccessful.

When conditional steps are assigned to a Message Advisor request, a COND pseudo command step is inserted between each command set or a series of command sets within the request. A COND step is used to establish a label (also called a stepname) for forward branching or for reference purposes in comparing the results of a Message Advisor command set.

COND keywords

The COND pseudo step supports the following keywords: LABEL, IFCOND, BRANCH, MAXRC, and END. These keywords serve the following purposes:
The LABEL keyword defines a command set that can be branched to from a preceding step. It is also used to associate a return code (from the next Message Advisor non-pseudo step) when that label name used is referenced by an IFCOND or a MAXRC keyword in following COND steps.

The IFCOND keyword checks the results of a prior command set or checks the maximum return code and sets a true or false result.

On a true result (or if IFCOND is not specified), the BRANCH keyword is executed to skip one or more command sets.

The MAXRC keyword modifies the highest return code value for future references to MAXRC or to set the Message Advisor server batch job step return code.

If a Message Advisor request does not contain COND steps, any command request that ends with a return code of eight or higher causes all remaining command sets to be bypassed with a BMC43111W message. If COND steps are inserted into a Message Advisor request, command sets are bypassed only as a result of successful BRANCH keywords in COND pseudo steps. The ending step return code for a Message Advisor batch server is determined by the last value of a MAXRC keyword executed or by a non-pseudo step return code that exceeds the current high value.

This is an optional task. QMRCOND pseudo command sets can be inserted into a Q:MG request to conditionally bypass one or more command sets during execution. The Q:MG batch job step return code can also be manipulated.

The QMRCOND pseudo step supports the following keywords: LABEL, IFCOND, MAXRC, BRANCH, and END. These keywords serve the following purposes:

- LABEL defines a command set that can be branched to from a preceding step. It is also used to associate a return code (from the next Q:MG non-pseudo step) when that label name is used referenced by an IFCOND or a MAXRC keyword in following QMRCOND steps.

- IFCOND is used to check the results of a prior command set or check the maximum return code and set a true or false result. On a true result (or if IFCOND is not specified), the BRANCH keyword would be executed to skip one or more command sets. Likewise, the MAXRC keyword would be used to modify the highest return code value for future references to MAXRC or to set the Q:MG server batch job step return code.

Without any QMRCOND steps in a Q:MG request, any command request that ends with a return code of 8 or higher causes all remaining command sets to be bypassed with a BMC43111W message. However, if any QMRCOND steps are inserted into a Q:MG request, command sets are bypassed only as a result of successful BRANCH keywords in QMRCOND pseudo steps. The ending step return code for a Q:MG batch server will be determined by the last value of a MAXRC keyword executed or by a non-pseudo step return code that exceeds the current high value.
Assigning conditional steps to a request

Use the following procedure to assign conditional steps to a Message Advisor request (a group of Message Advisor commands):

1. Display a Message Advisor request in ISPF EDIT by performing one of the following actions:
   - Retrieve a previously created Message Advisor request from your request library.
   - Create a Message Advisor request by using ISPF EDIT.

For a syntax diagram, sample command sets, and descriptions of the subcommands, keywords, and parameters associated with each Message Advisor command, see the *Message Advisor for IMS Reference Manual*.

2. Add conditional steps to the Message Advisor request.

Insert a COND command step between the commands for which you want to specify a condition by using the following keywords:

- **LABEL**—This keyword assigns a stepname for forward branching or for referring back to the return code value of a real Message Advisor step that follows the COND pseudo step. The return code for a step that is bypassed is given an internal value of 1; however, MAXRC is not changed from 0 to 1 when a step is bypassed.

- **IFCOND**—This keyword uses a quoted string in the format `'field1.oper.field2'`, where
  - `field1` and `field2` = a prior stepname, MAXRC or BYPASSED, or a numeric value
  - `.oper.` = one of the following logical operators:

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.EQ.</td>
<td>equal</td>
</tr>
<tr>
<td>.NE.</td>
<td>not equal</td>
</tr>
</tbody>
</table>

For a syntax diagram, a sample command set, and descriptions of the keywords, and parameters associated with the COND command step, see the *Message Advisor for IMS Reference Manual*. 

---

Note
For a syntax diagram, a sample command set, and descriptions of the keywords, and parameters associated with the COND command step, see the *Message Advisor for IMS Reference Manual*. 

92 *Message Advisor for IMS User Guide*
### Operator Description

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.GT.</td>
<td>greater than</td>
</tr>
<tr>
<td>.GE.</td>
<td>greater than or equal</td>
</tr>
<tr>
<td>.LT.</td>
<td>less than</td>
</tr>
<tr>
<td>.LE.</td>
<td>less than or equal</td>
</tr>
</tbody>
</table>

When an IFCOND returns a logical true condition, BRANCH and MAXRC keywords are processed. A false condition causes those parameters to be ignored. In the absence of the IFCOND parameter, BRANCH and MAXRC are also processed.

- **MAXRC**—This keyword specifies the maximum return code for all Message Advisor command sets executed so far. MAXRC can be referenced in the IFCOND parameter, and it can be explicitly set to another value by using the MAXRC keyword. A numeric value or a preceding stepname may be assigned to MAXRC.

  When a Message Advisor server executes in batch mode, the last value of MAXRC determines the step termination code. In an ISPF invocation of Message Advisor command steps, the online interface reports the highest return code found; however, the logic flow of the steps is the same as if the request were executed in batch mode.

  The MAXRC keyword is ignored when an IFCOND in the same COND step evaluates to a false result.

- **BRANCH**—This keyword must specify the value that is assigned to the LABEL keyword of a step which follows the current step (a backward branch results in a syntax error message). The special value FLUSH causes all remaining steps to be ignored. The special value SKIPNEXT causes the next real Message Advisor command step to be bypassed.

  The BRANCH keyword is ignored when an IFCOND in the same COND step evaluates to a false result.

3 Save the revised Message Advisor request in your request library.
Displaying IMS message queues

This chapter provides information about how to use the Message Advisor DISPLAY command. The features of the command, usage tips, and instructions for displaying reports and statistics interactively or by building a command set are presented in this chapter.

Overview

View and create the following types of reports by using the DISPLAY command:

- Message queue statistics
- Number of messages in the message queues
- Number of messages queued to a destination
- Hexadecimal and formatted display of IMS message(s) contents
- Number of messages queued to destinations meeting your selection criteria
- Number of messages in temporary queues (i.e., messages which have been created, but not committed, by the dependent regions)

You can use this information to decide whether you want to dequeue, or unload/dequeue, any messages. By controlling the contents of the message queues, you can prevent IMS outages that would occur if the queues were to fill.

For more information about the DISPLAY command, see the Message Advisor for IMS Reference Manual.

Note

All sample command sets in this chapter are shown with the option of including the default values. For information about how to create command sets without the defaults being shown, see “Session Control” on page 45.
Usage tips

This section describes usage tips when using the DISPLAY command to perform the following tasks:

- Specifying message selection criteria
- Displaying temporary queue information

Specify message selection criteria

Message Advisor is used to display the contents of your IMS message queues.

By using the Message Advisor Destination Selection panel ("Displaying destination queue information: interactively" on page 106), you can specify the destination type, destination, and format of the messages you want to display.

When specifying display selection criteria, BMC Software recommends that you narrow your display selection as much as possible to minimize the impact of the display request on performance. If you issue a display request against message queues that are very large and/or that are heavily utilized without limiting the selection criteria, system performance may be degraded while Message Advisor gathers the requested information.

Display temporary queue information

Messages that have been created but not committed by an IMS syncpoint are associated with the BMP region or the transaction which created them. These messages are considered to be on a temporary queue, even though they are physically part of the IMS message queues.

Message queue usage can be displayed by using IMS commands, but the actual message count cannot be displayed. Message Advisor lets you display the message count while the messages are being created and before they are committed. Once messages are committed, they will be queued to a destination and no longer associated with the region that created them.

Normally, temporary messages are committed very quickly. A region with an excessive number of temporary messages indicates a problem, possibly a BMP that is not taking checkpoints or an application that is in a loop. The information gathered from displaying temporary messages can be used to determine what action should be taken to solve problems associated with messages on the temporary queue.
Message Advisor lets you display temporary queue information by using the Message Advisor ISPF interface panels or by issuing the following Message Advisor commands in batch:

- **DISPLAY TYPE=STATISTICS**
  This command will display temporary queue usage when reporting the ten longest destination queues. In addition, the total number of messages in temporary queues is displayed.

- **DISPLAY TYPE=DEST_QUEUES**
  This command will, by default, display data on temporary queues. The REGION keyword may be used to restrict the display to data for a specific dependent region or set of regions.

  **Note**
  The **DISPLAY TYPE=DEST_QUEUES** command, used without limiting parameters, is particularly resource-intensive because the IMS message queues must be scanned in their entirety to satisfy the request. To limit the effects on your IMS system, BMC Software recommends adding the **QCNT** parameter. Use of the **DISPLAY TYPE=DEST_QUEUES** command may be restricted by external security (for example, RACF, ACF2) or by internal Message Advisor security (module QMRXSMA0). For more information, see the installation guide.

- **DISPLAY TYPE=DESTINATION**
  This command will, by default, display data on temporary queues. The REGION keyword may be included on the SELECT or REJECT subcommand. If REGION is specified on the SELECT subcommand, only data for the specific dependent region or set of regions is reported. If this keyword is specified on the REJECT subcommand, the specific dependent region or set of regions is excluded from reporting.

  **Note**
  Although Message Advisor is used to display temporary queue information, you cannot dequeue, requeue, or unload temporary queues.

---

**Instructions for displaying message information**

This section includes information about preliminary operational tasks that you must perform before displaying message information and instructions on performing various types of display tasks:
Before displaying message information

Before displaying message information, perform the following tasks:

- Bring up the Message Advisor Server by submitting the MAQCNTL member QMR#STRT. If you have placed this member in your PROCLIB, issue an MVS START command.

- Ensure that you have started the VTAM APPLIDs for the Message Advisor Server and user sessions by issuing a `V NET, ID=xxxxxxxx,ACT` command, where `xxxxxxxx` represents a member name of SYS1.VTAMLST or its equivalent. This member contains the definition of the VTAM APPLIDs for the Message Advisor Server and user sessions.

- If you access the Message Advisor Server frequently, let it run continuously; if you do not, bring it up only when needed.

Displaying message queue statistics: interactively

This example shows how to display message queue statistics interactively without building a command set. The example only shows how to display and browse the information at the terminal; it does not show you how to print reports.

For information about building a command set for this task and about printing reports, see “Displaying message queue statistics: command set” on page 100.

The Message Advisor ISPF interface provides online help for all panels, pop-up panel panels, and fields. For information about accessing the online help system, see “Online help” on page 68.
From the Primary Menu ("Allocating a request library" on page 75), type 3 in the choice entry field.

Type the IMSID for which you want to display message queue statistics in the IMSID field.

Type an asterisk (*) in the Server name field, and press Enter.

The Message Queue Statistics pop-up panel (Figure 41 on page 99) displays statistics on the top 10 destinations for the specified IMSID.

Figure 41: Message Queue Statistics panel—top 10 destinations

```
Message Queue Statistics for IMSID R61P
Press Enter to update values. Line 001 of 056
More: +

Queue utilization: Short 1% Long 8%
Top Ten Destination Message Queues
CAT ................................................. 2,001
DFASYNCL ....................................... 737
MASTER ......................................... 60
DFSTCFI ......................................... 17
MSC12 ......................................... 15
DFSCMD ......................................... 15
PART ........................................... 11
DSPI NY ........................................ 5
NAME_300_TPNAME_OF_R61PL62 .............. 4
NAME_250_TPNAME_OF_R61PL62 .............. 4

Total messages for CNTs .................. 2,114
Command ===> ____________________________ Scroll ===> CSR_
```

Review this pop-up panel, and page down.

Screen 2 of message queue statistics panel (Figure 42 on page 99) is displayed.

Figure 42: Message Queue Statistics panel—top 10 destinations (continued)

```
Command ===> ________________________________________________________________
F1=Help  F2=Keys  F3=Exit  F4=Prompt  F9=Retrieve  F11=Status  F12=Cancel
```
Displaying message queue statistics: command set

This example shows how to build and execute a command set that you can use to create and view a report about statistics on message queues.

For information about building the command set request library and creating command set members, see “Building and executing a command set” on page 73.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

1. From the Message Advisor Primary Menu, perform the following steps:

   a. Type 1 in the choice entry field.

   b. Type a valid library name in the Request library field, and press Enter.

      The Member List panel is displayed.

2. Add a new member by typing A in the Command area of the Member List panel.

   Use the Member List panel to add a new member or to select an existing member for update. After the command set is built and saved, you can execute the command set from this panel.
3 Press **Enter**.

The Insert Command Set pop-up panel is displayed. Use this pop-up panel to select one of the Message Advisor sample command sets.

4 Select the DISPLAY command by typing **4** in the choice entry field, and pressing **Enter**.

This example goes through the pop-up panels sequentially.

To go through the pop-up panels sequentially, press **Enter**. To go directly to a specific pop-up panel, type the number of the selection and press **Enter**.

---

**Note**

Each pop-up panel displays **Page x of y** in the upper right corner of the panel so you know where you are in the series of panels.

---

Use the DISPLAY Command Set pop-up panel (Figure 43 on page 101) to access the options listed on the pop-up panel.

**Figure 43: DISPLAY Command Set panel**

```markdown
<table>
<thead>
<tr>
<th>File</th>
<th>Options</th>
<th>Samples</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
</table>
```

---

**Command ===>** `DISPLAY Command Set`

**Description**

Select one of the following. Then press **Enter**.

- 1. Processing options - Specify what this display should do
- 2. Misc. options - Display limit, rate, sort
- 3. Interval selection - Restrict detail display based on time
- 4. Message selection - Select or reject by dest, origin, etc.
- 5. Exit

---

5 Type **1** in the choice entry field, and press **Enter**.

The DISPLAY Processing Options, Page 1 of 4 pop-up panel (Figure 44 on page 101) is displayed. This example displays statistics about message queues by entering an IMSID and accepting the Message Advisor defaults wherever possible.

**Figure 44: DISPLAY Processing Options panel**

```markdown
---

DISPLAY Processing Options
```

---
Instructions for displaying message information

6 Define the DISPLAY processing options by performing the following steps:

a Verify that the IMSID in the IMSID field is accurate.

b If the number is not already displayed, type 1 in the Type of display field and press Enter.

c Press END twice.

The Confirm Changes pop-up panel is displayed.

7 Confirm that you want to create and save this new member by typing 1 in the choice entry field of the Confirm Changes pop-up panel, and by pressing Enter.

The Command Sets panel (Figure 45 on page 102) is displayed.

Figure 45: Command Set panel—naming the DISPLAY command

Note

For information about batch reports, see “Message Advisor reports” on page 351.
8 *(optional)* Name the command set and add a description by performing the following steps:

   a *(optional)* Type the name of the command set in the **Member** field.

       If you name the command set in the panel, fields on the following pop-up panel are populated.

   b *(optional)* Type a description in the **Title** field, and press **END**.

       The Confirm Save pop-up panel is displayed.

9 Confirm that you want to create and save a new member by performing the following steps:

   a If you did not type the name on the previous pop-up panel, type a member name in the **Create new member** field.

   b If it is not already displayed, type **2** in the choice entry field.

       If you named the command set on the command sets pop-up panel, a **2** is displayed in the choice entry field and the **Create new member** field is populated in this pop-up panel.

   c Press **Enter**.

       The Member List panel is displayed.

       From this panel, you can edit and/or execute the command set that you just created. You can also select the command set for update and change the options and defaults on the respective pop-up panels by using the Message Advisor ISPF interface.

10 Type **E** in the **Act** field, and press **Enter**.

   The new command set (Figure 46 on page 103) is displayed that shows the command set built with the preceding panels and pop-up panels. You can edit the command set on this panel and save the changes.

**Figure 46: Command Set panel—displaying message queue statistics**
11 Review the command set and if it is accurate, press END.

The Member List panel is displayed.

12 To execute the command set, type Q in the Act field of the Member List panel and press Enter.

The Confirm Execute pop-up panel is displayed.

13 If 1 is not already displayed in this field, confirm execution by typing 1 in the choice entry field of the Confirm Execute pop-up panel and press Enter.

The Request Status (Figure 47 on page 104) pop-up panel is displayed.

Figure 47: Request Status panel

---

Note

Message Advisor executes the request and then displays several status panels that indicate the status of the DISPLAY request that you just executed.

14 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. You can view an explanation about any message on the panel by placing the cursor on the message and pressing PF4 (PROMPT).

If this pop-up panel shows a condition code other than 00, review the messages and reports from the Browse Results pop-up panel (Figure 48 on page 105) to determine the problem.
15 Press **Enter**.

The Request Results pop-up panel is displayed.

16 To view the DISPLAY report, type **1** in the choice entry field and press **Enter**.

The Browse Results report pop-up panel (Figure 48 on page 105) is displayed.

**Figure 48: Browse Results report—display message queue statistics**

17 Review all pages of the report.

*Note*

There may be a discrepancy in the number of records in use and the number of records reported. This discrepancy results from IMS housekeeping and the number of bit map records because of the size of the message queue data set.

18 Press **END** until the Primary Menu is displayed.
This step completes the sample task of building a command set to display message queue statistics.

**Displaying destination queue information: interactively**

This example shows how to display and browse destination queue information at your terminal without building a command set. It does not allow you to print reports.

For information about building a command set for this task and for printing reports, see “Displaying destination queue information: command set” on page 111.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

1. From the Primary Menu, type `2` in the choice entry field.
2. Type the IMSID for which you want to display destination information in the **IMSID** field, and press **Enter**.

The Destination Selection pop-up panel (Figure 49 on page 106) is displayed.

**Figure 49: Destination Selection panel**

<table>
<thead>
<tr>
<th>File</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ===&gt;</td>
<td>Destination Selection - Non-shared</td>
<td>Session connected</td>
<td></td>
</tr>
<tr>
<td>IMSID ...</td>
<td>R61P +</td>
<td>6. VSPCNT</td>
<td>12. LTERM 3,6-11,17</td>
</tr>
<tr>
<td>Destination type</td>
<td>1. All (2-17)</td>
<td>7. DEADQ</td>
<td>13. TRANS (4,5)</td>
</tr>
<tr>
<td>2. CNT (7,8,9)</td>
<td>8. DYNAMIC</td>
<td>14. BMP</td>
<td></td>
</tr>
<tr>
<td>3. MSNAME</td>
<td>9. STATIC</td>
<td>15. MPP</td>
<td></td>
</tr>
<tr>
<td>5. SMB (14,15)</td>
<td>11. OTMA</td>
<td>17. SYSTEM</td>
<td></td>
</tr>
</tbody>
</table>

Sort by . . . . . . . _ 1. Number of messages 3. Percentage of SHMSG used
2. Number of segments 4. Percentage of LGMSG used
5. Queue count

Limit sort display to ________ destinations
Range for dest. message list: messages ______ through ______ on queue __________
__ __________ (for a TPNAMe destination only)
DRRN. ________ (to view a specific record)
Region. ________ (to view only temporary queues, masking OK)
Display formatted prefix information
Display destinations even if no messages are queued

3. Define the destination selection criteria by performing the following steps:
   a. Verify that the IMSID in the **IMSID** field is accurate.
b If it is not already displayed in this field, type 1 in the Destination type field.

c To sort the output, type the option for the kind of sort you want Message Advisor to perform in the Sort by field.

d To sort the output, type a limit for the number of destinations you want Message Advisor to display in the Limit sort display to field.

**Note**
A limit is required if you want to sort the output. Sort performance depends on the number of destinations you specify. The smaller the number of destinations that you specify, the faster Message Advisor performs the sort.

e To limit the messages listed when a destination Message List pop-up panel is displayed, type a starting relative message number, ending relative number, and queue number in the Range for dest. message list field.

f To display all destinations for this IMSID, type a destination valid for your site in the Dest field or leave this field blank.

Masking is allowed in the Dest field: ? replaces one character in a multi-character string; * replaces the rest of the string.

If you type an LU name in the LUname field, you must also enter a destination. Furthermore, an LUname entry is only valid for TPNAME destinations.

g Ensure there is no slash (/) in the Display formatted prefix information field, and press Enter.

Deselecting this format option causes a hexadecimal dump of the prefix and message text.

h To display only queues being created by that region, type a dependent region name in the Region field.

Masking is allowed in the Region field: ? replaces one character in a multi-character string; * replaces the rest of the string.

i For more information on additional filtering and format fields, access the online help (see “Online help” on page 68).

j Press Enter.
The Destination List pop-up panel (Figure 50 on page 108) is displayed.

**Figure 50: Sample Destination List panel**

<table>
<thead>
<tr>
<th>Command ===</th>
<th>Destination List</th>
<th>Scroll ===</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type one or more action codes. Then press Enter.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A = Display messages</td>
<td>O = Stop and dequeue</td>
<td>P = Deq/noforce</td>
<td>More: + &gt;</td>
</tr>
<tr>
<td>C = Dequeue/reset</td>
<td>F = Deq/force</td>
<td>Row 00001 of 00025</td>
<td></td>
</tr>
<tr>
<td>T Type</td>
<td>Destination Msgs. Recs. Segs. % Used PSB/LU/RegID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ MSNAME MSC12</td>
<td>50 50 50 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ SYSTEM DFSTCFI</td>
<td>24 38 50 0.01% 0.01%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ SYSTEM MASTER1</td>
<td>16 17 19 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT-V MASTER</td>
<td>2 2 2 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT T3270B4</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT T3270A</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT NSB2</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT NSB8</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT T3270B1</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT T3270B</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT T3270B3</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ CNT NSB5</td>
<td>1 1 1 0.01% 0.00%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Review the list of destinations.

5 To display the destination queues that have messages queued to them, type S in the ACT field.

The Message List panel (Figure 51 on page 108) is displayed.

**Figure 51: Sample Message List panel**

<table>
<thead>
<tr>
<th>Command ===</th>
<th>Message List</th>
<th>Scroll ===</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type one or more action codes. Then press Enter.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S = Hex display</td>
<td>H = Hex display</td>
<td>P = Prefix display</td>
<td>O = Stop and dequeue</td>
</tr>
<tr>
<td>D = Dequeue/reset</td>
<td>F = Deq/force</td>
<td>N = Deq/noforce</td>
<td>Line 00001 of 00002</td>
</tr>
<tr>
<td>Dest . . : MASTER1</td>
<td>More: +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act O# MSG# Size Origin Timestamp Format User ID DRRN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ 3 1-1 401 DFSMTCNT 2001/222 13:58:15.5 DFSM01 DFSMTCNT 04000003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_ 3 2-1 415 DFSMTCNT 2001/222 13:58:15.5 DFSM01 DFSMTCNT 04000004</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note**

Temporary queues are identified by a numeric value that displays in the RegID column. When a temporary queue is displayed, the Tran/Reg column will contain the transaction (for MPP regions) or the dependent region jobname (for BMP regions) that created the temporary queue.

If you select a temporary queue for display, the Tran/Reg and RegID values will also be displayed at the top of the Message List and Message Display panels.

Messages usually move quickly from temporary to permanent queues. If you select a temporary queue for display, you may receive a NO MESSAGES FOUND
response, indicating that the messages have been removed from the temporary queue.

6 From the Message List report, you can perform the following actions:

- Display the Destination List pop-up panel by typing S in the Act field and pressing Enter.

The TPNAME Extension to the Destination List (Figure 52 on page 109) pop-up panel is displayed.

**Figure 52: Sample TPNAME Extension to the Destination List panel**

Note

TPNAME destinations can be 64 characters long. The > symbol to the right of destinations indicate that you can display the complete name by scrolling to the right. The TPNAME extension to the Destination List pop-up panel uses two lines to display each destination, even if the destination is not 64 characters long.

- View the message record in hexadecimal (Figure 53 on page 109) by typing S in the Act field, and pressing Enter.

**Figure 53: Message Display panel—hexadecimal mode**
Instructions for displaying message information

View the message prefix in a formatted display (Figure 54 on page 110) by typing P in the Act field, and pressing Enter.

Figure 54: Message Display panel—formatted mode
7 Press END until the Message Advisor Primary Menu is displayed.

This step completes the sample task of interactively displaying destinations that have messages queued.

Displaying destination queue information: command set

This example shows how to build and execute a DISPLAY command set to create and/or view a report on messages for destination queues. To display destinations that have messages queued, take the same steps as for the previous example and select the options shown in this example.

For information about building the command set request library and creating command set members, see “Building and executing a command set” on page 73.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

1 From the Message Advisor Primary Menu, perform the following steps:

   a Type 1 in the choice entry field.

   b Type a valid library name in the Request library field, and press Enter.

   The Member List panel is displayed.
2. Add a new member by performing the following steps.
   a. Type A in the Command area of the Member List panel.
      The Member List panel lets you add a new member or to select an existing
      member for update. After the command set is built and saved, you can also
      execute the command set from this panel.
   b. Press Enter.
      The Insert Command Set pop-up panel is displayed. This pop-up panel lets
      you select one of the Message Advisor base command sets.

3. Select the DISPLAY command set by performing the following steps:
   a. Type 4 in the choice entry field of the Insert Command Set pop-up panel.
   b. Press Enter.
      The DISPLAY Command Set pop-up panel (Figure 55 on page 112) is
      displayed.

   **Note**
   Each pop-up panel tells you where you are in the series by displaying Page x
   of y in the upper right corner of the panel.

   This example goes through the pop-up panels sequentially. To go through the
   pop-up panels sequentially, press Enter. To go directly to a pop-up panel, type
   the number of the selection and press Enter.

   **Figure 55: DISPLAY Command Set panel**

   ![DISPLAY Command Set panel]

4. Type 1 in the choice entry field, and press Enter.
The DISPLAY Processing Options, Page 1 of 4 pop-up panel (Figure 56 on page 113) is displayed.

In this example, you are going to display detailed information about selected destination queues by entering an IMSID and accepting the Message Advisor defaults wherever possible.

**Figure 56: DISPLAY Processing Options panel (Page 1 of 4)**

```
F  .-------------------------------------------------------------------------.
--- |                       DISPLAY Processing Options                        |
   | Command ===> __________________________________________________________ |
C   | |                                                                         |
T   | | Type options. Then press Enter.                         Page  1 of 4   |
   | |                                                                         |
   | |   IMSID . . . . . . . . ?___ +                                          |
   | |                                                                         |
   | |   Type of display . . . _  1. Statistics about the message queues       |
   | |                            2. Summary of destinations with messages     |
   | |                            3. Detailed information for destinations     |
   | |                            4. Formatted message queue record            |
   | |                                 Record DRRN  . . ________               |
   | |                                 Format option. . _  1. Formatted prefix |
   | |                                                     2. Hex dump         |
   | |                                                                         |
   | | If you select type 1, supply the IMSID and leave everything else blank. |
   | | If you select type 2, supply the IMSID and fill out pages 2,3,4.        |
   | | If you select type 3, supply the IMSID and fill out pages 2,3,4.        |
   | | If you select type 4, supply the IMSID, DRRN, and format option only.   |
   | |                                                                         |
'  "-------------------------------------------------------------------------'
```

**Note**

For information about batch reports, see “Message Advisor reports” on page 351.

5 Define the DISPLAY processing options by performing the following steps:

a Verify that the IMSID in the IMSID field is accurate.

b Type the appropriate number for the type of message queue information that you want to view in the Type of display field, and press Enter.

The DISPLAY Misc. Options, Page 2 of 4 pop-up panel (Figure 57 on page 113) is displayed.

**Figure 57: DISPLAY Misc. Options panel (Page 2 of 4)**

```
F  .-------------------------------------------------------------------------.
--- |                         DISPLAY Misc. Options                           |
   | Command ===> __________________________________________________________ |
C   | |                                                                         |
T   | | Type options. Then press Enter.                          Page  2 of 4   |
   | |                                                                         |
   | |   Limit display to . . ________ destinations                           |
   | |   Maximum activity rate ________ per minute                             |
   | |                                                                         |
   | |   Sort by . . . . . . . _  1. Number of messages                        |
   | |                            2. Number of segments                                  |
   | |                            3. % of SHMSG used                                   |
   | |                            4. % of LGMSG used                                   |
   | |                            5. Queue count                                   |
   | |                                                                         |
'  "-------------------------------------------------------------------------'
```
6 Define the miscellaneous DISPLAY selection criteria by performing the following steps:

a Type a limit for the number of destinations that you want Message Advisor to display in the **Limit display to** field.

**Note**
A limit is required if you want to sort the output. Sort performance depends on the number of destinations you specify. The smaller the number of destinations you specify, the faster Message Advisor will perform the sort.

b Type a valid activity rate in the **Maximum activity rate** field.

c If you want to sort the output, type the option number in the **Sort by** field of the sort method you want Message Advisor to perform. Possible values are:

- **Number of messages**—Total number of messages that are queued to the destination
- **Number of segments**—The total number of text segments that are queued to the destination
- **% of SHMSG used**—Percentage of the SHMSG data sets that is used by messages that are queued to the destination (for non-shared queues)
- **% of LGMSG used**—Percentage of the LGMSG data sets that are used by messages queued to the destination (for non-shared queues)
- **Queue count**—Total number of messages queued to the destination, as calculated (ENQCT-DEQCT) from the destination control block. (In this case, the message queues are not accessed. This provides a quicker response time, but none of the other counts and percentages can be determined.) Displayed in the #MSGS column.

d Type the option number in the **List destinations** field that indicates how much of the SELECT, REJECT, and INTERVAL criteria each destination must meet to be listed in the DISPLAY. Possible values are:

- **ALL**—All destinations that match the DESTINATION and DESTYPE criteria on the SELECT/REJECT statements will be listed, *even if no messages are queued*
- **NOTEMPTY**—All destinations that match the DESTINATION and DESTYPE criteria on the SELECT/REJECT statements and which have messages queued will be listed, even if none of the queued messages match the other SELECT/REJECT/INTERVAL criteria.

- **MATCH**—Only the destinations which have messages queued that match all the SELECT/REJECT/INTERVAL criteria will be listed. This value is the default value.

e  Press Enter.

The **DISPLAY Interval Selection, Page 3 of 4 pop-up panel** *(Figure 58 on page 115)* is displayed.

**Figure 58: DISPLAY Interval Selection panel (Page 3 of 4)**

| Command ===> ____________________________________________ Scroll ===> PAGE |
|-----------------------------------------------------------|--------------------------|
| Type one or more action codes, if desired.                | Page 3 of 4              |
| I=Insert D=Delete                                        | Line 00 of 00            |
|                                                           |                          |
| Type time intervals to restrict which messages are to be selected. |
| -----Start Time------ ------Stop Time------ OR Newer Than Older Than |
| Act YYYYDDD HHMMSST SHHMM YYYYDDD HHMMSST SHHMM nnn Days nnn Days |
| _                                                                         |
| _ _______ _______ _____ _______ _______ _____       ___         ___         |
| _ _______ _______ _____ _______ _______ _____       ___         ___         |
| _ _______ _______ _____ _______ _______ _____       ___         ___         |
| _ _______ _______ _____ _______ _______ _____       ___         ___         |

7 Determine whether to define time intervals to restrict message selection.

If you selected option **2 Summary of destinations with messages** or **3 Detailed information for destinations** on the **DISPLAY Processing Options (Page 1 of 4 pop-up panel)** only time intervals may be specified. See **Figure 56 on page 113**.

For the purposes of this example, leave this panel blank and press **Enter**.

The **DISPLAY Message Selection, Page 4 of 4 pop-up panel** *(Figure 59 on page 115)* is displayed.

**Figure 59: DISPLAY Message Selection panel (Page 4 of 4)**

| Command ===> ____________________________________ Scroll ===> PAGE |
|-----------------------------------------------------------|--------------------------|
| Type one or more action codes, if desired.                | Page 4 of 4              |
| I=Insert D=Delete S=Edit keyword values                   | Line 00 of 02            |
|                                                           |                          |
| Type values on one line to 'AND'. Use separate lines to 'OR'. |
|                                                           |                          |
|                                                           |                          |
| Act Function    Label    Destination    Type    Origin   Keywords? |
| _                              |                        |                        |            |            |
| _ SELECT                        |                        |                        |            |            |
| _ REJECT                        |                        |                        |            |            |
Define the message selection criteria by performing the following steps:

a. Type S or I in the Act field.

b. In the Function field, type SELECT or REJECT.

c. Type a user-defined name or label (up to eight characters) for the statement in the Label field.

The default labels will be SEL00001 and REJ00001 for the first SELECT and REJECT statements with the number incrementing for each type of statement.

d. In the Destination field, type a destination valid for your site.

e. In the Destination type field, type a valid destination type.

Masking is allowed in the Destination and Origin fields: ? replaces one character in a multi-character string; * replaces the rest of the string.

f. Press Enter.

The DISPLAY Message Keyword Selection pop-up panel (Figure 60 on page 116) is displayed.

Figure 60: DISPLAY Message Keyword Selection panel

| Command ===> ______________________________________________________________ |
| Label ________ Subcommand SELECT                                            |
| Type one or more action codes, if desired.                                  |
| S=Edit value D=clear value                                                  |
| Act Keyword Value                                                          |
| _ DESTination= Destinations or masks                                       |
| _ DESType= ALL Destination type                                             |
| _ RCNT= Remote CNTs or masks                                               |
| _ PSB= Transactions associated with PSBs                                   |
| _ DBD= Transactions associated with DBDs                                    |
| _ NODENAME= VTAM nodenames or masks                                        |
| _ LUname= LU names or masks                                                |
| _ USERID= Userids or masks                                                 |
| _ MFSNAME= MFS names or masks                                              |
| _ ORIGIN= Origins or masks                                                |
| _ PIMS= IMSIDs or masks                                                   |
| _ OIMS= IMSIDs or masks                                                    |
| _ REGION= Regions                                                         |

Perform one of the following steps:
To edit the value for each keyword that you want to specify on the SELECT or REJECT statement, type S in the Act field.

To clear the value for each keyword that you want to specify on the SELECT or REJECT statement, type D in the Act field.

To scroll through the list of available keywords, press F8.

h Press END.

The DISPLAY Message Selection, Page 4 of 4 pop-up panel (Figure 59 on page 115) is displayed.

i Press Enter.

The Confirm Changes pop-up panel is displayed.

9 Type 1 (Accept changes) in the choice entry field of the Confirm Changes pop-up panel, and press Enter.

The Command Sets panel (Figure 61 on page 117) is displayed.

Figure 61: Sample Command Set panel—naming the member

<table>
<thead>
<tr>
<th>File</th>
<th>Options</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ====&gt;</td>
<td></td>
<td></td>
<td>Command Sets - bmcnode.MAQ.REQUEST</td>
<td>Scroll ====&gt;</td>
</tr>
<tr>
<td>Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type one or more action codes. Then press Enter. S=Select for update I=Insert D=Delete</td>
<td></td>
<td></td>
<td></td>
<td>Line 000 of 001</td>
</tr>
<tr>
<td>Action</td>
<td>Command Set Description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>=</td>
<td>**************************************** TOP OF DATA ****************************************</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>=</td>
<td>DISPLAY</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10 (optional) Name the command set and add a description by performing the following steps:

a (optional) Type the name of the command set in the Member field.

If you name the command set now, fields on the following pop-up panel are populated.

b (optional) Type a description in the Title field, and press END.

The Confirm Save pop-up panel is displayed.

11 Confirm that you want to create and save a new member.
a If you did not type the name on the previous pop-up panel, type a member name in the **Create new member** field.

b If it is not already displayed, type 2 in the choice entry field.

If you named the command set on the command sets pop-up panel, a 2 is displayed in the choice entry field and the member name is carried forward to this pop-up panel.

c Press **Enter**.

The Member List panel (Figure 62 on page 118) is displayed.

**Figure 62: Sample Member List panel**

<table>
<thead>
<tr>
<th>Act</th>
<th>Name</th>
<th>Prompt</th>
<th>Size</th>
<th>Created</th>
<th>Changed</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>DEQUEUE1</td>
<td>________</td>
<td>11</td>
<td>2001/07/18</td>
<td>2001/07/18 15:23:49</td>
<td>USERID</td>
</tr>
<tr>
<td>_</td>
<td>DISPLAY1</td>
<td>________</td>
<td>13</td>
<td>2001/07/18</td>
<td>2001/07/18 15:45:49</td>
<td>USERID</td>
</tr>
<tr>
<td>_</td>
<td>DISPLAY2</td>
<td>________</td>
<td>14</td>
<td>2001/07/15</td>
<td>2001/07/15 16:36:49</td>
<td>USERID</td>
</tr>
</tbody>
</table>

12 View the command set and edit it, if necessary, by performing the following steps:

a Type E in the **Act** field.

From the Member List panel, you can edit and/or execute the member that you just created. You can also select the member for update from the Member List panel and change the options and defaults on the respective pop-up panels by using the Message Advisor ISPF interface.

b Press **Enter**.

The new command set is displayed. The command set that is displayed depends on the options specified on the DISPLAY Processing Options, Page 1 of 4 pop-up. Figure 63 on page 119, Figure 64 on page 119, and Figure 65 on page 119 show examples of the command sets that can be built.

Depending on which display type that you specified on the DISPLAY Processing Options, Page 1 of 4 pop-up, one of the following command sets will be created:
You can edit this command set on this panel and save the changes. You can select the command set from the Member List panel and change the command set by using the Message Advisor ISPF interface.

**Figure 63: Command Set panel—displaying destination queue information**

```
EDIT ---- bmcnode.MAQ.REQUEST(DISPLAY2) - 01.00 --------------------- COLUMNS 001 072
***** ***************************************************************************** TOP OF DATA ***********************************************
000010 *TITLE=DISPLAYING DESTINATION QUEUE INFORMATION
000020 DISPLAY IMSID=R61P,TYPE=DEST_QUEUES,RATE=0,DESTINATION=L3*,
000030 DESTYPE=ALL,LIMIT=9
000040 END
***** **************************** BOTTOM OF DATA *******************************
```

**Figure 64: Command Set panel—displaying detail destination data**

```
EDIT ---- bmcnode.MAQ.REQUEST(DISPLAY3) - 01.01 --------------------- COLUMNS 001 072
***** **************************** TOP OF DATA ****************************
000010 *TITLE=DISPLAYING DESTINATION INFORMATION
000020 DISPLAY IMSID=R61P,TYPE=DESTINATION,RATE=0
000030 SELECT DESTINATION=L3*,QUEUE=ALL,DESTYPE=ALL
000040 END
```

**Figure 65: Command Set panel—displaying a specific message record**

```
EDIT ---- bmcnode.MAQ.REQUEST(DISPLAY4) - 01.00 --------------------- COLUMNS 001 072
***** **************************** TOP OF DATA ****************************
000010 *TITLE=DISPLAYING RECORD INFORMATION
000020 DISPLAY IMSID=R61P,TYPE=RECORD,DRRN=0400001D,FORMAT=NO
000030 END
```

13 Review the appropriate command set and edit it, if necessary, by performing the following steps:

a  Edit the command set, if needed.

b  Press END.

The Member List panel is displayed again.

14 To execute the command set, type **Q** in the Act field of the Member List panel and press **Enter**.

The Confirm Execute pop-up panel is displayed.
15 If 1 is not already displayed in this field, confirm execution by typing 1 in the choice entry field of the Confirm Execute pop-up panel and pressing Enter.

Message Advisor executes the request and displays several status panels that indicate the status of the DISPLAY request that you just executed.

The Request Status pop-up panel (Figure 66 on page 120) is the first pop-up panel that is displayed.

Figure 66: Request Status panel

16 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. You can view an explanation about any message on the panel by placing the cursor on the message and pressing PF4 (PROMPT).

If this pop-up panel shows a condition code other than 00, review the messages and reports from the Browse Results pop-up panel to determine the problem.

17 Press Enter.

The Request Results pop-up panel is displayed.

18 To view the DISPLAY report, type 1 in the choice entry field on the Browse Results pop-up panel and press Enter.

The Browse Results report is displayed.

19 Review the report.

Depending on which display type you specified on the DISPLAY Processing Options, Page 1 of 4 pop-up panel, one of the following output reports will be created:
Instructions for displaying message information

<table>
<thead>
<tr>
<th>Task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 2, Summary of destinations with messages</td>
<td>See Figure 67 on page 121</td>
</tr>
<tr>
<td>Option 3, Detailed information for destinations</td>
<td>See Figure 68 on page 121</td>
</tr>
<tr>
<td>Option 4, Formatted message queue record</td>
<td>See Figure 69 on page 122</td>
</tr>
</tbody>
</table>

Figure 67: Sample Browse Results report—destination queue information

```
Browse Results
Line 000000 of 000012 Cols 001 075
More: >
********************************************************************************
BMC43071I DISPLAY IN PROGRESS FOR USERID (TASK 2)
>>>DISPLAY IMSID=R61P,TYPE=DEST_QUEUES,RATE=0,DESTINATION=L3*,
>>>DESTYPE=ALL,LIMIT=9
>>>END
Message Advisor V1.0.02 - SERVER ID QMRP 08/14/2001.226 1
DISPLAY Destination Summary For IMSID R61P

TYPE  DESTINATION  #MSGS  #RECS  #SEGS  %SHMSG  %LGMSG  PSB/LU/REG
CNT  PMASTER  267  267  299  .37  .00
CNT  SMASTER  259  259  291  .35  .00
CNT-V TEMPD001  1  1  1  .01  .00 LSGTEMPQ
CNT-V TEMPD002  1  1  1  .01  .00 LSGTEMPQ
CNT  L300PP01 13,161 13,161 13,161 37.93 .11 0
CNT  L300PP02  205  205  205  .00 1.51 0
BMC43076I DISPLAY FOR USERID (TASK 2) IMS(R61P) ENDED, RC=00
********************************************************************************
```

Figure 68: Sample Browse Results report—destination detail

```
Browse Results
Command ===> ____________________________________________ Scroll ===> PAGE
Line 000000 of 001406  Cols 001 075
More: + >
********************************************************************************
BMC43077I DISPLAY IN PROGRESS FOR USERID1 (TASK 13)
>>>DISPLAY IMSID=R61P,TYPE=DESTINATION,LIMIT=10
>>>SELECT LABEL=SELTRISH,DESTYPE=ALL
>>>END
Message Advisor V1.0.02 - Server ID QMRP 08/14/2001.226 1
DISPLAY Destination Detail for IMSID R61P

Messages Queued for Destination = PIE20001
********************************************************************************

```

Figure 69 on page 122 shows a message in hexadecimal format.

**Figure 69: Sample Browse Results report—hexadecimal format**

---

**Figure 70 on page 122 shows a message in formatted mode.**

**Figure 70: Browse Results panel—formatted mode**

---

To format a message, type 1 in the **Format option** field of the DISPLAY Processing Options pop-up panel (Figure 56 on page 113).

20 Press **END** until you return to the Message Advisor Primary Menu.

This step completes the sample task of creating and executing a command set to display a message queue information.
Dequeueing messages

This chapter provides information about how to use the Message Advisor DEQUEUE command. The features of the command, restrictions related to dequeueing messages, usage tips, and instructions for dequeueing messages are presented in this chapter.

Overview

When you have messages that you do not need on the message queues, Message Advisor lets you dequeue (delete) them, freeing the message queue space. To dequeue (and optionally write to a sequential data set) all or selected messages from a specified destination, use the options provided with the DEQUEUE command.

The DEQUEUE command lets you perform the following tasks:

- Dequeue all messages from a destination
- Dequeue Multiple System Coupling (MSC) destinations
- Dequeue a specific message from a destination
- Dequeue a specific queue
- Dequeue transactions (SMBs)
- Dequeue messages meeting your selection criteria
- Validate (test) messages for a successful dequeue without actually doing the dequeue
- Unload messages satisfying all selection criteria and then dequeue these messages (MODE=UNLOAD_DEQUEUE)

The MODE=UNLOAD_DEQUEUE option unloads messages to an output file, reads the output file records, deletes the messages from IMS, and updates the output file. Use this option to ensure that only the messages that are unloaded will be dequeued. Message Advisor compares data to ensure that before any messages
are dequeued, it verifies that these messages are exactly the ones that were unloaded.
Also, this option is used to dequeue messages from one IMS system and then requeue them to the same, or another IMS system.

- Select or reject messages for dequeue based on the following criteria:
  - Date and time ranges
  - Destinations (with masking allowed)
  - LU names (with masking allowed)
  - Origin (with masking allowed)
  - Destination type
  - Type of message (queue number)
  - Additional types of criteria (see “Dequeuing messages: command set” on page 132)

For more information about the DEQUEUE command, subcommands, keywords, and parameters, see the Message Advisor for IMS Reference Manual.

**Note**
All sample command sets in this chapter are shown with the option of including the default values. For information about how to create command sets without the defaults being shown, see “Session Control” on page 45.

## Restrictions

The following restrictions apply when you are dequeueing or unloading and dequeueing messages:

- Message Advisor does not dequeue messages in temporary queues.

- You must stop the following destination types before running a DEQUEUE or an UNLOAD_DEQUEUE request:
  - VTAM subpool
  - MSNAME
  - Any device requiring session synchronization
  - A non-VTAM device
  - Any device requiring session backup
— ISC links
— MSC links
— 2741 point-to-point
— 2740 point-to-point
— System 7
— Local SYSIN and SYSOUT
— System 3
— 3600 devices
— 3614 devices
— 3790 devices
— LU 6 devices
— LU 4 devices
— NTO devices
— TPNAME
— OTMA

**WARNING**
If a DEQUEUE is performed on a SLUP device with `FORCE=YES` specified, then synchronization between the SLUP device and IMS may be lost. Manual intervention may be required to restart and resynchronize the SLUP device.

- **Message Advisor does not dequeue destinations that are in conversation.**

  **Note**
  Conversation output that is pending transmission on an MSNAME is dequeued. Dequeueing the conversation requires the originating terminal, which is waiting for the output, to be forcibly exited from the conversation.

- **If you specify a DEQUEUE request with the DESTINATION= * keyword, it ignores master terminals. If you specify the keyword as DESTINATION=MASTER, the master terminal messages are dequeued.**

  **Note**
  Dequeueing on a master, secondary master, WTOR, or on DFS-prefixed CNTs requires `FORCE=YES`.

**Usage tips**

The following two scenarios describe situations in which you can use the Message Advisor DEQUEUE command effectively. In both scenarios, the DEQUEUE command feature `MODE=UNLOAD_DEQUEUE` unloads and dequeues messages. The messages are then requeued from one IMS system to another.
You have reorganized a remote office. The printers and terminals have been switched to another IMS system. However, the devices retain the same Stage 1 characteristics. If the LTERM names are different in the new IMS system, you can use the NEWDEST keyword for the CHANGE subcommand on the REQUEUE command to requeue the messages to the correct LTERMs.

You have LTERM messages intended for the remote office on the previous IMS system’s queues, which is now connected to another IMS system. By using Message Advisor, you can quickly solve this problem. By using the examples in this chapter and the examples in “Unloading messages” on page 145 and “About the Message Advisor Queue Protection Facility” on page 203 to build a request containing the command sets to unload the messages from the previous IMS system, dequeue them, and then requeue them to the IMS system supporting the remote office.

Instructions for dequeueing messages

This section includes information about preliminary operational tasks you must perform before dequeueing messages and instructions about how to dequeue messages interactively or by building a command set.

<table>
<thead>
<tr>
<th>Task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing to dequeue messages</td>
<td>“Before dequeueing messages” on page 126</td>
</tr>
<tr>
<td>Dequeueing messages: interactively</td>
<td>“Dequeueing messages: interactively” on page 127</td>
</tr>
<tr>
<td>Dequeueing messages: command set</td>
<td>“Dequeueing messages: command set” on page 132</td>
</tr>
</tbody>
</table>

Before dequeueing messages

Before dequeueing messages, perform the following tasks:

- Bring up the Message Advisor Server by submitting the MAQCNTL member QMR#STRT. If you have placed this member in your PROCLIB, issue an MVS START command.

- Ensure that you have started the VTAM APPLIDs for the Message Advisor Server and user sessions by issuing a V NET, ID=xxxxxxxx, ACT command, where xxxxxxxxxx represents a member name of SYS1.VTAMLST or its equivalent. This member contains the definition of the VTAM APPLIDs for the Message Advisor Server and user sessions.

- If you access the Message Advisor Server frequently, let it run continuously; if you do not, bring it up only when needed.
Dequeueing messages: interactively

The following example shows how to display a group of messages, locate a specific message from a destination, and dequeue only that message.

Message Advisor lets you dequeue unwanted messages from a group of messages. With Message Advisor, you can display the text of each message in the group and select the messages you want to dequeue.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

To interactively dequeue a message

1. On the Message Advisor Primary Menu, type 2 in the choice entry field.
2. Type the IMSID for which you want to dequeue a message in the IMSID field.
3. Type an asterisk (*) in the Server name field and press Enter.

This action displays a series of pop-up panels and panels that enable you to display a message and dequeue that message.

The Destination Selection panel (Figure 71 on page 127) is the first panel displayed.

**Figure 71: Destination Selection panel**

<table>
<thead>
<tr>
<th>Command ==&gt;</th>
<th>Destination Selection - Non-shared</th>
<th>Session connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSID ... ..</td>
<td>R61P +</td>
<td>6. VSPCNT</td>
</tr>
<tr>
<td>Destination type</td>
<td>2. All (2-17)</td>
<td>7. DEADQ</td>
</tr>
<tr>
<td></td>
<td>1. CNT (7,8,9)</td>
<td>8. DYNAMIC</td>
</tr>
<tr>
<td></td>
<td>3. MSNAME</td>
<td>9. STATIC</td>
</tr>
<tr>
<td></td>
<td>5. SMB (14,15)</td>
<td>11. OTMA</td>
</tr>
<tr>
<td>Sort by . . . .</td>
<td>1. Number of messages</td>
<td>3. Percentage of SHMSG used</td>
</tr>
<tr>
<td></td>
<td>2. Number of segments</td>
<td>4. Percentage of LGMSG used</td>
</tr>
<tr>
<td></td>
<td>5. Queue count</td>
<td></td>
</tr>
<tr>
<td>Limit sort display to ________ destinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range for dest. message list: messages ______ through ______ on queue _</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destination (use '?' or '*' for masking, use quotes if lowercase/special chars)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Define the destination selection criteria by performing the following steps:
a Verify that the IMSID in the IMSID field is accurate.

b If it is not already displayed in this field, type 2 in the Destination type field.

c To sort the output, type the option for the kind of sort you want Message Advisor to perform in the Sort by field.

d To sort the output, type a limit for the number of destinations that you want Message Advisor to display in the Limit sort display to field.

**Note**
To sort the output, a limit is required. Sort performance depends on the number of destinations you specify. The smaller the number of destinations you specify, the faster Message Advisor performs the sort.

e To display all destinations for this IMSID, type a destination valid for your site in the Dest field or leave this field blank.

**Note**
If you leave this field blank, displaying all destinations for an IMSID could take a significant amount of time.

Masking is allowed in the Dest field: ? replaces one character in a multicharacter string; * replaces the rest of the string.

If you type an LU name in the LUname field, you must also enter a destination. An LUname entry is valid for TPNAME destinations only.

f Ensure that there is no slash (/) in the Display formatted prefix information field.

Deselecting this format option causes a hexadecimal dump of the prefix and message text.

g For more information on additional filtering and format fields, access the online help (see “Online help” on page 68).

h Press Enter.

The Destination List pop-up panel (Figure 72 on page 128) is displayed.

**Figure 72: Destination List panel**

<table>
<thead>
<tr>
<th>Command</th>
<th>Destination List</th>
<th>Scroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type one or more action codes. Then press Enter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>S=Display messages</td>
<td>O=Stop and dequeue</td>
</tr>
<tr>
<td>c</td>
<td>D=Dequeue/reset</td>
<td>F=Deq/force N=Deq/noforce</td>
</tr>
<tr>
<td>t</td>
<td>Type Destination Msgs.</td>
<td>Recs. Segs. --- % Used --- PSB/LU/ RegID</td>
</tr>
</tbody>
</table>

Instructions for dequeueing messages
5 To display the messages from the specific destination, perform the following steps:

a To display the messages from the specific destination, type S in the Action field and press Enter.

The Message List pop-up panel (Figure 73 on page 129) is displayed.

Note TPNAME destinations can be 64 characters long. The ">" symbol to the right of such destinations (Figure 73 on page 129) indicates that you can display the complete name by scrolling to the right. The TPNAME extension to the Destination List pop-up panel uses two lines to display each destination, even if the destination is not 64 characters long.

Figure 73: TPNAME Extension to the Destination List panel

b Type S in the Action field, and press Enter.
The destination queues that have messages queued are displayed in the Message List pop-up panel (Figure 74 on page 130).

**Figure 74: Sample Message List panel**

```
<table>
<thead>
<tr>
<th>Type one or more action codes. Then press Enter.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S=Hex display</td>
</tr>
<tr>
<td>H=Hex display</td>
</tr>
<tr>
<td>P=Prefix display</td>
</tr>
<tr>
<td>O=Stop and dequeue</td>
</tr>
<tr>
<td>D=Dequeue/reset</td>
</tr>
<tr>
<td>F=Deq/force</td>
</tr>
<tr>
<td>N=Deq/noforce</td>
</tr>
<tr>
<td>Dest . . : IOPECHO</td>
</tr>
<tr>
<td>Act Q#  MSG#  Size Origin  Timestamp  Format  User ID  DRRN</td>
</tr>
<tr>
<td>_  4     1-1  381 IMS037 2001/218 20:48:23.6 IMS037 040008BC</td>
</tr>
<tr>
<td>_  4     2-1  380 IMS200 2001/218 20:49:33.5 IMS200 040008BD</td>
</tr>
</tbody>
</table>
```

6 To dequeue the message, type **D** in the Act field and press **Enter**.

The Confirm Dequeue pop-up panel is displayed.

7 To confirm that you want to dequeue message DRRN, type **1** in the choice entry field of the Confirm Dequeue pop-up panel and press **Enter**.

The Request Status pop-up panel (Figure 75 on page 130) is displayed.

**Figure 75: Sample Request Status panel**

```
| Request for Server QJER: 15:04:39 Dequeue message by DRRN |
```

Instructions for dequeueing messages
8 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. If this pop-up panel shows a condition code other than 00, review the messages and reports from the Browse Results pop-up panel (Figure 76 on page 131) to determine the problem.

9 Press Enter.

The Request Results pop-up panel is displayed.

10 To view the DEQUEUE report, type 1 in the choice entry field of the Browse Results pop-up panel and press Enter.

The Browse Results pop-up panel (Figure 76 on page 131) is displayed.

**Figure 76: Browse Results panel**

```
Command ===> Scroll ===> PAGE
Line 000000 of 000025 Cols 001 075
More: + >
*************************************************************
BMC43077I DEQUEUE IN PROGRESS FOR ROHPXM (TASK 5)
>>>DEQUEUE IMSID=R61P
>>>>SELECT DESTINATION=IOPECHO,DESTYPE=DYNAMIC,QUEUE=ALL,
>>>>DRRN=040008BC
>>>>END

Message Advisor for IMS V1.0.02 - Server ID QJER 08/17/2001.229 15.
Dequeue Statistics Summary for IMSID R61P
Total Number of Destinations Selected 1
Total Number of Messages Examined.... 1
Total Number of Messages Dequeued.... 1
Total Number of Destinations in Error 0

Message Advisor for IMS V1.0.02 - Server ID QJER
Dequeue Destination Report for IMSID R61P
DESTINATION TYPE #MSG DEQ. Q# FIRST/LAST DRRN LU/TPipe STATUS
IOPECHO CNT-V 1 4 040008BC 00-DEQUEUE

BMC43076I DEQUEUE FOR ROHPXM (TASK 5) IMS(R61P) ENDED, RC=00
*************************************************************
```

11 Review the report by performing the following steps:

a Ensure that the DEQUEUE status code for each destination is 00.

If this pop-up panel shows a status code other than 00, see the BMC Documentation Center for an error explanation.
b Press **END** until the Message List pop-up panel is displayed.

The message is marked as dequeued (Figure 77 on page 132).

**Figure 77: Sample Message List panel with dequeued message**

<table>
<thead>
<tr>
<th>Command ===⇒</th>
<th>Message List</th>
<th>Scroll ===⇒ PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type one or more action codes. Then press Enter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S=Hex display</td>
<td>H=Hex display</td>
<td>P=Prefix display</td>
</tr>
<tr>
<td>D=Dequeue/reset</td>
<td>F=Deq/force</td>
<td>N=Deq/noforce</td>
</tr>
<tr>
<td>Dest . . : IOPECHO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Act</th>
<th>Q#</th>
<th>MSG#</th>
<th>Size</th>
<th>Origin</th>
<th>Timestamp</th>
<th>Format</th>
<th>User ID</th>
<th>DRRN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2-1</td>
<td>380</td>
<td>IMS200</td>
<td>2001/218 20:49:33.5</td>
<td>IMS200</td>
<td>040008BD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12 Select another message to display or dequeue by returning to Step 6 on page 130; or conclude the process by pressing **END** until you return to the Message Advisor Primary Menu.

This step completes the sample task of interactively dequeuing a specific message from a selected destination.

### Dequeueing messages: command set

This example shows you how to build and execute a DEQUEUE command set to dequeue messages from multiple destinations.

For information about building the command set request library and creating command set members, see “Building and executing a command set” on page 73.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

#### To dequeue a command set

1 From the Message Advisor Primary Menu, perform the following steps:

   a Type **1** in the choice entry field.

   b Type a valid library name in the **Request library** field, and press **Enter**.

      The Member List panel is displayed.

2 Add a new member by typing **A** in the **Command** area of the Member List panel.
The Member List panel lets you add a new member or to select an existing member for update. After the command set is built and saved, you can also execute the command set from this panel.

3 Press **Enter**.

The Insert Command Set pop-up panel is displayed. This pop-up panel lets you select one of the Message Advisor base command sets.

4 To select the DEQUEUE command set, type **2** in the choice entry field and press **Enter**.

The DEQUEUE Command Set pop-up panel (Figure 78 on page 133) is displayed.

The DEQUEUE Command Set pop-up panel lets you access the options listed on the pop-up panel. This example goes through the pop-up panels sequentially. To go directly to a pop-up panel, type the number of the selection and press **Enter**.

**Note**

Each pop-up panel tells you where you are in the series by displaying **Page x of y** in the upper right corner of the panel.

---

**Figure 78: DEQUEUE Command Set panel**

File Options Samples Session Display Help

Command ===> DEQUEUE Command Set

Description

Select one of the following. Then press Enter.

- 1. Processing options - Specify what this dequeue should do
- 3. Interval selection - Restrict search based on time
- 4. Message selection - Select or reject by dest, queue, etc.
- 5. Alternate output - Output file specifications
- 6. Exit

---

5 Type **1** in the choice entry field, and press **Enter**.

The DEQUEUE Processing Options, Page 1 of 5 pop-up panel (Figure 79 on page 134) is displayed.
This example shows how to dequeue all messages.

**Figure 79: DEQUEUE Processing Options panel, Page 1 of 5**

---

<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>DEQUEUE Processing Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type options. Then press Enter.</td>
<td></td>
</tr>
<tr>
<td>IMSID . . . . . . . . ?___ +</td>
<td></td>
</tr>
<tr>
<td>Processing mode . . . 1  1. Dequeue (delete) selected messages</td>
<td></td>
</tr>
<tr>
<td>2. Validate selected messages</td>
<td></td>
</tr>
<tr>
<td>3. Dequeue and Unload messages</td>
<td></td>
</tr>
<tr>
<td>Conversational message dequeue option (for Processing mode 1 only).</td>
<td></td>
</tr>
<tr>
<td>1. ALL - Both conversational and non-conversational messages may be dequeued</td>
<td></td>
</tr>
<tr>
<td>2. NONE - No conversational messages may be dequeued</td>
<td></td>
</tr>
<tr>
<td>3. ONLY - Only conversational messages may be dequeued</td>
<td></td>
</tr>
<tr>
<td>Rewrite type (for Processing mode 3 only).</td>
<td></td>
</tr>
<tr>
<td>1. Rewrite by block (faster)</td>
<td></td>
</tr>
<tr>
<td>2. Rewrite by message (more precise)</td>
<td></td>
</tr>
</tbody>
</table>
---

6 Define the DEQUEUE processing options by performing the following steps:

a Verify that the IMSID in the IMSID field is accurate.

b If it is not already displayed, type 1 in the Processing mode field.

c To indicate whether any active or held conversational messages should be dequeued, type the option number in the Conversational message dequeue option field. Possible values are:

- **ALL**—Both conversational and non-conversational messages may be dequeued.

- **NONE**—Conversational messages will not be dequeued. This value is the default value.

- **ONLY**—Only conversational messages may be dequeued (non-conversational messages are not dequeued).

Regardless of the option chosen for this field, only messages which match the other selection criteria will be dequeued.

d Press Enter.

The DEQUEUE Misc. Options, Page 2 of 5 pop-up panel (Figure 80 on page 135) is displayed.
The Summary and Detail reports provide a summary of the messages dequeued and details of the messages dequeued by destination. For more information about reports, see “Message Advisor reports” on page 351.

Figure 80: Sample DEQUEUE Misc. Options panel, Page 2 of 5

Select the appropriate options on the DEQUEUE Misc. Options pop-up panel by performing the following steps:

a Select to print the Summary report and Destination report of messages dequeued.

b Type 2 in the Force option field.

Note
To dequeue an active destination, you must specify the Force option as 2. For a list of destinations that must be stopped before they can be dequeued and for a list of restricted destinations that are not valid with the Force option, see “Restrictions” on page 124.

c Press Enter.

The DEQUEUE Interval Selection, Page 3 of 5 pop-up panel (Figure 81 on page 135) is displayed.

Figure 81: DEQUEUE Interval Selection panel, Page 3 of 5
8 Determine whether to define time intervals to restrict message selection.

For this example, leave this pop-up panel blank.

Time intervals may be specified only if you selected a processing mode of dequeue and unload messages, option 3, on the DEQUEUE Processing Options, Page 1 of 5 pop-up panel (Figure 79 on page 134). Additionally, specifying time intervals is optional, even if you specified option 3 as the display type.

9 Press Enter.

The DEQUEUE Message Selection, Page 4 of 5 pop-up panel (Figure 82 on page 136) is displayed.

Figure 82: DEQUEUE Message Selection panel, Page 4 of 5

10 Define the DEQUEUE message selection criteria by performing the following steps:

Note

You can specify as many SELECT and REJECT subcommands as you need to dequeue from multiple destinations, queues, and destination types.

The Origin field should not be used when the processing mode is dequeue and unload messages.

a Type S or I in the Act field.
b In the **Function** field, type **SELECT** or **REJECT**.

c Type a user-defined name or label (up to eight characters) for the statement in the **Label** field.

The default labels will be SEL00001 and REJ00001 for the first SELECT and REJECT statements with the number incrementing for each type of statement.

d Type a destination valid for your site in the **Destination** field.

e Type a valid destination type in the **Destination type** field.

**Note**

Masking is allowed in several fields: ? replaces one character in a multi-character string; * replaces the rest of the string.

f Press **Enter**.

The DEQUEUE Message Keyword Selection pop-up panel (Figure 83 on page 137) is displayed.

Figure 83: DEQUEUE Message Keyword Selection panel

| Command ===> ______________________________________________________________ |
| Label ________ Subcommand SELECT |
| Type one or more action codes, if desired. S=Edit value D=Set default value |
| Act Keyword Value |
| DESTination= Destinations or masks |
| DRRN= Device relative record number |
| DESType= ALL Destination type |
| RCNT= Remote CNTs or masks |
| PSB= Transactions associated with PSBs |
| DBD= Transactions associated with DBDs |
| NODENAME= VTAM nodenames or masks |
| LUname= LUNames or masks |
| USERID= Userids or masks |
| MFSNAME= MFS names or masks |
| ORIG1n= Origins or masks |
| PIMS= IMSIDs or masks |
| OIMS= IMSIDs or masks |

---

**Note**

Masking is allowed in several fields: ? replaces one character in a multi-character string; * replaces the rest of the string.

---

g Perform one of the following steps:

- To access the pop-up panel so you can edit the value for each keyword that you want to specify on the SELECT or REJECT statement, type **S** in the **Act** field. Press END to exit each pop-up panel.

- To clear the value for each keyword that you want to specify on the SELECT or REJECT statement, type **D** in the **Act** field.
To scroll through the list of available keywords, press F8.

h Press END.

The DEQUEUE Message Selection, Page 4 of 5 pop-up panel (Figure 82 on page 136) is displayed.

i Press Enter.

The DEQUEUE Output Data Set Options, Page 5 of 5 pop-up panel (Figure 84 on page 138) is displayed.

Figure 84: DEQUEUE Output Data Set Options panel, Page 5 of 5

---
<table>
<thead>
<tr>
<th>DEQUEUE Output Data Set Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ===&gt; ____________________</td>
</tr>
<tr>
<td>Select (type a '/') to see more allocation options. Page 5 of 5</td>
</tr>
<tr>
<td>- Output file.</td>
</tr>
<tr>
<td>Data set name __________________</td>
</tr>
<tr>
<td>or DDname . ________</td>
</tr>
<tr>
<td>Disposition . _ 1.New 2.Mod 3.Old</td>
</tr>
<tr>
<td>Generic unit ________ Primary quantity ________ cylinders</td>
</tr>
</tbody>
</table>
---

11 Define the DEQUEUE output data set options by performing the following steps.

a Type a slash (/) in the Output file field, and press Enter.

The DEQUEUE Data Set Allocation Options pop-up panel (Figure 84 on page 138) is displayed.

Figure 85: DEQUEUE Data Set Allocation Options panel

---
<table>
<thead>
<tr>
<th>DEQUEUE Data Set Allocation Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ===&gt; ______________________</td>
</tr>
<tr>
<td>S Data set information.</td>
</tr>
<tr>
<td>Data set name ____________________</td>
</tr>
<tr>
<td>or DDname . ________</td>
</tr>
<tr>
<td>Disposition . _ 1.New 2.Mod 3.Old</td>
</tr>
<tr>
<td>/ Append . . . . ___ (YES or NO)</td>
</tr>
<tr>
<td>Model after . ____________________</td>
</tr>
<tr>
<td>Volume serial ______  _ Specify multiple volumes</td>
</tr>
<tr>
<td>Generic unit . ___________</td>
</tr>
<tr>
<td>Space information.</td>
</tr>
<tr>
<td>Primary qty . _______ cylinders</td>
</tr>
<tr>
<td>Secondary qty . _______ cylinders</td>
</tr>
<tr>
<td>Block size . . __________</td>
</tr>
</tbody>
</table>
---

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SMS information (for SMS managed data set).
SMS Mgmt class ________
SMS Stg class ________
SMS Data class ________

b Edit the fields (Table 13 on page 139), as necessary:

Table 13: Fields available on the DEQUEUE data set allocation options panel

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data set name</td>
<td>Type the name of the output data set that is being allocated. If you are specifying a DDname, leave the Data set name blank.</td>
</tr>
<tr>
<td>or DDname</td>
<td>Type the DDname which indicates a pre-allocated output data set that is to be used. If you are specifying a DDname, leave all other fields blank.</td>
</tr>
<tr>
<td>Disposition</td>
<td>Type the option number in the selection field to indicate the disposition of the output data set being allocated. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>■ A new output data set will be allocated.</td>
</tr>
<tr>
<td></td>
<td>■ If the named output data set exists, it will be used. If it does not exist, a new output data set will be allocated.</td>
</tr>
<tr>
<td></td>
<td>■ The named output data set already exists.</td>
</tr>
<tr>
<td></td>
<td>The default value for this field is 3.</td>
</tr>
<tr>
<td>Append</td>
<td>Type the appropriate value to indicate whether data is to be appended to the output data set or not. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>■ YES—Append new data to the output data set.</td>
</tr>
<tr>
<td></td>
<td>■ NO—Replace, or overwrite, the old data with the new data in the output data set.</td>
</tr>
<tr>
<td></td>
<td>If the Disposition field value is 2. Mod, the default value for this field is YES. If the Disposition field value is 3. Old, the default value for this field is NO.</td>
</tr>
<tr>
<td>Model after</td>
<td>Specify the name of the existing data set whose attributes you want to copy for the output data set being allocated.</td>
</tr>
<tr>
<td>Volume serial</td>
<td>Specify the DASD volume serial (VOLSER) where this output data set will be allocated.</td>
</tr>
<tr>
<td>Specify multiple volumes</td>
<td>Type a slash (/) in this field and press Enter to access the Volume List pop-up panel where you specify multiple DASD volume serials (VOLSERs) for the data set. Press END to return to the DEQUEUE Data Set Allocation Options pop-up panel.</td>
</tr>
</tbody>
</table>
Instructions for dequeuing messages

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic unit</td>
<td>Type the generic unit name to be used for data set allocation. Generic names (also referred to as esoteric) are given to groups, or pools of DASD volumes. Some common generic/esoteric names are SYSDA, SYSALLDA, and SCRATCH.</td>
</tr>
<tr>
<td>Primary quantity</td>
<td>Specify the number of cylinders to be used for the output data set allocation.</td>
</tr>
<tr>
<td>Secondary quantity</td>
<td>Specify the number of cylinders to be used for the output data set allocation.</td>
</tr>
<tr>
<td>Block size</td>
<td>Specify the DASD block size to be used for the output data set allocation.</td>
</tr>
<tr>
<td>SMS Mgmt class</td>
<td>Specify the SMS Management class to be used for this output data set allocation. This field is not required unless your installation requires SMS to be used.</td>
</tr>
<tr>
<td>SMS Stg class</td>
<td>Specify the SMS Storage class to be used for this output data set allocation. This field is not required unless your installation requires SMS to be used.</td>
</tr>
<tr>
<td>SMS Data class</td>
<td>Specify the SMS Data class to be used for this output data set allocation. This field is not required unless your installation requires SMS to be used.</td>
</tr>
</tbody>
</table>

12 In the choice entry field of the Confirm Changes pop-up panel, type 1, Accept changes, and press Enter.

The Command Sets panel (Figure 86 on page 140) is displayed. This panel lets you name the command set and enter title information describing the command set.

Figure 86: Sample Command Sets panel—naming the DEQUEUE

<table>
<thead>
<tr>
<th>Member</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>DEQUEUE</strong></td>
</tr>
</tbody>
</table>

The Confirm Changes pop-up panel is displayed.

c Press END.

d Press Enter.

The DEQUEUE Output Data Set Options, Page 5 of 5 pop-up panel (Figure 84 on page 138) is displayed.
13 (optional) Name the command set and add a description by performing the following steps:

a (optional) Type the name of the command set in the Member field.

If you name the command set, fields on the following pop-up panel are populated.

b (optional) Type a description in the Title field, and press END.

The Confirm Save pop-up panel is displayed.

14 Confirm that you want to create and save a new member by performing the following steps:

a If you did not specify the name on the previous pop-up panel, type a member name in the Create new member field.

b If it is not already displayed, type 2 in the choice entry field.

If you named the command set on the command sets pop-up panel, a 2 is displayed in the choice entry field and the member name is carried forward to this pop-up panel.

c Press Enter.

The Member List panel (Figure 87 on page 141) is displayed.

Figure 87: Member List panel

15 View the command set and edit it, if necessary, by performing the following steps:

a Type E in the Act field.
From the Member List panel, you can edit and/or execute the member that you just created. You can also select the member for update from the Member List panel and change the options and defaults on the respective pop-up panels by using the Message Advisor ISPF interface.

b Press Enter.

The new command set (Figure 88 on page 142) is displayed.

This panel shows you the command set built with the preceding panels and pop-up panels selecting a single destination on the DEQUEUE Processing Options pop-up panel. You can edit this command set on this panel and save the changes. You can also select the command set from the Member List panel and change the command set by using the Message Advisor ISPF interface.

Figure 88: Sample Command Set panel—dequeueing messages from multiple destinations

16 Review the command set and edit as needed.

17 Press END.

The Member List panel is displayed.

18 To execute the command set, type Q in the Act field of the Member List panel and press Enter.

The Confirm Execute pop-up panel is displayed.

19 If 1 is not already displayed in this field, confirm execution by typing 1 in the choice entry field of the Confirm Execute pop-up panel and pressing Enter.

Message Advisor executes the request and then displays several status panels that indicate the status of the DEQUEUE request that you just executed. The Waiting pop-up panel, which is the first in a series of status and selection list panels, is displayed.
When the Waiting pop-up panel is first displayed and how often it is displayed are determined by the Session Control option settings. For more information about setting these options, see “Session Control” on page 45.

The Waiting pop-up panel remains displayed while the dequeue runs. You do not have to press any keys or type any commands while this pop-up panel is displayed; it automatically scrolls to the Request Status pop-up panel (Figure 89 on page 143).

**Figure 89: Request Status panel**

20 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. You can view an explanation about any message on the panel by placing the cursor on the message and by pressing F4 (PROMPT).

If this pop-up panel shows a condition code other than 00, review the messages and reports from the Browse Results pop-up panel (Figure 90 on page 144) to determine the problem.

21 Press Enter.

The Request Results pop-up panel is displayed.

22 To view the DEQUEUE report, type 1 in the choice entry field on the Browse Results pop-up panel and press Enter.
The Browse Results pop-up panel (Figure 90 on page 144) is displayed.

Figure 90: Browse Results panel

---

23 Review the messages by performing the following steps:

a  Ensure that the DEQUEUE status code is 00.

   If this pop-up panel shows a status code other than 00, see the BMC Documentation Center for an explanation about the error codes.

b  Press END.

   The Primary Menu is displayed.

   This step completes the sample task of dequeueing all messages from one destination.
Unloading messages

This chapter provides information about how to use the Message Advisor UNLOAD command. The features of the command, usage tips, and instructions for unloading messages are presented in this chapter.

Overview

With Message Advisor, you can unload messages from the message queues of an active IMS system. In effect, you are copying the messages to a sequential data set; the messages are not dequeued. After unloading messages, you can requeue them to another IMS system. You can also use the unloaded messages to create a production workload and requeue the messages to a test system.

Note

A similar function can be achieved by extracting messages from IMS logs. This is done by issuing a REQUEUE MODE=EXTRACT command. For more information about the REQUEUE command, see “Requeueing messages” on page 161 and the Message Advisor for IMS Reference Manual.

To simultaneously unload and dequeue messages in the same command set, you should use the DEQUEUE command feature, MODE=UNLOAD_DEQUEUE. This feature ensures that only the messages that are unloaded will be dequeued.

The UNLOAD command lets you perform the following tasks:

- Unload messages that meet your selection criteria.

- Select or reject messages based on the following criteria:
  - Date and time ranges
  - Destinations (with masking allowed)
  - LU names (with masking allowed)
  - Origin (with masking allowed)
— Destination type
— Message type (queue number)
— Additional types of criteria (see “Unloading messages command set” on page 147)

You can use the unloaded messages in the following situations:

■ Unload a set of messages, dequeue them from one IMS system, and requeue them to the same or another IMS system.

  Note
  BMC Software recommends that you use the DEQUEUE command feature, MODE=UNLOAD_DEQUEUE, whenever messages are to be both unloaded and dequeued.

■ Unload a production work load and requeue it to a test system. This capability is useful in quality assurance and performance testing.

If messages are queued to a multiple system coupling (MSC) link partner that is inoperative, you can use Message Advisor to unload and dequeue these messages. By using the unloaded messages, you can requeue the messages when the MSC partner is operative. This function is valid for APPC and OTMA.

For more information about the UNLOAD command, subcommands, keywords, and parameters, see the Message Advisor for IMS Reference Manual.

  Note
  All sample command sets in this chapter are shown with the option of including the default values. For information about how to create command sets without the defaults being shown, see “Session Control” on page 45.

Instructions for unloading messages

This section includes information about preliminary operational tasks you must perform before unloading messages and instructions about how to unload messages.

<table>
<thead>
<tr>
<th>Task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing to unload messages</td>
<td>“Before unloading messages” on page 147</td>
</tr>
<tr>
<td>Unloading messages: command set</td>
<td>“Unloading messages command set” on page 147</td>
</tr>
</tbody>
</table>
Before unloading messages

Before unloading messages, perform the following tasks:

- Bring up the Message Advisor Server by submitting the MAQCNTL member QMR#STRT. If you have placed this member in your PROCLIB, issue an MVS START command.

- Ensure that you have started the VTAM APPLIDs for the Message Advisor Server and user sessions by issuing a /V NET, ID=xxxxxxxx,ACT command, where xxxxxxxxx represents a member name of SYS1.VTAMLST or its equivalent. This member contains the definition of the VTAM APPLIDs for the Message Advisor Server and user sessions.

- If you access the Message Advisor Server frequently, let it run continuously; if you do not, bring it up only when needed. BMC Software recommends Message Advisor Servers to be active always.

Unloading messages command set

This example shows how to build and execute an UNLOAD command set that unloads messages from multiple destinations.

For information about building the command set request library and creating command set members, see “Building and executing a command set” on page 73.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

To unload a message command set

1. On the Message Advisor Primary Menu panel, perform the following steps:
   a. Type 1 in the choice entry field.
   b. Type a valid library name in the Request library field, and press Enter.

      The Member List panel is displayed.

2. Add a new member by typing A in the Command area of the Member List panel.

    The Member List panel lets you add a new member or to select an existing member for update. After the command set is built and saved, you can also execute the command set from this panel.
3. Press **Enter**.

The Insert Command Set pop-up panel is displayed. This pop-up panel lets you select one of the Message Advisor base command sets.

4. Select the UNLOAD command set by performing the following steps:

   a. Type **3** in the choice entry field of the Insert Command Set pop-up panel.

   b. Press **Enter**.

   The UNLOAD Command Set pop-up panel (**Figure 91 on page 148**) is displayed.

   **Figure 91: UNLOAD Command Set panel**

   File  Options  Samples  Session  Display  Help
   C  T  Ac
   Command ===>
   Description _________________________________________________________
   Select one of the following. Then press Enter.
   1. Processing options  - Specify what this unload should do
   2. Misc. options       - Report, rate, force, exit options
   3. Interval selection  - Restrict search based on time
   4. Message selection   - Select or reject by dest, queue, etc.
   5. Alternate output    - Output file specifications

   The UNLOAD Command Set pop-up panel lets you access the options listed on the pop-up panel. This example goes through the pop-up panels sequentially. To go directly to a pop-up panel, type the number of the selection and press **Enter**.

   **Note**

   Each pop-up panel tells you where you are in the series by displaying **Page x of y** in the upper right corner of the panel.

5. Type **1** in the choice entry field, and press **Enter**.

   The UNLOAD Processing Options, Page 1 of 5 pop-up panel (**Figure 92 on page 148**) is displayed.

   This example shows how to unload messages for a specified destination.

   **Figure 92: UNLOAD Processing Options panel, Page 1 of 5**
6 Type the IMSID in the **IMSID** field, and press **Enter**.

The UNLOAD Misc. Options, Page 2 of 5 pop-up panel ([Figure 93 on page 149](#)) is displayed.

**Figure 93: UNLOAD Misc. Options panel, Page 2 of 5**

7 Type the option number in the **Conversational message unload option** field that indicates whether any active or held conversational messages should be unloaded. Possible values are:

- **ALL**— *Both* conversational and non-conversational messages may be unloaded.
- **NONE**—Conversational messages will not be unloaded. This value is the default value.
- **ONLY**—*Only* conversational messages may be unloaded (non-conversational messages are not unloaded).

Regardless of the option chosen for this field, only messages which match the other selection criteria will be unloaded.
The Summary and Detail reports provide a summary of the messages unloaded and details of the messages unloaded by destination. For information about reports, see “Message Advisor reports” on page 351.

8 Select the appropriate options on the UNLOAD Misc. Options pop-up panel by performing the following steps:

a Select to print the Summary report and Destination report of messages unloaded.

b Type 2 in the Force option field.

Note
To unload an active destination, you must specify the Force option as 2. For a list of destinations that must be stopped before they can be unloaded and for a list of restricted destinations that are not valid with the Force option, see “Restrictions” on page 124.

c Press Enter.

The UNLOAD Interval Selection, Page 3 of 5 pop-up panel (Figure 94 on page 150) is displayed.

Figure 94: UNLOAD Interval Selection panel, Page 3 of 5

9 Determine whether to define time intervals to restrict message selection.

For this example, leave this pop-up panel blank.

10 Press Enter.
The UNLOAD Message Selection, Page 4 of 5 pop-up panel (Figure 95 on page 151) is displayed.

Figure 95: UNLOAD Message Selection panel, Page 4 of 5

On this panel, you can specify multiple destinations, origins, queues, and destination types by using the SELECT and REJECT subcommands.

11 Define the UNLOAD message selection criteria by performing the following steps:

a  Type S or I in the **Act** field.

b  In the **Function** field, type **SELECT** or **REJECT**.

c  In the **Label** field, type a user-defined name or label (up to eight characters) for the statement.

   The default labels will be SEL00001 and REJ00001 for the first SELECT and REJECT statements with the number incrementing for each type of statement.

d  In the **Destination** field, type a destination valid for your site.

e  In the **Destination type** field, type a valid destination type.

   __Note__

   Masking is allowed in the **Destination** and **Origin** fields: ? replaces one character in a multi-character string; * replaces the rest of the string.

f  Press **Enter**.
The UNLOAD Message Keyword Selection pop-up panel (Figure 96 on page 152) is displayed.

Figure 96: UNLOAD Message Keyword Selection panel

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>UNLOAD Message Keyword Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label ________ Subcommand SELECT</td>
<td></td>
</tr>
<tr>
<td>Type one or more action codes, if desired.</td>
<td></td>
</tr>
<tr>
<td>S=Edit value D=Set default value</td>
<td></td>
</tr>
<tr>
<td>Act</td>
<td>Keyword</td>
</tr>
<tr>
<td>DESTination= Destinations or masks</td>
<td></td>
</tr>
<tr>
<td>DRRN= Device relative record number</td>
<td></td>
</tr>
<tr>
<td>DESType= ALL Destination type</td>
<td></td>
</tr>
<tr>
<td>RCNT= Remote CNTs or masks</td>
<td></td>
</tr>
<tr>
<td>PSB= Transactions associated with PSBs</td>
<td></td>
</tr>
<tr>
<td>DBD= Transactions associated with DBDs</td>
<td></td>
</tr>
<tr>
<td>NODENAME= VTAM nodenames or masks</td>
<td></td>
</tr>
<tr>
<td>LUname= LU names or masks</td>
<td></td>
</tr>
<tr>
<td>USERID= Userids or masks</td>
<td></td>
</tr>
<tr>
<td>MFSNAME= MFS names or masks</td>
<td></td>
</tr>
<tr>
<td>ORIGIN= Origins or masks</td>
<td></td>
</tr>
<tr>
<td>PIMS= IMSIDs or masks</td>
<td></td>
</tr>
<tr>
<td>OIMS= IMSIDs or masks</td>
<td></td>
</tr>
</tbody>
</table>

Perform one of the following actions:

- To access a pop-up panel so you can edit the value for each keyword that you want to specify on the SELECT or REJECT statement, type S in the Act field. To exit the pop-up panel, press END.

- To clear the value for each keyword that you want to specify on the SELECT or REJECT statement, type D in the Act field.

- To scroll through the list of available keywords, press F8.

Press END.

The UNLOAD Message Selection, Page 4 of 5 pop-up panel (Figure 95 on page 151) is displayed.

Press Enter.

The UNLOAD Output Data Set Options, Page 5 of 5 pop-up panel (Figure 97 on page 152) is displayed.

Figure 97: UNLOAD Output Data Set Options panel, Page 5 of 5

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>UNLOAD Output Data Set Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select (type a ‘/’) to see more allocation options.</td>
<td></td>
</tr>
<tr>
<td>- Output file. Data set name</td>
<td></td>
</tr>
</tbody>
</table>
12 Define the UNLOAD output data set options, if necessary, by performing the following steps:

a  Type a slash (/) in the Output file field, and press Enter.

The UNLOAD Data Set Allocation Options pop-up panel (Figure 98 on page 153) is displayed.

Figure 98: UNLOAD Data Set Allocation Options panel

b  Edit the fields (Table 14 on page 153), as necessary.

Table 14: Fields available on the UNLOAD data set allocation options panel

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data set name</td>
<td>Type the name of the output data set being allocated. If you are specifying a DDname, leave this field blank.</td>
</tr>
<tr>
<td>or DDname</td>
<td>Type the DDname which indicates a pre-allocated output data set is to be used. If you are specifying a DDname, leave all other fields blank.</td>
</tr>
<tr>
<td>Field Name</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Disposition</td>
<td>Type the option number in the selection field to indicate the disposition of the output data set being allocated. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>■ <strong>New</strong>—A new output data set will be allocated.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>Mod</strong>—If the named output data set exists, it will be used. If it does not exist, a new output data set will be allocated.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>Old</strong>—The named output data set already exists.</td>
</tr>
<tr>
<td></td>
<td>The default value for this field is 3.</td>
</tr>
<tr>
<td>Append</td>
<td>Type the appropriate value to indicate whether data is to be appended to the output data set or not. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>■ <strong>YES</strong>—Append new data to the output data set.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>NO</strong>—Replace, or overwrite, the old data with the new data in the output data set.</td>
</tr>
<tr>
<td></td>
<td>If the Disposition field value is 2. Mod, the default value for this field is YES. If the Disposition field value is 3. Old, the default value for this field is NO.</td>
</tr>
<tr>
<td>Model after</td>
<td>Specify the name of the existing data set whose attributes you want to copy for the output data set being allocated.</td>
</tr>
<tr>
<td>Volume serial</td>
<td>Specify the DASD volume serial (VOLSER) where this output data set will be allocated.</td>
</tr>
<tr>
<td>Specify multiple volumes</td>
<td>Type a slash (/) in this field and press <strong>Enter</strong> to access the Volume List pop-up panel where you specify multiple DASD volume serials (VOLSERs) for the data set. Press <strong>END</strong> to return to the UNLOAD Data Set Allocation Options pop-up panel.</td>
</tr>
<tr>
<td>Generic unit</td>
<td>Type the generic unit name to be used for data set allocation. Generic names (also referred to as esoteric) are given to groups, or pools of DASD volumes. Some common generic/esoteric names are SYSDA, SYSALLDA, and SCRATCH.</td>
</tr>
<tr>
<td>Primary quantity</td>
<td>Specify the number of cylinders to be used for the output data set allocation.</td>
</tr>
<tr>
<td>Secondary quantity</td>
<td>Specify the number of cylinders to be used for the output data set allocation.</td>
</tr>
<tr>
<td>Block size</td>
<td>Specify the DASD block size to be used for the output data set allocation.</td>
</tr>
<tr>
<td>SMS Mgmt class</td>
<td>Specify the SMS Management class to be used for this output data set allocation. This field is <strong>not</strong> required unless your installation requires SMS to be used.</td>
</tr>
<tr>
<td>SMS Stg class</td>
<td>Specify the SMS Storage class to be used for this output data set allocation. This field is <strong>not</strong> required unless your installation requires SMS to be used.</td>
</tr>
</tbody>
</table>
### Field Name | Description
---|---
SMS Data class | Specify the SMS Data class to be used for this output data set allocation. This field is *not* required unless your installation requires SMS to be used.

**c** Press **END**.

The UNLOAD Output Data Set Options, Page 5 of 5 pop-up panel (Figure 97 on page 152) is displayed.

**d** Press **Enter**.

The Confirm Changes pop-up panel is displayed.

13 In the choice entry field of the Confirm Changes pop-up panel, type **1**, Accept changes, and press **Enter**.

The Command Sets panel (Figure 101 on page 156) is displayed.

**Figure 99: Command Sets panel—naming the UNLOAD command**

```
<table>
<thead>
<tr>
<th>File</th>
<th>Options</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ====&gt;</td>
<td>Command Sets - bmcnode.MAQ.REQUEST</td>
<td>Scroll ====&gt;</td>
<td>PAGE</td>
<td></td>
</tr>
</tbody>
</table>

Member   __________ Title. . ______________________________________________________________________

Type one or more action codes. Then press Enter.
S=Select for update   I=Insert   D=Delete

Action  Command Set Description
____   __________________________ TOP OF DATA __________________________
____   UNLOAD
```

14 *(optional)* Name the command set and add a description.

**a** *(optional)* Type the name of the command set in the **Member** field.

If you name the command set, fields on the following pop-up panels are populated.

**b** *(optional)* Type a description in the **Title** field, and press **END**.

The Confirm Save pop-up panel is displayed.
15 Confirm that you want to create and save a new member by performing the following steps:

a If you did not type the name on the previous pop-up panel, type a member name in the **Create new member** field.

b If it is not already displayed, type 2 in the choice entry field.

If you named the command set on the command sets pop-up panel, a 2 is displayed in the choice entry field and the member name is carried forward to this pop-up panel.

c Press **Enter**.

The Member List panel (Figure 100 on page 156) is displayed.

**Figure 100: Member List panel**

<table>
<thead>
<tr>
<th>Act</th>
<th>Name</th>
<th>Prompt</th>
<th>Size</th>
<th>Created</th>
<th>Changed</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>SAMPUL</td>
<td>______</td>
<td>3</td>
<td>2001/08/23</td>
<td>2001/08/23 14:59:12</td>
<td>USERID1</td>
</tr>
<tr>
<td>_</td>
<td>UNL0003</td>
<td>______</td>
<td>7</td>
<td>2001/05/30</td>
<td>2001/05/30 12:27:52</td>
<td>USERID2</td>
</tr>
<tr>
<td>_</td>
<td>UNL0015</td>
<td>______</td>
<td>4</td>
<td>2001/06/04</td>
<td>2001/06/04 11:45:36</td>
<td>USERID2</td>
</tr>
<tr>
<td><strong>End</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16 View the command set and, if necessary, edit it by performing the following steps:

a Type **E** in the **Act** field.

From the Member List panel, you can edit and/or execute the member that you just created. You can also select the member for update from the Member List panel and change the options and defaults on the respective pop-up panels by using the Message Advisor ISPF interface.

b Press **Enter**.

The new command set (Figure 101 on page 156) is displayed.

**Figure 101: Command Set—unloading messages from multiple destinations**

<table>
<thead>
<tr>
<th>EDIT</th>
<th>bmcnode.MAQ.REQUEST(SAMPUL) - 01.00</th>
<th>Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>00001</td>
<td>UNLOAD IMSID=R61P,FORCE=YES</td>
<td>000072</td>
</tr>
<tr>
<td>000010</td>
<td>SELECT DESTINATION=CAT*,DESTYPE=ALL</td>
<td>000020</td>
</tr>
<tr>
<td>000030</td>
<td>END</td>
<td><strong>End</strong></td>
</tr>
<tr>
<td></td>
<td>****************************************** Bottom of Data ******************************************</td>
<td></td>
</tr>
</tbody>
</table>
This panel shows you the command set built with the preceding panels and pop-up panel. You can edit this command set on this panel and save the changes. You can also select the command set from the Member List panel and change the command set by using the Message Advisor ISPF interface.

17 Review the command set and edit it, if needed.

18 Press END.

The Member List panel is displayed again.

19 Use the IMS /STOP command to stop all nodes and transactions to be unloaded.

Note
You can issue the IMS /STOP command by using the Message Advisor and IMS Commands panel (option 6 on the Message Advisor Primary Menu).

20 To execute the command set, type Q in the Act field of the Member List panel and press Enter.

The Confirm Execute pop-up panel is displayed.

21 If 1 is not already displayed in this field, confirm execution by typing 1 in the choice entry field of the Confirm Execute pop-up panel and pressing Enter.

Message Advisor executes the request and then displays several status panels that indicate the status of the UNLOAD request that you just executed. The Waiting pop-up panel, which is the first in a series of status and selection list panels, is displayed.

Note
When the Waiting pop-up panel is first displayed and how often it is displayed are determined by the Session Control option settings. For more information about setting these options, see “Session Control” on page 45.

The Waiting pop-up panel remains displayed while the unload runs. You do not have to press any keys or type any commands while this pop-up panel is
displayed; it automatically scrolls to the Request Status pop-up panel (Figure 102 on page 158) when the unload is completed.

This pop-up panel shows the status of the unload process by displaying any significant messages. You can scroll up and down through the messages with the scroll keys.

**Figure 102: Sample Request Status panel**

<table>
<thead>
<tr>
<th>Command</th>
<th>Request Status</th>
<th>Scroll</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC43868 Request complete. Press Enter for report options. Use the scroll actions/keys to view the messages. Then press Enter to continue.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request for Server QJER: 11:50:51 bmcnode.MAQ.REQUEST(SAMPUL) Highest condition code: 00 Line 001 of 003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant messages: BMC43077I UNLOAD IN PROGRESS FOR ROHPXM (TASK 3) BMC43227I USING UNLOAD DDN=SYS00003 DSN=bmcnode.MAQ.OUTPUT IMSID=R61P BMC43076I UNLOAD FOR ROHPXM (TASK 3) IMS(R61P) ENDED, RC=00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. You can view an explanation about any message on the panel by placing the cursor on the message and pressing **PF4** (PROMPT).

If this pop-up panel shows a condition code other than **00**, review the messages and reports from the Browse Results pop-up panel to determine the problem.

23. Press **Enter**.

The Request Results pop-up panel is displayed.

24. To view the UNLOAD report, type **1** in the choice entry field of the Browse Results pop-up panel, and press **Enter**.

The Browse Results report (Figure 103 on page 158) is displayed.

**Figure 103: Sample Browse Results panel—UNLOAD Statistics**
25 Review all the messages and ensure that the UNLOAD status code is 00.

If this pop-up panel shows a status code other than 00, see the BMC Documentation Center for an explanation about the error.

26 Press END until the Primary Menu is displayed.

This step completes the sample task of unloading selected messages from multiple destinations.
Requeueing messages

This chapter provides information about how to use the Message Advisor REQUEUE command. The features of the command, considerations and restrictions related to requeueing messages, usage tips, and instructions for requeueing messages are presented in this chapter.

Overview

Message Advisor lets you requeue messages in a variety of situations, not just when messages have been lost. You can use the REQUEUE command along with the UNLOAD and DEQUEUE commands to unload messages queued to a specific LTERM destination and later requeue them to the same or another LTERM on the same or a different IMS system.

You can requeue IMS messages by using input from the OLDS, the SLDS, data sets that have been unloaded from the message queue, data sets that have been extracted from the OLDS or the SLDS, or scrap files.

The examples in this chapter describe the following types of requeueing:

- Cold start after a normal IMS shutdown (DUMPQ or PURGE).
- Cold start after an abnormal IMS shutdown and emergency restart (/ERE) failure.

The REQUEUE command lets you perform the following tasks:

- Automatically select the checkpoint used for requeueing if Message Advisor Checkpoint Tracking is active.
- Override the selected checkpoint by specifying a specific SNAPQ, PURGE, or DUMPQ checkpoint.
- Dynamically allocate log data set names obtained from RECON data sets.
Note

If any SLDS data set in the RECON has the error indicator on and the RECON contains a secondary SLDS, Message Advisor will attempt to use the secondary SLDS if its time stamps are valid.

- Override the log data set names by specifying an input data set name or the UNIT and VOLSER of an uncataloged system log data set (SLDS).

- Select or reject messages based on the following criteria:
  - Date and time ranges
  - Destinations (with masking allowed)
  - LU names (with masking allowed)
  - Origin (with masking allowed)
  - Destination type
  - Type of message (queue number)

- *(optional)* Re-establish conversations.

- *(optional)* Request requeueing of remote system messages.

Requeue user exit

Message Advisor provides a user exit that lets you specify and override reject and select criteria on a REQUEUE command set as a final step during execution. It also lets you specify select and reject criteria not available on the REQUEUE command.

The following examples illustrate how this user exit can be used:

- You can select specific locations from a masked location that has been rejected.

- You can select or reject messages based on user ID or record type, such as 01 or 03 log records.

- You can select or reject messages based on whether the message is destined for a long or short message queue.

To use the Message Advisor user exit, you must assemble and link-edit it into the MAQLIB library as member QMREXIT0 or any APF-authorized library concatenated in the STEPLIB. MAQSAMP contains several sample user exits in members named
QMREXITx. MAQCNTL contains the JCL job stream used for assembly in member name QMR#USR.

Requeue processing modes

Message Advisor provides requeue processing modes that allow you to perform the following tasks:

- Requeue messages to active message queues
- Validate (test) that a requeue can be performed and count the messages that will be requeued
- Extract selected messages to a data set for later requeuing

Requeue mode

If MODE=REQUEUE is specified, messages from the INPUT data set are requeued to an active IMS system.

Validate mode

If MODE=VALIDATE is specified, messages from the INPUT data set are tested and counted against an active IMS system, but the messages are not inserted in the IMS system.

Extract mode

If MODE=EXTRACT is specified, messages from the INPUT data set are put in an EXTRACT file. For this method of processing, an IMS system does not need to be active.

If MODE=REQUEUE_EXTRACT is specified, messages from the INPUT data set are requeued to an active IMS system and put in an EXTRACT file. This EXTRACT file can be used to requeue the extracted messages to another IMS system, or the messages can be used for various types of testing.

Note

If IMS is not active, Message Advisor will use the COPY1 RECON data set that was active the last time Message Advisor and IMS were active.

Figure 104: Sample JCL for MODE=EXTRACT

*TITLE=SAMPLE LOG EXTRACT REQUEST
REQUEUE IMSID=yyyy,MODE=EXTRACT,
TYPE=REPROCESS
Automatic requeues

You can customize Message Advisor to automatically initiate a requeue after a normal IMS cold start, COLDCOMM, or COLDSYS. Used with Message Advisor’s requeue prompt options, this feature can perform the following tasks:

- Execute an MVS command after a normal IMS cold start. This command can
  - Initiate a requeue job or task
  - Execute operator commands
- Change the automatically selected checkpoint Message Advisor uses for the requeue.
- List available checkpoints that Message Advisor can use to perform the requeue.
- Cancel the requeue completely.

BMC recommends that you use the automatic requeue feature only with `REQ_PROMPT=YES`. When `REQ_PROMPT=YES` is specified, a WTOR will be issued for confirmation and the requeue will wait for a response to the WTOR. Although the WTOR could slow the IMS cold start slightly if the operator does not respond to this prompt in a timely manner, the WTOR helps ensure accurate requeues.

---

**WARNING**

If the automatic requeue feature is activated and `REQ_PROMPT=NO` is specified, Message Advisor will initiate a requeue with no operator supervision. Depending on the reason for the cold start, the checkpoint Message Advisor automatically selects may not be the checkpoint you need to accurately requeue your IMS messages. This condition may occur if you have issued several starts and stops in quick succession.

For more information about the REQUEUE command, subcommands, keywords, and parameters, see the *Message Advisor for IMS Reference Manual*.

Processing rate

Message Advisor runs at the lowest ITASK dispatching priority to prevent Message Advisor from monopolizing the IMS message queue buffers or task control block.
(TCB). If additional tuning is necessary, use the RATE parameter to slow down or speed up processing.

The RATE parameter specifies the number of messages or destinations to be processed per minute. The default is zero, which means that no throttling is necessary. You can specify a rate other than zero when customizing IMS options. If you set a nonzero rate, this will be the rate at which all Message Advisor commands run; and it cannot be overridden at command execution.

If you want to be able to set a rate for one Message Advisor request and then change the rate for another request, leave the default_RATE=0_. You can specify a specific rate each time you execute a Message Advisor command set.

A higher rate number instructs Message Advisor to process at a faster rate. A lower number instructs Message Advisor to process at a slower rate. The higher rate might be especially desirable after an IMS cold start. However, in other cases, a rapid rate could degrade overall IMS performance.

---

**Note**

If you specify too low a number, Message Advisor may slow to an unacceptable level.

---

For more information about the RATE parameter, see the Message Advisor for IMS Reference Manual.

---

**Considerations and restrictions**

This section describes considerations for, and restrictions to, using the REQUEUE command.

**Conversational messages**

The following considerations and restrictions apply when requeueing conversational messages:

- Only one transaction can be on the queue at a time for a given conversation ID for a given user or LTERM.

- It is not possible to "queue up" multiple instances of a conversational transaction to be executed on behalf of a user or an LTERM.
You can execute a `REQUEUE TYPE=COLD, MODE=EXTRACT` from the DUMPQ to an extract file, and then execute a `REQUEUE TYPE=FILE` to requeue active/scheduled/held conversations.

For REQueue TYPE=EREfail, Message Advisor will establish conversations in the same state as they existed at the Abend point after the selected checkpoint, unless CONV=NONE is specified.

For REQueue TYPE=FILE, Message Advisor will establish conversations in the same state as they existed when the conversations were Unloaded or Extracted unless CONV=NONE is specified. Because IMS allows only one PENDING or SCHEDULED conversation for a given LTERM/USER at one time, Message Advisor may be unable to Requeue and establish some conversations without manual intervention to /EXIT or /HOLD any existing conversational work for a given LTERM/USER.

**/RELEASE commands**

Message Advisor requeue processing of conversational messages assigns new conversational control blocks (CCB) to the requeued conversations. Message Advisor provides an enhancement to the IMS /RELEASE command.

Table 15 on page 166 lists the added versions of the command.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/RELEASE CONVERSATION *</td>
<td>Releases and returns the last held conversation to the IMS user</td>
</tr>
<tr>
<td>/RELEASE CONVERSATION?</td>
<td>Returns a list of the held conversations and their associated CCB number so that you can release specific conversations</td>
</tr>
</tbody>
</table>

**DELTA IMS VIRTUAL TERMINAL**

If you are running BMC Software’s DELTA IMS VIRTUAL TERMINAL, held conversations are exited after being requeued if the held conversation exit interval time period is exceeded. BMC Software recommends that you specify `TIMESTAMP=CURRENT` on the REQUEUE command or change the Held conversation exit interval option in DELTA IMS VIRTUAL TERMINAL to 0 or blank. This action tells DELTA IMS VIRTUAL TERMINAL not to exit held conversations.

For more information about the DELTA IMS VIRTUAL TERMINAL held conversation exit interval option, see "Setting IMSID Options for DELTA IMS VIRTUAL TERMINAL" in the **DELTA IMS VIRTUAL TERMINAL User Guide**.
**CHANGE subcommand restriction**

The CHANGE subcommand is valid for most destinations, except for:

- System CNTs
- DFS-prefixed CNTs
- WTOR

Use the CHANGE subcommand to change other attributes of messages, such as MSFNAME and SYSID.

**Virtual LTERM creation feature**

If you use Message Advisor with the BMC Software products DELTA IMS VIRTUAL TERMINAL or EXTENDED TERMINAL ASSIST PLUS or with the IBM product EXTENDED TERMINAL OPTION (ETO), you can use the Message Advisor LTERM creation feature to dynamically create LTERMs requested by requeue tasks.

This feature increases the accuracy of requeues and creates only virtual LTERMs for which messages are to be requeued.

---

**Note**

If you disable the virtual LTERM creation feature, you can requeue messages to LTERMs that have already been created. You can requeue messages to LTERMs that do not exist only if these LTERMs appear in the VPRINTER, unsolicited output, or remote TSS table of the applicable BMC Software product.

The VIRTUAL_CREATE keyword on the CUSTOMIZEIMS_OPTIONS subcommand is used to set the status of this feature.

**Support for uncataloged SLDS name**

To allow Message Advisor requeues with uncataloged SLDS without overrides, verify that the RECON control record specifies the proper device type for the TAPEUNIT and/or DASDUNIT parameters. If not, use the CHANGE.RECON command to make the appropriate corrections for future PRISLDS records. You can also use the CHANGE.PRILOG SLDS command to make any necessary corrections to existing PRISLDS records that you want to use for requeue.

If the SLDS name specified in the RECON data sets is not cataloged, Message Advisor will use the UNIT and VOLSER information in the RECON data sets to find...
the uncataloged SLDS. When performing a requeue, Message Advisor first searches
the catalog for the SLDS name specified in the RECON data sets. If the data set name
is not found, dynamic allocation fails; and Message Advisor tries to find the data set
by using the UNIT and VOLSER information specified in the RECON data sets.

To temporarily execute Message Advisor requeues with an uncataloged SLDS
because of incorrect information in the RECON data sets, specify the data set name,
UNIT, and VOLSER of the SLDS on an INPUT subcommand, by using one UNIT
keyword and one or more VOLSER keywords.

You can override the information in the RECON data sets by specifying the data set
name, UNIT, and VOLSER for an uncataloged SLDS on an INPUT subcommand.

Requeue of nonconversational messages

Message Advisor is used to requeue nonconversational messages that were created
with different versions of IMS.

For more information, see “Requeue between IMS versions” on page 25.

Multiple input subcommands

To enhance the processing of INPUT statements, Message Advisor is used to specify
an unlimited number of INPUT subcommands within the same command set.

Use of multiple INPUT subcommands should be guided by the following
considerations:

- If you specify \texttt{TYPE=FILE}, the input data set file type must be EXTRACT, SCRAP,
or UNLOAD.

- If you specify any parameter \texttt{except FILE} with the keyword \texttt{TYPE} and use
multiple SLDS, the SLDS must be placed in the order of their time and date of
creation, from the oldest to the newest. Also, the command set must include all
SLDS created within the specified time range.

- You cannot use duplicate data sets.

- If you specify an unusually large number of INPUT subcommands, ensure that
the \texttt{SPILL}, \texttt{SCRAP}, \texttt{EXTRACT}, and \texttt{REGION} values are high enough to handle the
volume of data.
When requeueing messages, you can ensure better performance by specifying the REQUEUE command INCORE keyword as YES or FIXED. The INCORE=YES option causes the log records to be stored in main memory instead of on spill files. When specifying this parameter as YES, make sure that no working set size limit exists for the performance group where the job is executing.

**Note**
The INCORE=YES option uses main memory in direct proportion to the amount of data being processed. If a large amount of data is requeued, you can avoid a possible out-of-storage condition by specifying INCORE=NO.

The INCORE=FIXED option causes log records to be page-fixed in main storage. Page-fixing main storage can have a significant impact on the performance of other system applications. When specifying this parameter as FIXED, make sure that the need to perform a REQUEUE outweighs the performance impact to other system applications.

---

### Requeue after an /ERE failure

When IMS abends and the emergency restart (/ERE) fails, you are forced to perform a cold start. All queued messages are discarded. However, with Message Advisor you can recover all of your messages.

The Message Advisor REQUEUE command requeues messages from the IMS logs. By using the Message Advisor Checkpoint Tracking data sets, Message Advisor determines the last DUMPQ, PURGE, or SNAPQ checkpoint and uses these checkpoints as reference points; and requeues the messages from the SLDS.

You must close and archive the IMS logs when an /ERE has failed. An /ERE occurs when the IMS logs are closed from the previous failure. A cold start after an /ERE failure will leave the IMS logs unusable by Message Advisor until DFSULTRO has been used to close them.

**WARNING**
After cold-starting your IMS system, BMC Software recommends that you do not issue the /STA DC command or start any MPP regions until the requeue is complete.
Restart of a failed requeue

If you restart the requeue process, you may duplicate messages. To ensure that duplicate messages are not posted to the message queues, BMC Software recommends that you perform the following tasks:

- Shut down IMS by issuing a /CHE FREEZE command.
- Restart IMS with a cold start to clear the message queues before rerunning the requeue job.

Usage tips

This section describes usage tips when using the REQUEUE command to perform the following tasks:

- Requeueing from a specific checkpoint
- Requeueing from one system to another
- Reprocessing messages for requeue
- Responding to a requeue checkpoint prompt

Requeue from a SNAPQ checkpoint

Message Advisor is used to select any checkpoint from which to requeue. However, because `REQUEUE TYPE=COLD` requires a DUMPQ shutdown checkpoint, it cannot be used to requeue from a SNAPQ checkpoint.

Although simple checkpoints can be used in conjunction with an interval subcommand, BMC Software recommends by using a SNAPQ checkpoint if a DUMPQ checkpoint cannot be used or is not available.

To use a SNAPQ checkpoint, you must specify `REQUEUE TYPE=EREFAIL` even if the previous IMS system did not have an emergency restart failure. The checkpoint can be entered at the WTOR prompt, but it is a good practice to specify the checkpoint by using the CHKPT keyword in the command set.

The processing that the `TYPE=EREFAIL` option generates is similar to `TYPE=REPROCESS` processing. The only difference is that with `TYPE=EREFAIL`, messages dequeued during the course of a SNAPQ or messages dequeued between the x'4099' and the end of file (EOF) will cancel the messages that were on the queue.
at the beginning of the checkpoint or enqueued thereafter. Therefore, only messages that remain on the queues when EOF is reached are available for requeue to IMS or to an Extract file.

Figure 105 on page 171 shows a command set for requeueing IMS transaction messages by using a SNAPQ checkpoint and an IMS Log. This command set overrides the SLDS (INPUT DSNAME=IMS.ARCHIVE.LOG), specifies a checkpoint (CHKPT=2001180/1234567), and creates an extract file (MODE=EXTRACT_REQUEUE).

Figure 105: Command set: requeueing messages by using a SNAPQ checkpoint

REQUEUE IMSID=R61P,CHKPT=2001180/1234567,MODE=EXTRACT_REQUEUE,
TYPE=EREFAIL,CONVERSATIONS=NONE,MSGTYPE=ALL,SYSMSG=YES,
TIMESTAMP=ORIGINAL,SCRAP=YES,OLDS=NO,COMPRESS=YES,
INPUT DSNAME=IMS.ARCHIVE.LOG
END

Requeue from one system to another

Message Advisor is used to requeue messages from one system to another for testing or benchmarking purposes. BMC recommends that you requeue messages to a production system only if they were originally generated on that system. This recommendation is made because destination differences between two systems can lead to unpredictable results.

If Message Advisor detects nonexistent destinations while requeueing messages that originated on a different production system, it may perform any of several actions, including creating virtual destinations or scrapping messages. If the same destination represents a different application or device on the two systems, Message Advisor cannot detect this difference and will requeue the messages. Requeueing may cause problems for the application or device.

If you requeue from one system to another, consider the following points:

- REQUEUE with no DESTYPE specified (or only DESTYPE=ALL specified) will allow a message to be queued to a different destination type than it was originally queued. The type printed on a REQUEUE report will be the type of the destination on the new system. However, if a difference in type is noted when requeueing to IMS, the text DIF will be printed on the report.

- REQUEUE with DESTYPE specified as a parameter other than ALL verifies that any destination requeued has the same type on both the log and the control region. If a destination is rejected based on the type in the log record, the type from the log record and the text LOG will be printed on the report. Otherwise, the type printed will be the type from the new system.

- When DESTYPE=DYNAMIC is used on REQUEUE, all dynamic terminals are selected or rejected. Dynamic VTAM subpools will also be treated as type DYNAMIC.
Reports will identify dynamic terminals and subpools as CNT-E (for ETO) or CNT-V (for VTF).

- **REQUEUE with DESTYPE=VSP** selects or rejects static VTAM subpool LTERMs only.

- **REQUEUE with SELECT DESTYPE=CNT** selects both STATIC, DYNAMIC, and DEADQ terminals but not MSNAME or VSPCNT LTERMs.

- **REQUEUE with REJECT DESTYPE=CNT** rejects only STATIC, DYNAMIC, or DEADQ terminals. It does not reject MSNAME or VSPCNT LTERMs.

**Note**
The REQUEUE command with a CHANGE subcommand is used to requeue messages to another system. However, be aware of SYSIDS and DESTYPE definitions.

- **REQUEUE with either the NEWSAFGROUP or NEWUSERID keywords** will now result in a regeneration of the security token found in the APPC and OTMA prefix segments.

### Reprocess messages with checkpoint and interval

Message Advisor lets you reprocess messages which have already been processed by IMS. This feature is useful in situations where an application logic error causes incorrect results. Once the logic error is corrected, the transactions processed during a specified interval can be gathered from the IMS logs. The type of processing that occurs depends on whether the CHKPT keyword and/or an INTERVAL statement are specified.

#### Reprocess messages when specifying a checkpoint but not an interval

The following processing occurs if you specify **REQUEUE TYPE=REPROCESS** and the CHKPT keyword, but you do not specify an INTERVAL statement:

The **REQUEUE TYPE=REPROCESS** option reads the appropriate log files associated with an IMS checkpoint type SNAPQ, DUMPQ or PURGE. Records are selected beginning with the x’4001’ record for the checkpoint and ending with the EOF record following the x’4099’ record. Message Advisor automatically selects the correct log files according to the CHKPT keyword. Also, the WTOR operator interface will be used to display and/or verify the correct checkpoint (the REQ_PROMPT keyword is ignored). Messages available for processing are all the messages on the queues at the time of the checkpoint plus messages enqueued following the x’4099’ record until
EOF is reached. If the checkpoint type is a SNAPQ, all messages that are enqueued during the course of the checkpoint are also processed.

**Reprocess messages without specifying a checkpoint or an interval**

If you specify `REQUEUE TYPE=REPROCESS` and you do not specify the CHKPT keyword or an INTERVAL statement, Message Advisor will select the last SNAPQ, DUMPQ, or PURGE checkpoint from the RECON data set.

**Reprocess messages when specifying a checkpoint and an interval**

If you specify `REQUEUE TYPE=REPROCESS`, the CHKPT keyword, and an INTERVAL statement, Message Advisor will requeue only messages that are queued during the interval requested. The interval may include times before, during, or after the checkpoint; however, only messages on the queues at the time of the checkpoint or that are found before EOF is read will be requeued.

**Reprocess messages when specifying an interval but not a checkpoint**

The following processing changes occur if you specify `REQUEUE TYPE=REPROCESS` and an INTERVAL statement, but you do not specify the CHKPT keyword:

- WTORs are not sent to the console to confirm checkpoint information.
- Log files are selected only on the basis of the INTERVAL parameters. (Only one INTERVAL statement should be used.)
- Messages on the queues at the **START_TIME** of the INTERVAL are not captured; only messages added to the queues during the interval time period are captured (01 and 03 records).
- The Statistics report has fewer output lines since many of the log record types are ignored.

BMC Software recommends that you specify **MODE=EXTRACT** when **REQUEUETYPE=REPROCESS** is used. The output can then be put back to the same IMS or to a test IMS system by issuing a **REQUEUE TYPE=FILE** with optional **SELECT** and/or **CHANGE** statements.
Requeue checkpoint prompt response

When a REQUEUE TYPE=COLD is initiated through a command set or through the automatic requeue feature, you will receive a BMC43298I WTOR if you specified REQ_PROMPT=YES on the Message Advisor Server Options or on the REQUEUE command set. When a REQUEUE TYPE=REPROCESS or TYPE=EREFAIL is issued, the REQ_PROMPT keyword is ignored. A WTOR is always issued unless an INTERVAL statement is specified and a CHKPT keyword is not specified for TYPE=REPROCESS.

The BMC43298I WTOR is a requeue prompt that is used to verify a checkpoint Message Advisor selects for requeue, initiate a requeue, cancel a requeue, view a list of checkpoints, change a checkpoint, or accept a checkpoint.

BMC Software recommends that you specify REQ_PROMPT=YES if you activate the automatic requeue feature.

**WARNING**
If you specify REQ_PROMPT=YES, you must respond with Y or N to message BMC43790I before Message Advisor will process any checkpoints.

As a safety precaution, if you initiate a REQUEUE command set with REQ_PROMPT=NO and the IMS options specify AUTO_REQ=YES, Message Advisor ignores the request and forces the BMC43298I WTOR when the last checkpoint recorded in the Message Advisor checkpoint data set is not a DUMPQ or PURGE.

For information about activating the automatic requeue feature, see the installation guide. The installation guide provides instructions about how to activate the feature at installation and instructions about how to customize Message Advisor online or in batch.

If you initiated a requeue task that specifies REQ_PROMPT=YES, monitor the JES2 job log for the requeue. A prompt similar to the following message is displayed before the requeue is performed:

```
BMC43298I REQUEUE TYPE=COLD DUMPQ CHKPT IS 2001231/0507329 REPLY Y/N/O/L/n, IMSID=A12B
```

If you receive a BMC43298I WTOR, you can perform the following tasks:

- Initiate or cancel the requeue.
  For instructions about performing this task, see “Initiate or cancel a requeue” on page 175.

- List and change checkpoints for the automatic requeue.
  For instructions about performing this task, see “List checkpoints for automatic requeue” on page 175.
Initiate or cancel a requeue

After receiving a BMC43298I WTOR, you can start or cancel a requeue in the following manner:

- Respond Y to the WTOR to initiate the requeue task by using the automatically selected checkpoint.
- Respond N to cancel the requeue.

List checkpoints for automatic requeue

If you receive a BMC43298I WTOR, you can list checkpoints, select a new checkpoint, and initiate a requeue in the following manner:

- List valid checkpoints by typing L, and pressing Enter.
  A list of valid checkpoints similar to those displayed in Figure 106 on page 175 is displayed. For TYPE=COLD requeues, Message Advisor lists only DUMPQ checkpoints. For TYPE=EREFAIL and TYPE=REPROCESS requeues, Message Advisor lists DUMPQ and SNAPQ checkpoints. The Message Advisor checkpoint data set records PURGE checkpoints as DUMPQ checkpoints.

  **Figure 106: IMS checkpoint summary**

<table>
<thead>
<tr>
<th>CHKPT #</th>
<th>TYPE</th>
<th>DATE/TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>DUMPQ</td>
<td>2001234/2123460CDT</td>
</tr>
<tr>
<td>1</td>
<td>DUMPQ</td>
<td>2001234/2107552CDT</td>
</tr>
<tr>
<td>2</td>
<td>DUMPQ</td>
<td>2001232/1009226CDT</td>
</tr>
<tr>
<td>3</td>
<td>DUMPQ</td>
<td>2001229/1741262CDT</td>
</tr>
<tr>
<td>4</td>
<td>DUMPQ</td>
<td>2001228/1706108CDT</td>
</tr>
<tr>
<td>5</td>
<td>DUMPQ</td>
<td>2001222/1738390CDT</td>
</tr>
<tr>
<td>6</td>
<td>DUMPQ</td>
<td>2001222/1020194CDT</td>
</tr>
<tr>
<td>7</td>
<td>DUMPQ</td>
<td>2001220/1441290CDT</td>
</tr>
<tr>
<td>8</td>
<td>DUMPQ</td>
<td>2001218/2117125CDT</td>
</tr>
<tr>
<td>9</td>
<td>DUMPQ</td>
<td>2001215/1725104CDT</td>
</tr>
</tbody>
</table>

The BMC43298I WTOR is reissued.

- Select one of the checkpoints from the list.

- Type the number from the CHKPT # column that corresponds to the checkpoint you want to use and press Enter.

  **Note**

  This option is available only after the List option has been used.

Message Advisor reissues the BMC43298I WTOR; the checkpoint you selected is now displayed in the prompt.
Type Y and press Enter to initiate the requeue task by using the checkpoint you specified in any of the previous steps.

Message Advisor initiates the requeue task by using the new checkpoint.

Override checkpoints for automatic requeue

If you receive a BMC43298I WTOR, you can override the automatically selected checkpoint, select a new checkpoint, and initiate a requeue in the following manner:

- Respond O to the WTOR to change the automatically selected checkpoint (without using the List option).
  
  Message Advisor issues a BMC43322I WTOR asking you to specify the new checkpoint.

- Type the new checkpoint in yyyyddd/ hhmmss format.

  Note
  IMS messages such as DFS994I provide only 13 of the 14 checkpoint digits. Message Advisor will accept an 13-digit checkpoint.

Message Advisor reissues the BMC43298I WTOR; the checkpoint you specified is now displayed in the prompt.

  Note
  If you specified an 13-digit checkpoint, Message Advisor inserts a zero as the last digit of the checkpoint. If you respond with Y to begin the requeue based on the 13-digit checkpoint, Message Advisor selects the appropriate last digit during processing.

- Read the new BMC43298I WTOR carefully to ensure that the proper checkpoint has been selected.

  Note
  This prompt is identical to the original BMC43298I WTOR, except that the checkpoint has been changed.

- Type Y and press Enter to initiate the requeue task by using the checkpoint you specified in any of the previous steps.

  Message Advisor initiates the requeue task by using the new checkpoint.
Instructions for requeuing messages

This section includes information about preliminary operational tasks you must perform before requeuing messages and instructions on performing two types of requeue tasks.

<table>
<thead>
<tr>
<th>Task</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing to requeue messages</td>
<td>“Before requeueing messages” on page 177</td>
</tr>
<tr>
<td>Requeueing messages after a cold start: command set</td>
<td>“Requeueing messages after a cold start: command set” on page 177</td>
</tr>
<tr>
<td>Requeueing messages after an /ERE failure: command set</td>
<td>“Requeueing messages after an /ERE failure: command set” on page 192</td>
</tr>
</tbody>
</table>

Before requeueing messages

Before requeueing messages, perform the following tasks:

- Bring up the Message Advisor Server by submitting the MAQCNTL member QMR#STRT. If you have placed this member in your PROCLIB, issue an MVS START command.

- Ensure that you have started the VTAM APPLIDs for the Message Advisor Server and user sessions by issuing a `V NET, ID=xxxxxxxx,ACT` command, where `xxxxxxxx` represents a member name of SYS1.VTAMLST or its equivalent. This member contains the definition of the VTAM APPLIDs for the Message Advisor Server and user sessions.

- If you access the Message Advisor Server frequently, let it run continuously; if you do not, bring it up only when needed.

Requeueing messages after a cold start: command set

This example shows how to build and execute a REQUEUE command set to requeue messages after a cold start following a normal shutdown (DUMPQ or PURGE) of IMS. In this example, Message Advisor has recorded the latest checkpoint in the Message Advisor Checkpoint Tracking data set. Message Advisor uses this checkpoint tracking information plus RECON data set information to automatically locate the SLDS, which it uses as input.

For information about building the command set request library and creating command set members, see “Building and executing a command set” on page 73.
For information about how to respond to the requeue WTOR, see “Requeue checkpoint prompt response” on page 174.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

1 On the Message Advisor Primary Menu panel perform the following steps:
   a Type 1 in the choice entry field.
   b Type a valid library name in the Request library field, and press Enter.

      The Member List panel is displayed.

2 Add a new member by performing the following steps:
   a Type A in the Command area of the Member List panel.

      The Member List panel lets you add a new member or to select an existing member for update. After the command set is built and saved, you can also execute the command set from this panel.

   b Press Enter.

      The Insert Command Set pop-up panel is displayed. This pop-up panel lets you select one of the Message Advisor base commands sets.

3 To select the REQUEUE command set, type 1 and press Enter.

   **Note**

   This example goes through the pop-up panels sequentially.

   To go through the pop-up panels sequentially, press Enter. Each pop-up panel tells you where you are in the series by displaying Page x of y in the upper right corner of the panel. To go directly to a pop-up panel, type the number of the selection and press Enter.

   The REQUEUE Command Set pop-up panel (Figure 107 on page 178) is displayed.

   The REQUEUE Command Set pop-up panel lets you access the options listed on the pop-up panel.

   **Figure 107: REQUEUE Command Set panel**
Type **1** in the choice entry field, and press **Enter**.

The REQUEUE Processing Options, Page 1 of 11 pop-up panel *(Figure 108 on page 179)* is displayed.

This example requeues messages from an IMSID by entering an IMSID and accepting the Message Advisor defaults wherever possible.

**Figure 108: REQUEUE Processing Options panel, Page 1 of 11**

5 Define the REQUEUE processing options by performing the following steps:

a Verify that the IMSID in the **IMSID** field is accurate.

b *(optional)* Type a checkpoint in the **Checkpoint** field.

Although you can specify a checkpoint, you do not need to because Message Advisor can automatically determine which checkpoint to use for the requeue.
If you leave this field blank, Message Advisor will use the last DUMPQ checkpoint. You must accept or reject the checkpoint through a WTOR message. Message Advisor displays WTOR message BMC43298I REQUEUE TYPE=parameter checkpoint CHKPT SELECTED IS yyyyddd/hhmmss, REPLY Y/N/O/L/n, IMSID=imsid at the MVS console for checkpoint validation. If the IMS control region was restarted after message BMC43298I was displayed, reply to the message by issuing the command N. If the IMS control region was restarted, Message Advisor local storage was probably modified. If a reply other than N is issued, unpredictable results will occur.

c In the REQUEUE Processing Options panel, type a slash (/) in the Requeue messages field.

d If it is not already displayed, type 1 in the Type of situation field, and press Enter.

The REQUEUE Screening Options, Page 2 of 11 pop-up panel (Figure 109 on page 180) is displayed.

Use the REQUEUE Screening Options pop-up panel to select the type of messages that you want to requeue.

Figure 109: REQUEUE Screening Options panel, Page 2 of 11

6 Select the type(s) of messages you want to requeue by performing the following steps:

a In the REQUEUE Processing Options panel, type / next to each type of message that you want to requeue.

To requeue all messages, type / next to each option.

To requeue only transaction messages, type / next to each option except Messages destined for logical terminals (CNTs) and System messages.

To requeue nonconversational messages destined to an LTERM (CNT) only, type / next to Non-conversational messages and Messages destined for logical terminals (CNTs).
b  Press Enter.

The REQUEUE Special Options, Page 3 of 11 pop-up panel (Figure 110 on page 181) is displayed.

Figure 110: REQUEUE Special Options panel, Page 3 of 11

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>REQUEUE Special Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select (type a ‘/’) one or more of the following.</td>
<td></td>
</tr>
<tr>
<td>Replace TIMESTAMP on requeued messages with current date/time</td>
<td></td>
</tr>
<tr>
<td>Use OLDS data sets (rather than SLDS) for auto input selection</td>
<td></td>
</tr>
<tr>
<td>COMPRESS messages when requeuing</td>
<td></td>
</tr>
<tr>
<td>VALIDATE_SRC LTERM when requeuing</td>
<td></td>
</tr>
<tr>
<td>Incore storage option</td>
<td></td>
</tr>
<tr>
<td>1. Use extended private area (EPVT)</td>
<td></td>
</tr>
<tr>
<td>2. Use EPVT and FIX all pages used</td>
<td></td>
</tr>
<tr>
<td>3. Use SPILL files instead of EPVT</td>
<td></td>
</tr>
<tr>
<td>TYPE=COLD checkpoints</td>
<td></td>
</tr>
<tr>
<td>1. Always issue WTOR for confirmation</td>
<td></td>
</tr>
<tr>
<td>2. Never issue WTOR for confirmation</td>
<td></td>
</tr>
<tr>
<td>For zero timestamps</td>
<td></td>
</tr>
<tr>
<td>1. Write message to the SCRAP file</td>
<td></td>
</tr>
<tr>
<td>2. Use timestamp of the checkpoint</td>
<td></td>
</tr>
<tr>
<td>3. Use timestamp of last similar message</td>
<td></td>
</tr>
</tbody>
</table>

7  Accept or change the default selections for this pop-up panel.

For this example, accept the defaults, which compress messages and sort messages in main storage for faster processing.

8  Press Enter.

The REQUEUE Misc. Options, Page 4 of 11 pop-up panel (Figure 111 on page 181) is displayed.

Figure 111: REQUEUE Misc. Options panel, Page 4 of 11

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>REQUEUE Misc. Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type options. Then press Enter.</td>
<td></td>
</tr>
<tr>
<td>Maximum requeue activity rate . . . . ________ messages per minute</td>
<td></td>
</tr>
<tr>
<td>Message selection exit . . . . . ________ (user exit name)</td>
<td></td>
</tr>
<tr>
<td>Replace user ID in messages with . . . . .</td>
<td></td>
</tr>
</tbody>
</table>

9  Accept or change the default selections for this pop-up panel.

For this example, accept the default selections.

10  Press Enter.
The REQUEUE Report Options, Page 5 of 11 pop-up panel (Figure 112 on page 182) is displayed.

The Summary report summarizes of the message types requeued. For more information about reports, see “Message Advisor reports” on page 351.

**Figure 112: REQUEUE Report Options panel, Page 5 of 11**

```
<table>
<thead>
<tr>
<th>Command ===</th>
<th>REQUEUE Report Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Select (type a '/') one or more reports to print. Page 5_of 11</td>
</tr>
<tr>
<td>C</td>
<td>Enter DEFAULT on the command line to select defaults.</td>
</tr>
<tr>
<td>T</td>
<td>/ SUMMARY - Summary report</td>
</tr>
<tr>
<td>C</td>
<td>/ DESTINATION - Non-conversational (by destination)</td>
</tr>
<tr>
<td>T</td>
<td>7 CONVERSATION - Conversational messages requeued</td>
</tr>
<tr>
<td>C</td>
<td>7 ERROR - Messages which resulted in error scrap code</td>
</tr>
<tr>
<td>T</td>
<td>7 ENVIRONMENT - Environment report</td>
</tr>
<tr>
<td>C</td>
<td>/ SCRAP - Messages written to scrap file</td>
</tr>
<tr>
<td>T</td>
<td>/ MESSAGE - Messages successfully requeued</td>
</tr>
<tr>
<td>C</td>
<td>/ ERRORDATA - ERROR with message data</td>
</tr>
<tr>
<td>T</td>
<td>/ SCRAPDATA - SCRAP with message data</td>
</tr>
<tr>
<td>C</td>
<td>/ MESSAGEDATA - MESSAGE with message data</td>
</tr>
</tbody>
</table>
```

11 Accept or change the default selections for this pop-up panel.

For this example, accept the default selections.

12 Press Enter.

The REQUEUE Interval Selection, Page 6 of 11 pop-up panel (Figure 113 on page 182) is displayed.

**Figure 113: REQUEUE Interval Selection panel, Page 6 of 11**

```
<table>
<thead>
<tr>
<th>Command ===</th>
<th>REQUEUE Interval Selection</th>
<th>Scroll ===&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I=Insert</td>
<td>Page 6_of 11</td>
<td>Line 00 of 00</td>
</tr>
<tr>
<td>D=Delete</td>
<td>Type one or more action codes, if desired.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type time intervals to restrict which messages are to be selected.</td>
<td></td>
</tr>
<tr>
<td>Act YYYYDDD HHMMSS ST HHMM YYYYDDD HHMMSS ST HHMM</td>
<td>OR Newer Than Older Than</td>
<td></td>
</tr>
<tr>
<td></td>
<td>nnn Days nnn Days</td>
<td></td>
</tr>
</tbody>
</table>
```

13 Determine whether to define time intervals to restrict message selection.

For this example, leave this pop-up panel blank.
14 Press Enter.

The REQUEUE Message Selection, Page 7 of 11 pop-up panel (Figure 114 on page 183) is displayed.

**Figure 114: REQUEUE Messages Selection panel, Page 7 of 11**

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>Scroll ===&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type one or more action codes, if desired.</td>
<td>Page 7 of 11</td>
</tr>
<tr>
<td>I=Insert D=Delete S=Edit keyword values</td>
<td>Line 00 of 02</td>
</tr>
<tr>
<td>Type values on one line to 'AND'. Use separate lines to 'OR'.</td>
<td></td>
</tr>
<tr>
<td>Destination</td>
<td>More</td>
</tr>
<tr>
<td>Act Function</td>
<td>Label</td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_ SELECT</td>
<td>________</td>
</tr>
<tr>
<td>_ REJECT</td>
<td>________</td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
</tbody>
</table>

15 Accept or change the default selections for this pop-up panel.

For this example, leave this pop-up panel blank. This example requeues all messages, which implies a selection of messages regardless of destination, LU name, origin, queue, or destination type.

16 Press Enter.

The REQUEUE Change Messages, Page 8 of 11 pop-up panel (Figure 115 on page 183) is displayed.

**Figure 115: REQUEUE Change Messages panel, Page 8 of 11**

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>Scroll ===&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type one or more action codes, if desired.</td>
<td>Page 8 of 11</td>
</tr>
<tr>
<td>I=Insert D=Delete S=Edit changes</td>
<td>Line 00 of 00</td>
</tr>
<tr>
<td>Act</td>
<td>Label</td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td></td>
</tr>
</tbody>
</table>

17 Define the CHANGE message selection criteria by performing the following steps:

a Type S in the Act field.
b Press Enter.

The REQUEUE Change Message Selection pop-up panel (Figure 116 on page 184) is displayed. This example changes the SYSIDs of the input messages.

Figure 116: REQUEUE Change Message Selection panel

| Command ==> REQUEUE Change Message Selection |
| Select one of the following. Then press Enter. |
| _ 1. Select which messages to change |
| Note: The messages selected for change are processed AFTER the messages selected from the SELECT/REJECT subcommands. |
| _ 2. Specify what to change in the selected messages |

c Type 1 in the choice entry field, and press Enter.

The REQUEUE Change Message Keyword Selection pop-up panel (Figure 117 on page 184) is displayed.

Figure 117: REQUEUE Change Message Keyword Selection panel

| Command ==> REQUEUE Change Message Keyword Selection |
| Label ________ |
| Type one or more action codes, if desired. |
| S=Edit value       D=Set default value |
| Act Keyword      Value |
| _ DESTination= Destinations or masks |
| _ DESType=     Destination type |
| _ RCNT=     Remote CNTs or masks |
| _ PSB=    Transactions associated with PSBs |
| _ DBD=    Transactions associated with DBDs |
| _ NODENAME= VTAM nodenames or masks |

d To scroll through the list of available keywords, press F8.

e To edit the value for this keyword, type S in the Act field next to the MSGTYPE= keyword.

f Press Enter.

The REQUEUE Message Keyword Value Edit pop-up panel (Figure 118 on page 184) is displayed.

Figure 118: REQUEUE Message Keyword Value Edit panel
g Type **INPUT** on the command line, and press Enter.

The REQUEUE Message Keyword Value Edit pop-up panel with only IN-CNT, IN-APPC, and IN-OTMA message types selected is displayed.

h Press END twice.

The REQUEUE Change Message Selection pop-up panel (Figure 116 on page 184) is displayed.

i Type 2 in the choice entry field, and press Enter.

The REQUEUE Change Message Values pop-up panel (Figure 119 on page 185) is displayed.

---

**Figure 119: REQUEUE Change Message Values panel**

```
REQUEUE Change Message Values
Command ===> More: +
Dest .
Nodename: ________________
LUname: __________
TPipe: __________
MFS name: __________
Origin: ______
PIMS: . . ________
QIMS: . __________
Userid: ______
Queue : _ (1,2,3,4)
Timestamp. Select if desired.
_ Set timestamp to current time
Remote sysid.   Local sysid.
_ 1. Specific sysid ____ (1-2036) _ 1. Specific sysid ____ (1-2036)
_ 2. No change ___ * _ 2. No change ___ *
BMC43993 Warning: CHANGE subcommand missing new message value(s).
```
This example changes the remote SYSID to 2015 and the local SYSID to 2025 for the input messages.

j Type 1 in the Remote sysid. field, and tab to the next field.

k Type 2015.

l Type 1 in the Local sysid. field, and tab to the next field.

m Type 2025.

n Press END twice.

The REQUEUE Change Messages panel (Figure 120 on page 186) is displayed showing which fields are to be changed for what type of messages.

Figure 120: REQUEUE Change Messages panel, Page 8 of 11 showing which fields are to be changed for what type of messages

<table>
<thead>
<tr>
<th>Act</th>
<th>Label</th>
<th>Message selection fields</th>
<th>Change fields</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

o Press Enter.

The REQUEUE Scrap Code Options, Page 9 of 11 pop-up panel (Figure 121 on page 186) is displayed.

Figure 121: REQUEUE Scrap Code Options panel, Page 9 of 11

<table>
<thead>
<tr>
<th>Command ===</th>
<th>REQUEUE Scrap Code Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify which scrap code messages should be scrapped, and which scrap codes should be considered an error. Page 9 of 11</td>
<td></td>
</tr>
<tr>
<td>You may enter one of the following commands on the command line: ALL, ERROR, NOTERROR</td>
<td></td>
</tr>
<tr>
<td>Scrap Error More: +</td>
<td></td>
</tr>
<tr>
<td>/ / 01 - NOSOURCE Origin not defined or created</td>
<td></td>
</tr>
<tr>
<td>/ / 02 - NODEST Destination not defined or created</td>
<td></td>
</tr>
<tr>
<td>/ / 03 - INSERT Segment insert failed</td>
<td></td>
</tr>
<tr>
<td>/ / 04 - ENQFAIL Enqueue failed</td>
<td></td>
</tr>
<tr>
<td>/ / 05 - LENGTH Segment too long</td>
<td></td>
</tr>
<tr>
<td>/ / 06 - PREFIX Prefix is invalid</td>
<td></td>
</tr>
<tr>
<td>/ / 07 - OSTOP SMB is OStopped</td>
<td></td>
</tr>
<tr>
<td>/ / 08 - USER User exit excluded message</td>
<td></td>
</tr>
</tbody>
</table>
18 Accept or change the default selections for this pop-up panel.

For this example, accept the defaults.

19 Press Enter.

The REQUEUE Input Selection, Page 10 of 11 pop-up panel (Figure 122 on page 187) is displayed.

**Figure 122: REQUEUE Input Selection panel, Page 10 of 11**

20 Accept or change the default selections for this pop-up panel.

For this example, accept the defaults so Message Advisor automatically selects the appropriate input, based on the Message Advisor Checkpoint Tracking data set and the RECON data sets.

21 Press Enter.

The REQUEUE Alternate Data Set Options, Page 11 of 11 pop-up panel (Figure 123 on page 187) is displayed.

**Figure 123: REQUEUE Alternate Data Set Options panel, Page 11 of 11**
22 Accept or change the default selections for this pop-up panel.

For this example, accept the defaults.

23 Press Enter.

The Confirm Changes pop-up panel is displayed.

24 To confirm the new command set options and defaults, type 1 in the choice entry field of the Confirm Changes pop-up panel, and press Enter.

The Command Sets panel (Figure 124 on page 188) is displayed.

This panel lets you name the command set and enter title information describing the command set.

Figure 124: Command Set panel

File Options Session Display Help

-----------------------------------------------------------------------------
Command Sets - bmcnode.MAQ.REQUEST
Member ________
Title . ______________________________________________________________________

Type one or more action codes. Then press Enter.
S=Select for update I=Insert D=Delete Line 000 of 001

Action Command Set Description
_ **************************** TOP OF DATA ****************************
_ = REQUEUE

25 (optional) Name the command set and add a description.

a (optional) Type the name of the command set in the Member field.

If you name the command set, fields on the following pop-up panel are populated.

b (optional) Type a description in the Title field.
c Press END.

The Confirm Save pop-up panel is displayed.

26 Confirm that you want to create and save the new member by performing the following steps:

a If you did not type the name on the previous pop-up panel, type a member name in the Create new member field.

b If it is not already displayed, type 2 in the choice entry field.

If you named the command set on the command sets pop-up panel, a 2 is displayed in the choice entry field and the member name is carried forward to this pop-up panel.

c Press Enter.

The Member List panel is (Figure 125 on page 189) is displayed.

Figure 125: Member List panel

<table>
<thead>
<tr>
<th>Act</th>
<th>Name</th>
<th>Prompt</th>
<th>Size</th>
<th>Created</th>
<th>Changed</th>
<th>More:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAMPR01</td>
<td>______</td>
<td>2</td>
<td>2001/08/24</td>
<td>2001/08/24 13:28:20</td>
<td>USER1D</td>
</tr>
<tr>
<td></td>
<td>SAMPUL</td>
<td>______</td>
<td>3</td>
<td>2001/08/23</td>
<td>2001/08/23 15:39:29</td>
<td>USER1D</td>
</tr>
<tr>
<td></td>
<td>UNL0003</td>
<td>______</td>
<td>7</td>
<td>2001/05/30</td>
<td>2001/05/30 12:27:52</td>
<td>USER1D2</td>
</tr>
<tr>
<td></td>
<td>UNL0015</td>
<td>______</td>
<td>4</td>
<td>2001/06/04</td>
<td>2001/06/04 11:45:36</td>
<td>USER1D2</td>
</tr>
<tr>
<td><strong>End</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

27 View the command set and edit it, if necessary, by performing the following steps:

a Type E in the Act field .

From the Member List panel, you can edit and/or execute the member that you just created. You can also select the member for update from the Member List panel and change the options and defaults on the respective pop-up panels by using the Message Advisor ISPF interface.

b Press Enter.

The new command set (Figure 126 on page 190) is displayed.

This panel shows you the command set built with the preceding panels and pop-up panels. You can edit the command set on this panel and save the
changes. You can also select the command set from the Member List panel and change the command set by using the Message Advisor ISPF interface.

**Figure 126: Command Set panel—requeueing all messages**

![Command Set Panel](image)

---

**Note**

If you chose the customization option to verify all checkpoints before requeueing (REQ_PROMPT), you must reply to the WTOR at the MVS console. You set this option during customization when you installed Message Advisor. For more information about customization, see the online help, the installation guide, and the Message Advisor for IMS Reference Manual.

In this example, no checkpoint was specified, so Message Advisor selected the checkpoint automatically.

28 Review the command set, and press **END**.

The Member List panel is displayed.

29 To execute the command set, type **Q** in the **Act** field of the Member List panel, and press **Enter**.

The Confirm Execute pop-up panel is displayed.

30 If **1** is not already displayed in this field, confirm execution by typing **1** in the choice entry field of the Confirm Execute pop-up panel, and pressing **Enter**.

Message Advisor executes the request and then displays several status panels that indicate the status of the REQUEUE request that you just executed. The Waiting pop-up panel, which is the first in a series of status and selection list panels, is displayed.
When the Waiting pop-up panel is first displayed and how often it is displayed are determined by the Session Control option settings. For more information about setting these options, see “Session Control” on page 45.

The Waiting pop-up panel remains displayed while the requeue runs. You do not have to press any keys or type any commands while this pop-up panel is displayed; it automatically scrolls to the Request Status pop-up panel (Figure 127 on page 191) when the requeue completes.

This pop-up panel displays the status of the requeue process by displaying any significant messages. You can scroll up and down through the messages with the scroll keys.

Figure 127: Request Status panel--messages

File Options Samples Session Display Help

<table>
<thead>
<tr>
<th>Request Status</th>
<th>Scroll ==&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ==&gt;</td>
<td>Request complete. Press Enter for report options.</td>
</tr>
<tr>
<td>BMC43868</td>
<td>Use the scroll actions/keys to view the messages. Then press Enter to continue.</td>
</tr>
<tr>
<td>Request for Server QJER:</td>
<td>Highest condition code: 00</td>
</tr>
<tr>
<td>14:43:08 bmcnode.MAQ.REQUEST(SAMPRQ1)</td>
<td>Line 013 of 022</td>
</tr>
<tr>
<td>Significant messages:</td>
<td>More: -</td>
</tr>
<tr>
<td>BMC43210I FOUND CHKPT 2001234/2117010CDT **SNAPQ ** (LOG IMSID=R61P R6. 1)</td>
<td>IMSID=R61P</td>
</tr>
<tr>
<td>BMC43210I FOUND CHKPT 2001234/2123460CDT **DUMPQ ** (LOG IMSID=R61P R6. 1)</td>
<td>IMSID=R61P</td>
</tr>
<tr>
<td>BMC43210I USING CHKPT 2001234/2123460CDT **DUMPQ ** (LOG IMSID=R61P R6. 1)</td>
<td>IMSID=R61P</td>
</tr>
<tr>
<td>BMC43268I MESSAGE ADVISOR PROCESSING LOG RECORDS, IMSID=R61P</td>
<td></td>
</tr>
<tr>
<td>BMC43269I MESSAGE ADVISOR INSERTING MESSAGES TO IMS QUEUES, IMSID=R61P</td>
<td></td>
</tr>
<tr>
<td>BMC43076I REQUEUE FOR USERID1 (TASK 6) IMS(R61P) ENDED, RC=00</td>
<td></td>
</tr>
</tbody>
</table>

31 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. You may view an explanation about any message on the panel by placing the cursor on the message and pressing PF4 (PROMPT).

If this pop-up panel shows a condition code other than 00, review the messages and reports from the Browse Results pop-up panel (Figure 128 on page 192) to determine the problem.

32 Press Enter.

The Request Results pop-up panel is displayed.
To view the REQUEUE report, type 1 in the choice entry field on the Browse Results pop-up panel, and press Enter.

The Browse Results report pop-up panel (Figure 128 on page 192) is displayed.

Figure 128: Browse Results panel

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>Browse Results</th>
<th>Scroll ===&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;&gt;&gt;&gt;REQUEUE</td>
<td>IMSID=R6IP,</td>
<td>Line 000000 of 000191</td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;</td>
<td>REPORT=(SUMMARY,DESTINATION,TRANSACTION,CONVERSATIONS),</td>
<td>Cols 001 075</td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;</td>
<td>VALIDATE_SRC=NO</td>
<td>More: + &gt;</td>
</tr>
<tr>
<td>&lt;&lt;&lt;END</td>
<td>Top of Data ******************************************</td>
<td></td>
</tr>
<tr>
<td>BMC43077I REQUEUE IN PROGRESS FOR USERID1 (TASK 6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;REQUEUE</td>
<td>IMSID=R6IP,</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;</td>
<td>REPORT=(SUMMARY,DESTINATION,TRANSACTION,CONVERSATIONS),</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;</td>
<td>VALIDATE_SRC=NO</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;END</td>
<td>Top of Data ******************************************</td>
<td></td>
</tr>
<tr>
<td>BMC432761 SEARCHING FOR COPY1 RECON DATA SET, IMSID=R6IP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC432271 USING SCRAP DDN=SYS00039 DSN=RIHJER.R61P.SCRA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC432271 USING SPILL1 DDN=SYS00040 DSN=RIHJER.R6IP.SPILL1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC432461 SEARCHING FOR CHKPT=2001234/2123460CDT IMSID=R61P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC432271 USING RECON DDN=SYS00041 DSN=RCNDC.R61P.RECON</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC432291 MESSAGE ADVISOR CHECKPOINT TRACKING IS ACTIVE, IMSID=R61P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43261W TYPE=COLD BUT LAST SHUTDOWN WAS NOT A DUMPQ/PURGE, IMSID=R61P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43267I MESSAGE ADVISOR READING INPUT LOG(S), IMSID=R61P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43210I FOUND CHKPT 2001234/2117010CDT **SNAPQ ** (LOG IMSID=R61P R8.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43210I FOUND CHKPT 2001234/2123460CDT **DUMPQ ** (LOG IMSID=R61P R8.1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Review the output.

If this pop-up panel shows an error code other than 00, see the BMC Documentation Center for an explanation of the error.

Press END until the Message Advisor Primary Menu is displayed.

Issue the /STA DC command to initiate normal IMS data communications.

Complete your normal IMS startup procedures.

This step completes the sample task of requeueing messages after a normal shutdown (DUMPQ or PURGE) and cold start of IMS.

BMC recommends that you always take a checkpoint after a successful requeue.

Requeuing messages after an /ERE failure: command set

This example shows how to build and execute a REQUEUE command set to requeue messages after a cold start following an abend of IMS and subsequent /ERE failures. Message Advisor records checkpoints which can be used for restart in the Message.
Advisor Checkpoint Tracking data set. Message Advisor uses this checkpoint tracking information plus RECON data set information to automatically locate the appropriate SLDS(s), which it uses as input.

For information about building the command set request library and creating command set members, see “Building and executing a command set” on page 73.

The Message Advisor ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

1 On the Message Advisor Primary Menu panel perform the following steps:
   a Type 1 in the choice entry field.
   b Type a valid library name in the Request library field, and press Enter.

   The Member List panel is displayed.

2 Add a new member by typing A in the Command area of the Member List panel.

   The Member List panel lets you add a new member or to select an existing member for update. After the command set is built and saved, you can also execute the command set from this panel.

3 Press Enter.

   The Insert Command Set pop-up panel is displayed. This pop-up panel lets you select one of the Message Advisor base command sets.

4 Select the REQUEUE command set.
   a Type 1 in the choice entry field of the Insert Command Set pop-up panel.
   b Press Enter.

   The REQUEUE Command Set pop-up panel (Figure 129 on page 193) is displayed.

   Use the REQUEUE Command Set pop-up panel to access the options listed on the pop-up panel.

Figure 129: REQUEUE command set panel
Select one of the following. Then press Enter.

1. Processing options - Specify what this requeue should do
2. Screening options - Select types of messages to requeue
3. Special options - Turn special options on or off
4. Misc. options - Rate, user exit, user ID
5. Reports - Specify which requeue reports to generate
6. Interval selection - Restrict search based on time
7. Message selection - Select or reject by dest, origin, etc.
8. Change messages - Specify what to change in messages
9. Scrap codes - Specify messages to copy to scrap file
10. Input selection - Restrict input to specific data sets
11. Alternate data sets - Specify extract, scrap, and spill files
12. Exit

---

**Note**

To go through the pop-up panels sequentially, press *Enter*. The pop-up panels are presented in the order in which they appear on the above panel. Each pop-up panel tells you where you are in the series by displaying Page x of y in the upper right corner of the panel.

To go directly to a pop-up panel, type the number of the selection and press *Enter*. This example goes through the pop-up panels sequentially.

5 Type 1 in the choice entry field, and press Enter.

The REQUEUE Processing Options, Page 1 of 11 pop-up panel (Figure 130 on page 194) is displayed.

In this example, you are going to build a command set to requeue all messages from an IMSID by entering an IMSID and accepting the Message Advisor defaults wherever possible.

**Figure 130: REQUEUE Processing Options panel**

<table>
<thead>
<tr>
<th>Command ==/&gt;</th>
<th>REQUEUE Processing Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type options. Then press Enter.</td>
<td>Page 1 of 11</td>
</tr>
<tr>
<td>IMSID . . . R61P + Checkpoint _____ / _____ / _____ + (YYYYDDD/HHHMMSS/+HHMM)</td>
<td></td>
</tr>
<tr>
<td>Processing mode. Select one or more.</td>
<td></td>
</tr>
<tr>
<td>/ Requeue messages</td>
<td></td>
</tr>
<tr>
<td>_ Validate messages</td>
<td></td>
</tr>
<tr>
<td>_ Extract messages to the extract file</td>
<td></td>
</tr>
<tr>
<td>Type of situation.</td>
<td></td>
</tr>
<tr>
<td>2 1. COLD - Scheduled COLD start (uses DUMPQ chkpt)</td>
<td></td>
</tr>
<tr>
<td>2. EREFAIL - Cold start after /ERE FAILure (uses SNAPQ chkpt and log records)</td>
<td></td>
</tr>
<tr>
<td>3. REPROCESS - REPROCESS messages (uses log records)</td>
<td></td>
</tr>
<tr>
<td>4. FILE - Input from extract or unload FILE</td>
<td></td>
</tr>
</tbody>
</table>

6 Define the REQUEUE processing options by performing the following steps:
a  Verify that the IMSID in the IMSID field is accurate.

b  To use the last appropriate checkpoint recorded in the Message Advisor Checkpoint Tracking data set, leave the Checkpoint field blank.

Although you can specify a checkpoint, you do not need to since Message Advisor can automatically determine which checkpoint to use for the requeue.

If you leave this field blank, Message Advisor will use the last SNAPQ checkpoint and the log records. You must accept or reject the checkpoint through a WTOR message. Message Advisor displays WTOR message BMC43298I REQUEUE TYPE=parameter checkpoint CHKPT SELECTED IS yyyyddd/hhmmss, REPLY Y/N/O/L/n, IMSID=imsid at the MVS console for checkpoint validation.

c  In the REQUEUE Processing Options panel, type a slash (/) in the Requeue messages field.

d  To select cold start after /ERE failure, type 2 in the Type of situation field and press Enter.

The REQUEUE Screening Options, Page 2 of 11 pop-up panel (Figure 131 on page 195) is displayed.

Use the REQUEUE Screening Options pop-up panel to select the type of messages you want to requeue.

**Figure 131: REQUEUE Screening Options panel**

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>REQUEUE Screening Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select (type a '/') one or more from each group to include that type of message.</td>
</tr>
<tr>
<td>/</td>
<td>Non-conversational messages</td>
</tr>
<tr>
<td>_</td>
<td>Active conversations (pending or scheduled)</td>
</tr>
<tr>
<td>_</td>
<td>Held conversations</td>
</tr>
<tr>
<td>_</td>
<td>Discardable and non-recoverable messages</td>
</tr>
</tbody>
</table>

Type a slash (/) next to the type(s) of messages that you want to requeue.

For this example, accept the defaults displayed on this pop-up panel. The defaults do not include requeuing and establishing any conversational messages.

8  Press **Enter**.
The REQUEUE Special Options, Page 3 of 11 pop-up panel (Figure 132 on page 196) is displayed.

**Figure 132: REQUEUE Special Options panel**

```
Command ===> _________________________________________________________  
| | Select (type a '/') one or more of the following.        Page 3_ of 11  |
| |                                                                         |
| |   _ Replace TIMESTAMP on requeued messages with current date/time       |
| |   _ Use OLDS data sets (rather than SLDS) for auto input selection      |
| |   / COMPRESS messages when requeuing                                   |
| |   / VALIDATE_SRC LTERM when requeuing                                  |
| |                                                                         |
| | Incore storage option  1 1. Use extended private area (EPVT)          |
| |                            2. Use EPVT and FIX all pages used           |
| |                            3. Use SPILL files instead of EPVT           |
| |                                                                         |
| | TYPE=COLD checkpoints   _  1. Always issue WTOR for confirmation        |
| |                            2. Never issue WTOR for confirmation         |
| |                                                                         |
| | For zero timestamps . . _  1. Write message to the SCRAP file           |
| |                            2. Use timestamp of the checkpoint           |
| |                            3. Use timestamp of last similar message     |
| |                                                                         |
| |                                                                         |
| ' '-------------------------------------------------------------------------'
```

9 Accept or change the defaults displayed on this pop-up panel.

For this example, accept the defaults. The defaults shown on this pop-up panel compress messages and sort messages in main storage for faster processing. Message Advisor chooses these selections as defaults; if you do not want a specific selection, blank it out by moving the cursor next to the option and pressing the space bar.

10 Press Enter.

The REQUEUE Misc. Options, Page 4 of 11 pop-up panel (Figure 133 on page 196) is displayed.

**Figure 133: REQUEUE Misc. Options panel**

```
Command ===> _________________________________________________________  
| | Type options. Then press Enter.                          Page 4_ of 11  |
| |                                                                         |
| |   Maximum requeue activity rate . . . . ________ messages per minute    |
| |   Message selection exit  . . . . . . . ________ (user exit name)       |
| |   Replace user ID in messages with  . . ________                        |
| |                                                                         |
| |                                                                         |
| |                                                                         |
```

11 Accept or change the defaults displayed on this pop-up panel.

For this example, accept the defaults.
12 Press Enter.

The REQUEUE Report Options, Page 5 of 11 pop-up panel (Figure 134 on page 197) is displayed.

The Summary report summarizes of the message types requeued. For more information about reports, see “Message Advisor reports” on page 351.

**Figure 134: REQUEUE Report Options panel**

<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>REQUEUE Report Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select (type a ‘/’) one or more reports to print.</td>
<td>Page 5 of 11</td>
</tr>
<tr>
<td>Enter DEFAULT on the command line to select defaults.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>/ SUMMARY</td>
<td>Summary report</td>
</tr>
<tr>
<td>/ DESTINATION</td>
<td>Non-conversational (by destination)</td>
</tr>
<tr>
<td>ORIGIN</td>
<td>Non-conversational (by origin)</td>
</tr>
<tr>
<td>CONVERSATION</td>
<td>Conversational messages requeued</td>
</tr>
<tr>
<td>ERROR</td>
<td>Messages which resulted in error scrap code</td>
</tr>
<tr>
<td>SCRAP</td>
<td>Messages written to scrap file</td>
</tr>
<tr>
<td>MESSAGE</td>
<td>Messages successfully requeued</td>
</tr>
<tr>
<td>ERRORDATA</td>
<td>ERROR with message data</td>
</tr>
<tr>
<td>SCRAPDATA</td>
<td>SCRAP with message data</td>
</tr>
<tr>
<td>MESSAGEDATA</td>
<td>MESSAGE with message data</td>
</tr>
</tbody>
</table>

13 Select the reports you want to print.

In this example, you are requeueing nonconversational messages and will need summary destination reports on nonconversational messages.

a Type / next to Summary report and Non-conversational messages requeued (by destination).

b Press END twice.

The Confirm Changes pop-up panel is displayed.

14 Confirm the new command set options and defaults by typing 1 in the choice entry field of the Confirm Changes pop-up panel, and pressing Enter.

The Command Sets panel (Figure 135 on page 197) is displayed. Use this panel to name the command set and enter title information describing the command set.

**Figure 135: Command Set panel**

<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>Command Sets - bmcnode.MAQ.REQUEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td></td>
</tr>
</tbody>
</table>

Type one or more action codes. Then press Enter.

S=Select for update  I=Insert  D=Delete  Line 000 of 001
15 *(optional)* Name the command set and add a description by performing the following steps:

a *(optional)* Type the name of the command set in the **Member** field.

If you name the command set, fields on the following pop-up panel will be populated.

b *(optional)* Type a description in the **Title** field.

The Confirm Save pop-up panel is displayed.

c Press **END**.

16 Confirm that you want to create and save the new member by performing the following steps:

a If you did not type the name on the previous pop-up panel, type a member name in the **Create new member** field.

b If it is not already displayed, type **2** in the choice entry field.

If you named the command set on the command sets pop-up panel, a **2** is displayed in the choice entry field and the member name is carried forward to this pop-up panel.

c Press **Enter**.

The Member List panel is *(Figure 136 on page 198)* is displayed.

**Figure 136: Sample Member List panel**

<table>
<thead>
<tr>
<th>Name</th>
<th>Prompt</th>
<th>Size</th>
<th>Created</th>
<th>Changed</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPRQ2</td>
<td>________</td>
<td>3</td>
<td>2001/08/24</td>
<td>2001/08/24 16:35:40</td>
<td>USERID1</td>
</tr>
<tr>
<td>SAMPUL</td>
<td>________</td>
<td>3</td>
<td>2001/08/23</td>
<td>2001/08/23 15:39:29</td>
<td>USERID1</td>
</tr>
<tr>
<td>UNL0003</td>
<td>________</td>
<td>7</td>
<td>2001/05/30</td>
<td>2001/05/30 12:27:52</td>
<td>USERID2</td>
</tr>
<tr>
<td>UNL0015</td>
<td>________</td>
<td>4</td>
<td>2001/06/04</td>
<td>2001/06/04 11:45:36</td>
<td>USERID2</td>
</tr>
</tbody>
</table>

**End**
17 View the command set and edit it, if necessary, by performing the following steps:

a Type E in the Act field.

From the Member List panel, you can edit and/or execute the member that you just created. You can also select the member for update from the Member List panel and change the options and defaults on the respective pop-up panels by using the Message Advisor ISPF interface.

b Press Enter.

The new command set (Figure 137 on page 199) is displayed. This panel shows you the command set built with the preceding panels and pop-up panels. You can edit the command set on this panel and save the changes. You can also select the command set from the Member List panel and change the command set by using the Message Advisor ISPF interface.

Figure 137: Sample Command Set panel—requeueing all messages after /ERE failure

```
000010 REQUEUE IMSID=R61P,TYPE=EREFAIL,
000020                REPORT=(SUMMARY,DESTINATION,TRANSACTION)
000030 END
```

Note You must accept or reject the checkpoint through a WTOR message. Message Advisor displays WTOR message BMC43298I REQUEUE TYPE=parameter checkpoint CHKPT SELECTED IS yyyyddd/hhmmst, REPLY Y/N/O/L/n, IMSID=imsid for checkpoint validation.

18 Review the command set, then press END.

The Member List panel is displayed.

19 To execute the command set, type Q in the Act field of the Member List panel, and press Enter.

The Confirm Execute pop-up panel is displayed.

20 If 1 is not already displayed in this field, confirm execution by typing 1 in the choice entry field of the Confirm Execute pop-up panel and pressing Enter.
Message Advisor executes the request and then displays several status panels that indicate the status of the REQUEUE request that you just executed. The Waiting pop-up panel, which is the first in a series of status and selection list panels, is displayed.

**Note**

When the Waiting pop-up panel is first displayed and how often it is displayed are determined by the Session Control option settings. For more information about setting these options, see “Session Control” on page 45.

The Waiting pop-up panel remains displayed while the requeue runs. You do not have to press any keys or type any commands while this pop-up panel is displayed; it automatically scrolls to the Request Status pop-up panel (Figure 138 on page 200) when the requeue completes.

This pop-up panel displays the status of the requeue process by displaying any significant messages. You can scroll up and down through the messages with the scroll keys.

**Figure 138: Sample Request Status panel**

<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>Request Status</th>
<th>Scroll ====&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC43668</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>Use the scroll actions/keys to view the messages. Then press Enter to continue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request for Server QJER:</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>16:43:43 bmcnode.MAQ.REQUEST(SAMPRQ2)</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>Highest condition code: 00</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>Significant messages:</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>More: -</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>BMC43267I MESSAGE ADVISOR READING INPUT LOG(S). IMSID=R61P</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>BMC43227I USING SLDs DDN=SYS00053 DSN=ABC.QMR61.R61PXRF.D01236.70943297 IMSID=R61P</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>BMC43210I FOUND CHKPT 2001236/0959367CDT **SNAPQ ** (LOG IMSID=R61P R6.1) IMSID=R61P</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>BMC43210I USING CHKPT 2001236/0959367CDT **SNAPQ ** (LOG IMSID=R61P R6.1) IMSID=R61P</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
<tr>
<td>BMC43076I REQUEUE FOR USERID1 (TASK 7) IMS(R61P) ENDED, RC=00</td>
<td>Request complete. Press Enter for report options.</td>
<td>PAGE</td>
</tr>
</tbody>
</table>

**Note**

Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. You may view an explanation about any message on the panel by placing the cursor on the message and pressing **PF4** (PROMPT).

If this pop-up panel shows a condition code other than 00, review the messages and reports from the Browse Results pop-up panel (Figure 139 on page 201) to determine the problem.
22 Press Enter.

The Request Results pop-up panel is displayed.

23 To view the REQUEUE report, type 1 in the choice entry field on the Browse Results pop-up panel, and press Enter.

The Browse Results pop-up panel (Figure 139 on page 201) is displayed.

Figure 139: Sample Browse Results panel

24 Review the output.

If this pop-up panel shows an error code other than 00, see the BMC Documentation Center for an explanation of the error.

25 To initiate normal IMS data communications, issue the /STA DC command.

26 Complete your normal IMS startup procedures.

This step completes the sample task of requeueing all messages after an abnormal shutdown, /ERE failure, and cold start of IMS.

Note

BMC recommends that you always take a checkpoint after a successful requeue.
About the Message Advisor Queue Protection Facility

This chapter describes the Message Advisor Queue Protection Facility (QPF). QPF automatically tracks and manages IMS message queues based on user-defined criteria to prevent IMS outages caused by message queue overflow.

Overview

The Queue Protection Facility (QPF) automatically tracks and manages IMS message queues based on user-defined criteria to prevent IMS outages (shutdowns and/or abends) caused by queue overflow. The following situations typically cause an IMS message queue to overflow:

- Looping BMP
  If a looping BMP doesn't issue checkpoints, the messages will be in a temporary queue and will not be detectable by using a /DISPLAY command.

- Looping MPP issuing message switches

- Unavailability of MSC or ISC links
  A large number of messages can use queue space waiting for an MSC or ISC link to become active.

- Messages with many segments
  A small number of messages with a large number of segments can use a large amount of queue space. This problem is difficult to detect because, in general, information provided by IMS is by queue count and not by the number of segments or actual number of message queue records used.

- Queue "creep"
  A large number of messages can gradually queue to many destinations. When this situation occurs, no single destination or group of destinations can be identified as the source of the problem. Over time, messages queue to seldom used.
destinations. If no action is taken, the queue utilization can eventually "creep" up to levels that jeopardize IMS availability.

- Legacy applications writing to destinations no longer in use
  Legacy applications may be printing reports that are no longer needed. Because of a large work load, correcting the application is not a viable option. Therefore, the messages continue to queue to a SYSGENed destination that doesn’t exist.

QPF addresses these kinds of problems, thus ensuring your IMS availability.

**QPF features**

QPF helps prevent conditions that cause IMS message queues to overflow, adversely affecting the availability of your IMS system. QPF can perform the following kinds of activities:

- Track message queue usage in an IMS system
- Display potential message queue problems
- Send warning messages
- Take actions to prevent IMS outages

Most of these activities are controlled by a series of QPF options that you define on the basis of your organization’s needs. Based on how you have defined the QPF options for an IMS system, QPF tracks the queue usage, sends warning messages, and takes actions to prevent queue overflow. QPF will continuously track the state of the IMS message queues and compare them against the thresholds defined on the QPF options. You can dynamically change these options at any time. QPF will continue to track the queue usage until you deactivate QPF or IMS terminates.

Although QPF is primarily an automated facility, manual actions can also be taken. Any time after the Monitor phase has begun, you can manually intervene and take action to resolve a problem that is not being resolved by QPF’s automated processing.

**Hiperassist feature**

Through the hiperassist feature, QPF utilizes hiperspace to supplement the IMS queue buffer pool as follows:

- QPF copies message queue blocks to hiperspace as it reads them.
- QPF retrieves subsequent reads from hiperspace.
- If there are no changes to the message block, QPF bypasses message queue writes.
Message queue restart elapsed time improves by more than 50 percent.

During normal IMS restarts, IMS reads all messages from the message queue data sets in order to validate them, and occasionally correct a problem. IMS performs these I/Os in random order (in order by queue, but random as far as location on the data set). Since a block normally contains multiple messages which may be required at different times, IMS may read the same block multiple times. Also, IMS always writes back each block in case it corrected an error.

QPF saves the blocks in hiperspace as read, and bypasses subsequent reads if the block is in hiperspace. QPF also bypasses the write if the block does not change, which results in the biggest savings during restart. The 50 percent improvement in queue restart time assumes that most of the IMS writes are unnecessary, which is normally the case. Therefore, QPF saves 50 percent of the I/Os to the message queue data sets.

Automated processing

QPF automated processing occurs in four phases: Active phase, Monitor phase, Protect phase, and Overflow phase. The phases represent the escalating use of the IMS message queues. The tasks performed in all of the phases are user-defined by using the QPF_OPTIONS command.

All phases except the Active phase have user-defined thresholds which, when reached, start the phase. The Monitor phase threshold is set lower than the Protect phase which, in turn, is set lower than the Overflow phase. Within each phase, user-defined tasks are defined by using the QPF_OPTIONS command. These tasks can issue warnings in the Monitor phase, cancel BMPs in the Protect phase, or perform similar user-defined actions. Once a QPF_OPTIONS command set is active, QPF continuously tracks the state of the IMS message queues to determine which processing phase, if any, should be active.

For more information about the QPF_OPTIONS command set, see the following text:

- “Define the QPF options” on page 233 describes how to set the QPF options.
- “Building a QPF_OPTIONS command set” on page 269 explains how to build a QPF_OPTIONS command set.
- The Message Advisor for IMS Reference Manual provides syntax diagrams, sample command sets, and descriptions of the subcommands, statements, keywords, and parameters associated with the QPF_OPTIONS command.
QPF problem list

Whenever QPF reaches the user-defined threshold for the Monitor phase, analysis of the transactions, LTERM/User messages, and temporary queues begins. Based on this analysis, QPF develops a list of potential problem destinations and regions, as well as origins which have had high activity. QPF provides the QPF_LIST command to display the list of message queue problems. The types of problems listed and the number of problems listed can be user-defined for each IMS system.

The QPF Problem List is normally accessed through the Message Advisor ISPF interface; however, you can also display the problem list by using one of the following methods:

- Issue a LIST command in response to a QPF Processing WTOR.
- Build a QPF_LIST command set.

For more information about the QPF Problem List, see the following text:

- “Manually initiating QPF actions” on page 305 explains how to access the problem list by using the Message Advisor ISPF interface panels.
- The Message Advisor for IMS Reference Manual provides a syntax diagram, sample command set, and description of the keywords and parameters associated with the QPF_LIST command and the QPF WTOR LIST command.

Manually initiated actions to resolve problems

You use the QPF_ACTION command to initiate a manual QPF action. Although QPF is designed primarily as an automated system that initiates corrective actions based on a predefined set of criteria, at times you will want to manually initiate a corrective action.

These actions are normally initiated to correct a problem identified on the QPF Problem List. The problem list can be accessed through the Message Advisor ISPF interface. You can type the applicable code for the requested QPF action adjacent to the problem you wish to correct. Based on the task requested, QPF will initiate an internal QPF_ACTION command to implement the task.

Manual actions can also be initiated by issuing a QPF WTOR Action command or by building and submitting a QPF_ACTION command set.

For more information about manually initiated actions, see the following text:

- “Manually initiating QPF actions” on page 305 explains how to process actions against a problem by using the Message Advisor ISPF interface panels.
The Message Advisor for IMS Reference Manual provides a syntax diagram, sample command set, and description of the keywords and parameters associated with the QPF_ACTION command and the QPF WTOR Action commands.

Types of QPF tasks

A QPF task is any action that QPF takes when managing message queues. QPF tasks can be grouped into two categories:

- **Automated tasks**
  
  These tasks are predefined by the user to initiate during a QPF phase. These tasks are defined by using the QPF_OPTIONS command set and may be dynamically redefined at any time by the user. The majority of QPF tasks are predefined to initiate during a QPF phase.

- **Manually initiated tasks**
  
  These tasks are not predefined but rather are manually initiated at any time by the user.

QPF is designed to function primarily as an automated system that continuously tracks your IMS message queue processing, sends warning messages, and takes actions based on a predefined set of criteria. Although it is possible to initiate most QPF commands manually, the speed of IMS systems processing makes a strictly manual approach impractical. To respond quickly enough to potential queue overflow problems to avoid service interruptions, QPF tasks must be predefined.

Automated tasks

When QPF is active, it continuously tracks the usage of the IMS message queues. It compares them against the thresholds defined in the QPF options to determine which processing phase should be active. QPF takes action based on how you have predefined the tasks that are to be performed during each phase. These tasks are defined by using the QPF_OPTIONS command set. You can dynamically change these options at any time. QPF will continue to track the IMS system until you deactivate QPF or IMS shuts down.

The automated QPF tasks fall into the following categories:

- **Tracking tasks**
  
  Track the utilization of the message queues to determine which processing phase should be in progress.
Analysis tasks
Analyze the message queues.

Communications tasks
Issue warning messages and operator commands based on user-defined criteria.

Processing tasks
Initiate user-defined actions to reduce the number of IMS messages during the Protect and Overflow phases.

For more information about the automated tasks that can be defined by using the QPF_OPTIONS command set, see “QPF automated processing” on page 214.

Manually initiated tasks
To facilitate the manual resolution of message queue problems, QPF lets you generate a list of problems and to take corrective actions to resolve any problem on the list.

Manual actions are usually initiated by accessing the QPF Problem List by using the Message Advisor ISPF interface panels and typing the applicable action code for the QPF action requested adjacent to the problem you wish to correct. Based on the action requested, QPF will initiate an internal QPF_ACTION command to implement the action.

Actions can also be initiated by issuing a QPF WTOR Action command or by building and submitting a QPF_ACTION command set.

Valid actions for destinations
Destinations are identified by type and name on the QPF Problem List.

Some valid destination types are LUNAME, CNT-V, CNT-E, CNT, DYNAMIC, STATIC, DEADQ, MSNAME, RSMB, SMB, and VSPCNT. You can initiate the execution of the following actions against any destination displayed on the problem list:

- DEQUEUE
  A task is started to delete the queued messages for a destination.
- **UNLOAD_DEQUEUE**
  A task is started to unload and dequeue the queued messages for a destination. An UNLOAD_DSN subcommand must be present in the QPF options if this action is selected. The UNLOAD_DSN subcommand is used to determine the unload data set to be used.

- **STOP**
  A task is started to issue a STOP command and wait for the response. Destinations are stopped immediately.

  **Note**
  For information about the commands that the STOP action will perform for various types of destinations, see “QPF actions” on page 309.

**Valid actions for applications**

Applications are identified by type on the QPF Problem List. Application types are MPP, BMP, and TRN. You can initiate the execution of the following actions against any application displayed on the problem list:

- **ABEND**
  A task is scheduled to terminate the application the next time the IMS region attempts to insert a message. The application will terminate with pseudo-abend code U0474.

- **FAIL**
  A task is scheduled to issue an A7 status code to the application the next time the application attempts to insert a message segment.

- **IWAIT**
  A task is scheduled to IWAIT the region on the next attempt to insert a message.

- **IPOST**
  A task is started to restart an IMS region that has been previously IWAITed by QPF.

- **STOP**
  A task is scheduled to issue a STOP command and wait for the response the next time the application attempts to insert a message.

  **Note**
  For information about the commands that the STOP action will perform for various types of regions, see “QPF actions” on page 309.
Valid actions for input devices

Input devices are identified by type on the QPF Problem List. Input device types are IN-CNT, IN-CLB, IN-LNK, IN-LUN, IN-MSN, and IN-TPI.

Input devices can cause message queue problems if they loop, inserting messages too fast to be processed. Any CNT can be an "input device" although only programmable devices, MSC links, APPC LUnames, or OTMA TPIPEs normally have the potential to cause message queue problems.

Note
Message Advisor servers executing REQUEUE command sets are treated similarly to input devices.

You can initiate the execution of the following actions against any input device displayed on the problem list:

■ FAIL

For APPC, a task is scheduled to deallocate the input device. For OTMA, a task is scheduled to reject all subsequent input messages with either a NAK or a DFS1289 message to the client. The NAK or message indicates that no queue space is available.

Note
The FAIL action is ignored for all input devices except APPC and OTMA.

■ IWAIT

A task is scheduled to IWAIT the input device on the next attempt to insert a message.

■ IPOST

A task is started to restart an IMS input device that has been previously IWAITed by QPF. The task also restarts an OTMA TPIPE if QPF stopped it, and cancels any pending FAIL and STOP actions for the TPIPE.

■ STOP

A task is started to issue a stop command and wait for the response. Input devices are stopped the next time they attempt to insert a message.

Note
For information about the commands that the STOP action performs for various types of input devices, see “QPF actions” on page 309.

For a description about the QPF actions you can manually initiate, see “Manually initiating QPF actions” on page 305.
QPF command sets

QPF has commands, subcommands, statements, keywords, and parameters to accomplish its functions. These commands, subcommands, statements, keywords, and parameters are grouped together into command sets. Some of the statements can be repeated one or more times within a command set. This flexibility lets you be specific about how QPF will process.

Table 16 on page 211 lists the QPF commands, subcommands, and statements that you can use to build a particular command set.

Table 16: QPF command sets

<table>
<thead>
<tr>
<th>Command</th>
<th>Command Set</th>
<th>Subcommand/Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPF_ACTION</td>
<td>QPF_ACTION</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td></td>
</tr>
<tr>
<td>QPF_LIST</td>
<td>QPF_LIST</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td></td>
</tr>
<tr>
<td>QPF_OPTIONS</td>
<td>QPF_OPTIONS</td>
<td>MONITOR_PHASE</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td>PROTECT_PHASE</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td>ENFORCE statement</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td>PROCESS statement</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td>OVERFLOW_PHASE</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td>UNLOAD_DSN</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> The ENFORCE and PROCESS statements apply to actions occurring in the Protect phase only.</td>
</tr>
</tbody>
</table>

For more information about building command sets, see “Building a QPF_OPTIONS command set” on page 269.

Table 17 on page 211 briefly describes the function of each QPF command.

Table 17: QPF command functions

<table>
<thead>
<tr>
<th>Command</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPF_ACTION</td>
<td>Initiates actions against an identified message queue problem</td>
</tr>
<tr>
<td>QPF_LIST</td>
<td>■ Displays a list of message queue problems</td>
</tr>
<tr>
<td></td>
<td>■ Lists the active QPF options</td>
</tr>
</tbody>
</table>
QPF_OPTIONS

- Sets or replaces all automated tasks performed by QPF
- Loads or unloads QPF options
- Activates or deactivates QPF options
- Lists the active QPF options

QPF_ACTION and QPF_LIST

The QPF_ACTION and QPF_LIST commands normally function as internal system commands. For example, when you select option 8 (Queue Protection Facility) from the Message Advisor Primary Menu, the system initiates a QPF_LIST command set to build a QPF Problem List. This problem list shows the problem destinations and regions.

If you select an action to execute against a problem on the list, the system initiates a QPF_ACTION command set to perform the requested action.

Even though the QPF_ACTION and QPF_LIST commands normally function as internal system commands, you can build these command sets, if needed. These command sets can be built by using Edit in ISPF or the Message Advisor ISPF interface panels.

The QPF_LIST command is used to display the active QPF options. List the current QPF options by issuing a QPF_LIST command set that specifies `TYPE=OPTIONS`.

For information about the QPF_LIST and QPF_ACTION command, see “Manually initiating QPF actions” on page 305.

QPF_OPTIONS

All of the automated tasks performed by QPF are user-defined by using the QPF_OPTIONS command. A QPF_OPTIONS command set can be built by using Edit in ISPF or the Message Advisor ISPF interface panels.
Setting and replacing QPF options

When you initially set or replace the QPF options, the QPF_OPTIONS command set must contain the MONITOR_PHASE, PROTECT_PHASE, and OVERFLOW_PHASE subcommands.

The ENFORCE and PROCESS statements are optional, but recommended. These statements apply to processing that occurs in the Protect phase. Also, the UNLOAD_DSN subcommand is optional if no unload action is specified.

- The ENFORCE statement identifies automatic limits and restrictions that are used during the Protect phase to prevent new messages from being added to the message queues.

- The PROCESS statement identifies automatic actions to be initiated during the Protect phase to remove messages from the message queues.

- The UNLOAD_DSN subcommand is required when a PROCESS statement has specified ACTION=UNLOAD_DEQUEUE.
  The UNLOAD_DSN subcommand must be present in the QPF_OPTIONS command set to accomplish the following tasks:
  - Execute the QPF_ACTION command specifying ACTION=UNLOAD_DEQUEUE.
  - Issue the UNLOAD WTOR Action command.

Listing loading or unloading QPF options

When you use the QPF_OPTIONS command set to list, load, or unload QPF options, no subcommands or statements are allowed. Only the main command keywords may be used.

For an explanation about how to build a QPF_OPTIONS command set, see “Building a QPF_OPTIONS command set” on page 269.

For syntax diagrams, sample command sets, and descriptions of the subcommands, keywords, and parameters associated with each of the QPF commands, see the Message Advisor for IMS Reference Manual.

QPF states

After installation, QPF can be in any of the following states:
QPF automated processing

QPF automated processing operates in phases with each phase intensifying its activity from the previous phase.

Table 18 on page 215 briefly describes the phases.
Table 18: QPF phases

<table>
<thead>
<tr>
<th>QPF phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>The Active phase continuously tracks the use of the IMS message queues, but no processing occurs during this phase.</td>
</tr>
</tbody>
</table>
| Monitor   | The Monitor phase analyzes IMS message queues.  
**Note:** If the Monitor phase threshold is zero, the Monitor phase will begin immediately when QPF becomes active in your system. Under this circumstance, Active phase message tracking will occur, but it will seem to be part of the Monitor phase. |
| Protect   | The Protect phase processes user-defined tasks to reduce or prevent high queue usage. |
| Overflow  | The Overflow phase takes various actions, such as issuing a /CHE SNAPQ or IWAITing tasks attempting to insert messages to the queues. These actions may prevent an IMS outage or shorten the time required to recover if a queue overflows. |

By defining the QPF_OPTIONS command, you can control when each phase starts and the automated tasks performed during each phase. Once a QPF_OPTIONS command set is active in an IMS system, QPF continuously tracks the percentage of IMS queue usage to determine which processing phase, if any, should be in progress.

A phase starts when IMS message queue data set (SHMSG, LGMSG) exceeds the threshold for the phase. Reset criteria are used to define the end of a phase. The reset criteria consist of a percentage value and a time interval. The reset criteria are met when both queue data sets stay below the percentage value for the interval indicated, at which time, the phase ends.

When QPF escalates to the next phase, all activity for the previous phase continues while activity for the new phase is begun. If both message queues meet the reset criteria for a phase, the activity for that phase will end but the activity for the previous phase will continue.

For example, if QPF moves from the Monitor phase to the Protect phase, the user-defined tasks for the Protect phase will begin and the Monitor phase tasks will continue. If both IMS message queue data sets stay below the Protect phase reset threshold for a user-defined period, the Protect phase will end, but the Monitor phase will continue.
Figure 140 on page 216 shows how QPF moves from phase to phase when it is operational in an IMS system.

Table 19 on page 217 identifies the user-defined tasks that QPF can perform to track and manage message queues when it is active in an IMS system.
Table 19: Tasks associated with each QPF phase

<table>
<thead>
<tr>
<th>QPF phase</th>
<th>User-defined QPF tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overflow</td>
<td>■ Continue any Protect phase activities that are incomplete</td>
</tr>
<tr>
<td></td>
<td>■ IWAIT everything if requested</td>
</tr>
<tr>
<td></td>
<td>■ Stop all BMP and/or MPP regions if requested</td>
</tr>
<tr>
<td></td>
<td>■ Initiate a SNAPQ and/or DUMPQ if requested</td>
</tr>
<tr>
<td></td>
<td>■ Issue a WTOR when requested by the WTOR keyword</td>
</tr>
<tr>
<td></td>
<td>■ Issue a warning message that QPF is still in the Overflow phase at predefined intervals</td>
</tr>
<tr>
<td></td>
<td>■ Issue a warning message that the Overflow phase has begun to user-defined destinations (TSO userids, MVS console)</td>
</tr>
<tr>
<td></td>
<td>■ Issue user-defined operator commands each time the Overflow phase begins</td>
</tr>
<tr>
<td>Protect</td>
<td>■ Write log records to the IMS log</td>
</tr>
<tr>
<td></td>
<td>■ Process user-defined tasks to reduce the number of IMS messages and/or to prevent new IMS messages from being enqueued</td>
</tr>
<tr>
<td></td>
<td>■ Issue a WTOR when requested by the WTOR keyword</td>
</tr>
<tr>
<td></td>
<td>■ Issue a warning message that QPF is still in the Protect phase at predefined intervals</td>
</tr>
<tr>
<td></td>
<td>■ Issue a warning message that the Protect phase has begun to user-defined destinations (MTO, TSO userids, MVS console)</td>
</tr>
<tr>
<td></td>
<td>■ Issue user-defined operator commands each time the Protect phase begins</td>
</tr>
</tbody>
</table>
### Active phase

When QPF is active in your IMS system, it continuously tracks the use of the IMS message queues. It compares the use of the message queues against the thresholds defined on the QPF options to determine which phases should be in progress.

### Tracking task

Before the threshold for the Monitor phase is passed, QPF is in the Active phase. QPF will continuously track the state of the IMS message queues during the Active phase, but no other processing will occur. Therefore, this phase requires very little overhead processing.

You can set the threshold for the Monitor phase to meet the requirements of your site.

---

<table>
<thead>
<tr>
<th>QPF phase</th>
<th>User-defined QPF tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor</td>
<td>■ Continuously track queue record assignments</td>
</tr>
<tr>
<td></td>
<td>■ Analyze transaction queues</td>
</tr>
<tr>
<td></td>
<td>■ Analyze LTERM/user message queues</td>
</tr>
<tr>
<td></td>
<td>■ Analyze usage of temporary queues</td>
</tr>
<tr>
<td></td>
<td>■ Issue a WTOR when requested by the WTOR keyword</td>
</tr>
<tr>
<td></td>
<td>■ Issue a warning message that QPF is still in the Monitor phase at predefined intervals</td>
</tr>
<tr>
<td></td>
<td>■ Issue user-defined operator commands each time the Monitor phase begins</td>
</tr>
<tr>
<td>Active</td>
<td>Continuously track use of message queues</td>
</tr>
</tbody>
</table>

**Note:** After the message queue usage reaches the threshold for the Monitor phase, you can generate a problem list that includes messages in progress, temporary queues, and destinations with the highest record and message counts. You can initiate a corrective action against any problem on the list. Problem lists can also be generated during the Protect phase and the Overflow phase.
<table>
<thead>
<tr>
<th>Task</th>
<th>Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin analyzing the message queues when queue usage is slightly higher than normal day-to-day processing</td>
<td>Set the Monitor phase THRESHOLD% to a value that is slightly higher than is normal for day-to-day processing at your site.</td>
</tr>
<tr>
<td>Begin analyzing the message queues immediately when QPF initializes</td>
<td>Set the Monitor phase THRESHOLD% to zero.</td>
</tr>
</tbody>
</table>

If the Monitor phase threshold is zero, the Monitor phase will begin immediately when QPF becomes active in your system. Under this circumstance, Active phase message tracking will occur, but it will seem to be part of the Monitor phase.

**Transition from active phase**

QPF will continue the Active phase task of tracking the message queues until the following events occur:

- **QPF becomes inactive**
  
  QPF can be made inactive by issuing the `QPF_OPTIONS ACTIVE=NO` command set.

- **QPF is unloaded**
  
  QPF will automatically unload if a severe error occurs during QPF processing. Also, you may want to unload QPF under certain circumstances. For example, when applying maintenance, you may need to unload QPF to pick up changes that have been made to the QPF STEPLIB, or to apply fixes without having to restart IMS.

  QPF can be unloaded by issuing the `QPF_OPTIONS TYPE=UNLOAD` command set. Most storage will be freed, and all QPF tasks will terminate. QPF will perform no processing, but IMS processing continues uninterrupted.

  QPF can be reloaded by issuing the `QPF_OPTIONS TYPE=LOAD` command set.

If SHMSG or LGMSG usage reaches the threshold value for the Monitor phase, QPF will initiate the Monitor phase.

---

**Note**

Even though the Monitor phase begins when the queue usage reaches the user-defined threshold for that phase, Active phase processing continues.
Monitor phase

QPF initiates the Monitor phase if SHMSG or LGMSG usage reaches the user-defined threshold for the Monitor phase.

When QPF initiates the Monitor phase, it begins communicating information about the state of the message queues and analyzing the contents of the queues. During the Monitor phase, no automated corrective actions are taken.

Although automated actions are not initiated during the Monitor phase, any time after the phase begins, the QPF Problem List can be manually generated. The QPF Problem List includes messages in progress, temporary queue usage, and destinations with the highest record and message counts. Counters which are in doubt will be marked incomplete in the list. You can manually initiate a corrective action against any problem on the list. A QPF Problem List can also be generated during the Protect phase and the Overflow phase.

Communications tasks

QPF performs the following communications tasks during the Monitor phase:

- Issues any user-specified MVS operator command that should be issued each time the Monitor phase begins
  The operator command is requested by the AUTO_CMD keyword. The AUTO_CMD keyword allows further flexibility in performing automated actions. You can use this keyword to specify an MVS operator command that QPF will issue each time the phase starts.
  For example, this command could initiate a Message Advisor task to dequeue unnecessary destinations or to display a limited number of destinations with the highest queue counts.

- Issues a warning message when the Monitor phase begins and ends
  The messages indicate the name of the phase and the usage of the message queue data sets. These messages are sent to user-defined destinations such as the MTO, TSO userids, and the MVS console. The destinations that receive these messages are defined by the NOTIFY keyword.

- Issues a warning message that QPF continues to be in the Monitor phase at predefined intervals which you have set
  The NOTIFY message will be repeated each time for one of the following reasons:
    - The queue usage increases or decreases by the NOTIFY% value,
—The interval of time between messages defined by the NOTIFY_INTERVAL keyword is reached, whichever comes first.

For example, if the Monitor phase THRESHOLD%=10, the NOTIFY%=5, and the NOTIFY_INTERVAL=10, the following NOTIFY messages will be sent during the Monitor phase:

—A message will be sent when message queue usage reaches 10 percent (THRESHOLD%) and the Monitor phase starts.

—The message will be repeated each time the message queue usages grows 5 percent (NOTIFY%) or an additional 10 minutes (NOTIFY_INTERVAL) has passed, whichever comes first.

Message notification is handled in the same way in all phases.

■ Issues a WTOR when requested by the WTOR keyword

If WTOR=YES is specified for the Monitor phase, a WTOR will be issued at the start of the phase. You can issue operator action commands through this WTOR.

Analysis tasks

QPF analyzes the following message queues during the Monitor phase:

■ Temporary queues
■ LTERM/User message queues
■ Transaction queues

To accomplish this analysis, QPF performs the following tasks:

■ Creates a record tracking table

The record tracking table will be used to track record counts for the message queues. If the MAX_REGION keyword is set to zero, this table will grow as large as necessary to track all destinations which have messages queued, as well as all regions and input devices which are generating messages.

■ Initiates continuous record tracking

Once the table is initialized, continuous record tracking begins. When a DRRN is assigned, enqueued, or released, the counts in the table will be updated. Counters will be kept for each message in progress, each temporary queue, and each permanent destination. A new entry will be added to the table when necessary. If MAX_REGION is reached, the lower quarter of the table will be discarded to make room for new entries. When a counter is created for a message or queue that
has previous records or messages assigned, the counter will be marked in doubt, indicating that the previous records and messages must be counted.

In the meantime, QPF will be scanning all existing destinations, temporary queues, and messages in progress, adding counters to the table for these. They will initially be marked in doubt.

Once the initial scan is complete, QPF will scan for in doubt counters. For each one, a QPF ITASK will be scheduled to count the records and resolve the in doubt counters. Temporary queues and messages in progress are counted first, followed by destinations starting with those with the largest number of messages queued. Counting existing records requires I/O to read the message queues, and may take some time to complete.

After the Monitor phase begins, a problem list can be displayed. This list will include messages in progress, temporary queues, and destinations with the highest record and message counts. Counters which are in doubt will be marked incomplete in the list.

### Transition from Monitor phase

QPF continues all Monitor phase tasks until both the SHMSG and the LGMSG data sets stay below the Monitor phase reset threshold for a user-defined period. In this event, QPF reverts to the Active phase.

The reset threshold is defined by the RESET% keyword. The period that queue usage must stay below this threshold is defined by the RESET_TIME keyword. The following example illustrates how these keywords function:

```
MONITOR_PHASE THRESHOLD%=5,RESET%=3,RESET_TIME=10
```

This command indicates that the Monitor phase will continue until the queue usage is below 5 percent for 10 minutes. Both the RESET% and the RESET_TIME must be satisfied before the phase stops. When THRESHOLD% is equal to RESET%, the RESET_TIME is forced to at least one minute, but the default is 15 minutes for this phase.

The RESET% and RESET_TIME keywords function in the same manner during the Protect phase and the Overflow phase. However, the default for the Protect phase is one minute and the default for the Overflow phase is zero.

If SHMSG or LGMSG usage reaches the threshold value for the Protect phase, QPF will initiate the Protect phase.
Note

Even though the Protect phase begins when the queue usage reaches the user-defined value for that phase, Active phase and Monitor phase processing continues. For production systems, BMC Software recommends that the Monitor Phase be set at zero percent to reduce user impact.

Protect phase

QPF initiates the Protect phase if SHMSG or LGMSG usage reaches the user-defined threshold for the Protect phase.

When QPF initiates the Protect phase, it continues to communicate information about the state of the message queues and begins a series of processing tasks to reduce the levels of the queues. This processing is defined by using PROCESS and ENFORCE statements. The processing tasks which are defined in the Protect phase are the actions which are meant to automatically relieve high message queue utilization.

Communications tasks

QPF performs the following communications tasks during the Protect phase:

- Issues any user-specified MVS operator command that should be issued each time the Protect phase begins

  The operator command is requested by the AUTO_CMD keyword. The AUTO_CMD keyword allows further flexibility in performing automated actions. You can use this keyword to specify an MVS operator command that QPF will issue each time the phase starts.
  
  For example, this command could initiate a Message Advisor task to dequeue all DEADQ messages.

- Issues a warning message when the Protect phase begins and ends

  The messages indicate the name of the phase and the usage of the message queue data sets. These messages are sent to user-defined destinations such as the MTO, TSO userids, and the MVS console.
  
  The destinations that receive these messages are defined by the NOTIFY keyword. Messages are also sent when any processing action is taken. These messages indicate the destination or origin affected, the action taken, and the relative number of the ENFORCE or PROCESS statement that caused the action.
- Issues a warning message that QPF continues to be in the Protect phase at predefined intervals
  The NOTIFY message will be repeated each time the THRESHOLD% for the Monitor phase increases by the NOTIFY% value or each time the interval of time between messages defined by the NOTIFY_INTERVAL keyword is reached, whichever comes first.

- Issues a WTOR when requested by the WTOR keyword
  If WTOR=YES is specified for the Monitor phase, a WTOR will be issued at the start of the phase. You can issue operator action commands through this WTOR.

**Processing tasks**

During the Protect phase, you can set the QPF options to perform processing tasks to reduce high-queue levels.

These processing tasks are user-defined by using PROCESS and ENFORCE statements. These statements represent actions to be taken for destinations, destination types, or origins based on various parameters.

Specifying PROCESS and ENFORCE statements is optional. However, if these statements are not specified, only the AUTO_CMD keyword can be used to execute an automated action during this phase.

The UNLOAD_DSN subcommand is required if any UNLOAD_DEQUEUE actions are specified by using a PROCESS statement. This subcommand is also required in the QPF_OPTIONS command set if UNLOAD_DEQUEUE is specified by using a QPF_ACTION command set or an operator WTOR action command.

**PROCESS statements**

PROCESS statements are optional.

They are used to indicate automated actions to be taken during the Protect phase to reduce the number of messages on the message queues.

QPF scans the record tracking table for the destinations with the highest queue usage. Only message queue data sets above the threshold are considered in determining queue usage.

For example, if the SHMSG queue is above the Protect phase threshold, the destination with the highest usage of SHMSG records is selected first. If both data sets are above the Protect phase threshold, QPF will alternate between destinations by using the most LGMSG records and those using the most SHMSG records.
Destinations are processed one at a time until the message queue shortage is relieved, starting with the destination with the largest queue usage. Therefore, if `PROCESS DEST=*,ACTION=UNLOAD_DEQUEUE` is specified, it does not mean that all messages are unloaded.

**Order of PROCESS statements**

The order of PROCESS statements within a QPF_OPTIONS command set is important. For more information about this topic, see “PROCESS and ENFORCE statement order” on page 273.

**PROCESS statement actions**

When a problem destination is selected, QPF will scan the PROCESS statements for a match. If a match is found, the requested action will be taken. If no match is found, QPF will ignore the destination and select another.

If a matching PROCESS statement is found, the requested action can be NONE or any combination of the other actions.

- **NONE**
  Do nothing for this destination; select another destination.

- **WARN**
  A message is issued to the recipients indicated on the NOTIFY keyword as actions are performed. The message indicates the destination name, the relative number of the PROCESS statement that it matches, and the status of the action.

- **STOP**
  If the destination is not already stopped, an IMS /STOP command is issued to stop the node or LTERM.

- **DEQUEUE**
  Queued messages will be deleted.

- **UNLOAD_DEQUEUE**
  Messages will be unloaded and deleted.

  **UNLOAD_DEQUEUE** may be shortened to **UNLOAD** and is usually referred to as such. QPF does not contain an "unload only" action since that would not resolve any message queue problems.

  **Note**

  An UNLOAD_DSN subcommand must be present in the QPF_OPTIONS command set if this action is requested. This subcommand identifies data sets to be used for the unloaded messages.
ENFORCE statements

Although ENFORCE statements are optional, they can be an effective message queue management tool. They identify automatic limits and restrictions which are enforced during the Protect phase to prevent additional messages from being enqueued. These limits and restrictions apply to application programs and input devices which match an ENFORCE statement.

Order of ENFORCE statements

The order of ENFORCE statements within a QPF_OPTIONS command set is important. For more information about this topic, see “PROCESS and ENFORCE statement order” on page 273.

ENFORCE statement actions

When the Protect phase starts, ENFORCE statement processing also begins. To detect applications that are looping between commit points, ENFORCE statements are checked each time a message is inserted. ENFORCE statements are also checked at each commit point and at each enqueue to detect applications and input devices that are contributing to backed-up destination queues.

When a match is found, the requested action can be NONE or any combination of the other actions.

- **NONE**
  No action will be taken during the Protect phase.

- **WARN**
  A message will be sent to the recipients indicated by the NOTIFY keyword. This message will only be sent for the first match. Any other action may be combined with WARN and will also occur on the first match.

- **STOP**
  The region or the input node is stopped. When a STOP is requested at a commit point or enqueue, the STOP remains pending until the next insert.

- **FAIL**
  A status code (indicated by the STATUS_CODE keyword) is returned to the application. The FAIL action will be repeated each time the statement matches unless another action is also specified. If another action is specified, the status code is only returned for the first match and the other action is taken on the next match.
  
  For APPC, a task is scheduled to deallocate the input device. For OTMA, a task is scheduled to reject all subsequent input messages with either a NAK or a DFS1289
message to the client. The NAK or message indicates that no queue space is available.

**Note**
The FAIL action is ignored for all input devices except APPC and OTMA.

FAIL has no meaning and is ignored for enqueues and commits that IMS performs on behalf of an application after the application program completes. A FAIL can only be performed when an application CHKP call results in a commit, or when an application ISRT call results in a match.

- **ABEND**
The application is abended. The ABEND action is not supported for input devices.

- **IWAIT**
The application or input device is put into a wait until the Protect phase terminates or a manual IPOST action is used to restart it. When an IWAIT is requested at a commit point or enqueue, the IWAIT remains pending until the next insert.

ENFORCE actions are processed in a specific order. The order is as follows:

- If WARN is specified, this action will occur on the first insert, enqueue, or commit that matches.

- If STOP is specified, this action will occur on the first insert, enqueue, or commit that matches.

- Only one of the FAIL, ABEND, and IWAIT actions will be taken on each insert that matches. If a statement specifies more than one of these actions, the actions will be processed in FAIL, ABEND, IWAIT order. The first of these actions is taken on the first insert, the second action is taken on the second insert, and the last action is repeated for each subsequent insert. For example, if FAIL and ABEND are specified, the FAIL action is taken on the first insert only, and the ABEND action is taken on each subsequent insert.

- Since inserts to multiple destinations may be committed at the same time, multiple ENFORCE statements may match at an enqueue or a commit point. Each matching statement is processed in the same manner as inserts are processed, and warning messages are issued as requested for each matching statement. However, if any matching statement results in a pending IWAIT or a pending STOP, subsequent matching statements are ignored. If any matching statement results in an ABEND, FAIL actions on subsequent statements are not performed.

The following example illustrates the processing order of ENFORCE statement actions:
Example

Processing will occur in the following order if `ACTION=WARN,STOP,FAIL,IWAIT`:

- On the first insert, WARN, STOP, and FAIL are processed.
- On the second and subsequent inserts, IWAIT is processed.

Execution mode for PROCESS and ENFORCE statements

During the Protect phase, the MODE keyword determines the execution mode of the PROCESS and ENFORCE statements. The MODE parameters are as follows:

- **MODE=WARN** indicates that warning messages will be sent to the recipients on the NOTIFY keyword, but NO action will be taken.
- **MODE=LOG** indicates that an IMS log record will be written, but no action taken.
- **MODE=PROCESS** implies **MODE=LOG** and indicates that the actions requested are to be performed and logged, but no warning messages will be issued.
- **MODE=REPEAT** implies **MODE=PROCESS** and indicates that actions may be repeated as necessary.
- **MODE=ALL** indicates that actions are performed and logged, repeated if necessary, and warning messages are issued.
- **MODE=NONE** indicates that ENFORCE and PROCESS statements are to be ignored. This can be used to turn off processing without removing the statements.

BMC Software recommends that you start QPF in log-only or warn-only mode after changing or adding any ENFORCE or PROCESS statements. This action is used to see what actions QPF will take and to verify that the statements are coded correctly without actually taking any action.

For more information about the MODE keyword, see the *Message Advisor for IMS Reference Manual*.

Transition from Protect phase

QPF continues all Protect phase processing until both the SHMSG and LGMSG data sets stay below the Protect phase reset threshold for a user-defined period. In this event, QPF drops back to the Monitor phase.
The reset threshold is defined by the RESET% keyword. The period that queue usage must stay below this threshold is defined by the RESET_TIME keyword. The RESET_TIME default is one minute.

If SHMSG or LGMSG usage reaches the threshold for the Overflow phase, QPF will initiate the Overflow phase.

**Note**

Even though the Overflow phase begins when the queue usage reaches the user-defined value for that phase, Active phase, Monitor phase, and Protect phase processing continues.

---

### Overflow phase

QPF initiates the Overflow phase if SHMSG or LGMSG usage reaches the user-defined threshold for the Overflow phase.

When QPF initiates the Overflow phase, IMS is in danger of imminent shutdown. During this phase, QPF begins a series of processing tasks to prevent an outage or shorten the time required to recover if a queue overflows. Also, during this phase QPF continues to communicate information about the state of the message queues.

### Communications tasks

QPF performs the following communications tasks during the Overflow phase:

- Issues any user-specified MVS operator command that should be issued each time the Overflow phase begins
  
The operator command is requested by the AUTO_CMD keyword. The AUTO_CMD keyword allows further flexibility in performing automated actions. You can use this keyword to specify an MVS operator command that QPF will issue each time the phase starts.
  
  For example, issue a START command to submit a batch job that will dequeue DEADQ destinations.

- Issues a warning message when the Overflow phase begins and ends
  
The messages indicate the name of the phase and the usage of the message queue data sets. These messages are sent to user-defined destinations such as the TSO userids and the MVS console.
  
  The destinations that receive these messages are defined by the NOTIFY keyword.
### Note

Messages are not sent to the MTO during the Overflow phase. If MTO is specified by the NOTIFY keyword, the messages will be sent to the MVS console.

- **Issues a warning message that QPF continues to be in the Overflow phase at user-defined intervals**
  
  The NOTIFY message will be repeated each time the THRESHOLD% for the Monitor phase increases by the NOTIFY% value or each time the interval of time between messages defined by the NOTIFY_INTERVAL keyword is reached, whichever comes first.

- **Issues a WTOR if it has been requested by the WTOR keyword**
  
  If WTOR=YES is specified for the Overflow phase, a WTOR will be issued at the start of the phase. You can issue a QPF_LIST or QPF_ACTION command through the WTOR. SNAPQ and DUMPQ commands can also be issued through a WTOR during the Overflow phase.

### Processing tasks

The following processing tasks occur during the Overflow phase:

- **IWAIT**
  
  IWAIT any task attempting to insert messages to the queue.

  Any ITASK (systems components may optionally be excluded) that attempts to insert a message to the message queue will be IWAITed. The task will remain in a wait until the Overflow phase terminates. This action prevents the last remaining message queue records from being used, which would otherwise cause an IMS shutdown.

  By IWAITing these tasks, there will be enough time to manually address problems not covered in the user-defined subcommands for the Protect phase. IMS will remain available and you will avoid a BUILDQ restart, thus maintaining IMS availability.

  If IWAIT has been specified, any QPF task initiated during the Protect phase will run to completion in the Overflow phase.

- **DUMPQ**
  
  Initiate an IMS DUMPQ shutdown.

  If a DUMPQ is taken, it will reduce the time it takes to perform a BUILDQ, thus reducing the IMS restart time.
- **SNAPQ**
  Initiate an IMS SNAPQ.
  If a SNAPQ is taken, it will reduce the time it takes to perform a BUILDQ, thus
  reducing the IMS restart time.

- **STOP**
  Stop all BMP/MPP regions.

- **NONE**
  No action is taken.

**Transition from Overflow phase**

QPF remains in the Overflow phase unless the following events occur:

- *Both* the SHMSG and the LGMSG data sets stay below the value of the Overflow
  phase reset threshold for a user-defined period. In this event, QPF will continue
  Active phase, Monitor phase, and Protect phase processing.

  The reset threshold is defined by the RESET% keyword. The period that queue
  usage must stay below this threshold is defined by the RESET_TIME keyword.
  The RESET_TIME default is zero, unless the THRESHOLD% and RESET% values
  are equal. In this case, the RESET_TIME default value is zero.

- The IMS system shuts down for any of the following reasons:

  — The user requested a QPF initiated DUMPQ.

  — The user requested an IMS shutdown by entering an IMS command such as /CHE
    DUMPQ or /CHE FREEZE or by failing or cancelling the IMS control
    region.

  — The user responded to the QPF WTOR or used the QPF_ACTION command to
    post an MPP or BMP to continue processing.

  — The user did not predefine an IWAIT and did not define enough PROCESS or
    ENFORCE statements to prevent a shutdown.
Define the QPF options

This chapter describes the methods that you should use to define the Message Advisor Queue Protection Facility (QPF) options.

Overview

QPF is designed to track your IMS system(s) and to take user-defined actions to prevent IMS outages caused by queue overflow. QPF processing occurs in the following four phases: Active Phase, Monitor Phase, Protect Phase, and Overflow Phase. The tasks that are performed in the phases are user-defined by using the QPF_OPTIONS command.

QPF is a very flexible tool that can be tailored to address the specific requirements of each IMS system in your environment. This is done by setting the QPF options to fit your needs. However, the flexibility of the product also means that setting the QPF options is a complex task that requires you to analyze each of your IMS systems. Additionally, you need to understand the purpose of each QPF keyword and the implications of the values that you set for each keyword.

This chapter describes a methodology that you should employ to analyze your IMS systems, develop a plan to resolve identified problems, and build a QPF_OPTIONS command set to implement the plan.

The following subjects are discussed:

- Analysis and planning methodology
  BMC Software recommends that you use the methodology discussed in this chapter when analyzing your IMS systems and developing a plan to address identified problems.

- Defining QPF options
  A test case is provided as a step-by-step illustration of the analysis and planning methodology. The test case takes you from historical analysis through testing of a QPF_OPTIONS command set.
Testing a QPF_OPTIONS command set

Two Message Advisor test applications are provided with the product. You can define the test applications to simulate the conditions that cause the queue overflow problems described in the test case. If you are running a trial of the product or you have just installed it, testing the QPF_OPTIONS command set created in the test case will illustrate how QPF manages message queues.

For more information about setting QPF options, see the following information:

- “About the Message Advisor Queue Protection Facility” on page 203 describes the features and functions of QPF.
- “Building a QPF_OPTIONS command set” on page 269 explains how to build a QPF_OPTIONS command set.
- The Message Advisor for IMS Reference Manual provides syntax diagrams, sample command sets, and descriptions of the subcommands, statements, keywords, and parameters associated with the QPF_OPTIONS command.

Analysis and planning methods

With QPF, you can customize monitoring, warning, and preventive action features of the QPF_OPTIONS command to the particular requirements of your IMS environment, system by system. To ensure that you set the QPF options for maximum benefit to each IMS system, you must analyze the types of overflow problems that have occurred in the past and the day-to-day queue usage of each system. This type of analysis will help you identify specific actions to keep these problems from affecting your IMS availability.

This section describes methods for developing this information. The methods include the following tasks:

- Collect and analyze data.
  This information includes historical data on queue overflow occurrences in each IMS system and data on normal processing cycles for each system.
- Develop a plan to prevent or reduce message queue overflow.
- Implement the plan.
- Test the plan.
“Defining QPF options—a test case” on page 237 illustrates how to apply the methodology described in this chapter to analyze your IMS systems, develop a plan to resolve identified problems, and implement the plan to prevent these problems from affecting IMS availability.

Collect and analyze data

Collect data on the historical occurrences of queue overflow in each of your IMS systems over the past several years. Analysis of the outages will provide information useful when setting QPF options. Additionally, collect data on the day-to-day queue utilization for these systems.

Historical analysis

Historical analysis of each IMS system should encompass all available information about each system for the past several years and include the following information:

- Identify the queue overflow occurrences in each IMS system.
- Determine the characteristics of each occurrence.
- Identify the actions that were taken to recover.
- Group the queue overflow occurrences by type of problem based on a common set of criteria.
  The following problems are typical of the types of queue overflow occurrences that a large organization running many IMS systems might encounter:
  - A runaway BMP inserts a large number of messages in the queues.
  - A computer or link failure causes outbound messages to fill the queues.
  - Legacy applications continue to queue reports to printers that no longer exist.

Day-to-day queue analysis

Analysis of the day-to-day queue activity for each IMS system should include the following information:

- Identify the high volume BMPs by PSB name.
- Determine normal message queue utilization.
- Determine the "high water mark" message queue utilization. Determine how often this level of utilization is reached (daily, weekly, monthly)

- Determine the acceptable queue counts for the following categories of LTERM and transactions at various processing cycles (e.g., monthly or yearly):
  - Printers
  - ISC/MSC links
  - BMP processing
  - Exception processing
  - Within applications (requirements and needs of an application that is not within the norm of other applications)

QPF can help you gather and verify this information if you have activated a QPF_OPTIONS commands set in your IMS system with MODE=WARN or MODE=LOG defined.

**Develop a plan**

Based on the information that you have collected and analyzed on queue overflow occurrences and queue usage, determine what actions should be taken to keep these problems from affecting your IMS availability.

Table 20 on page 236 shows possible solutions to the types of queue overflow occurrences you might typically expect to encounter.

**Table 20: Examples of queue overflow occurrences and proposed solutions**

<table>
<thead>
<tr>
<th>Examples of queue overflow occurrences</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A runaway BMP inserts a large number of messages in the queues.</td>
<td>Abend the BMP.</td>
</tr>
<tr>
<td>A computer or link failure causes outbound messages to fill the queues.</td>
<td>Stop the origin of the messages or unload and dequeue the messages.</td>
</tr>
<tr>
<td>Reports that are no longer needed continue to be queued by legacy applications. Since these messages are not pulled off the queues, they slowly fill the message queues.</td>
<td>Dequeue and unload the messages.</td>
</tr>
</tbody>
</table>
Implement the plan

When you have determined what must be done to keep these problems from affecting your IMS availability, you have the information that you need to define the QPF options that will implement your plan.

For an example about how to implement a plan, see “Defining QPF options—a test case” on page 237.

Test the plan

A QPF_OPTIONS command set should be tested before activation in a production environment. It is particularly important to test the QPF_OPTIONS command set if you are setting the options for the first time.

The command set can be tested by using the Message Advisor Test Applications provided by BMC Software. By testing the command set, you will determine whether QPF is addressing the occurrences of queue overflow in your IMS system. You will see whether QPF performs as you expect. If you are not satisfied with the performance of the command set, redefine the options and continue running QPF in your test environment until you are satisfied with the results.

For information about testing QPF_OPTIONS command sets, see the following text:

- “Testing the test case QPF_OPTIONS command set” on page 245
- “Test a command set” on page 302
- “Message Advisor test applications” on page 393

Message queue analysis and plan development should be repeated periodically. How often this type of review is performed depends on how much your environment changes.

Defining QPF options—a test case

One of the most powerful features of QPF is its flexibility. The QPF options can be user-defined to address the specific requirements of each IMS system in your environment. However, the flexibility of the product also means that setting the QPF options is a complex task that requires detailed knowledge of each of your IMS systems plus a thorough understanding of the purpose of each QPF keyword and the implications of the values that you set.
BMC Software has developed the test case presented in this section as a specific example of how to define the QPF options. The test case has two purposes:

- It applies the recommended methodology for defining the QPF options, which is described in “Analysis and planning methods” on page 234. The test case illustrates how a typical IMS/TM shop might go about the process of analyzing occurrences of queue overflow in IMS systems and identifying specific actions to prevent these problems from affecting IMS availability.

- It increases your understanding of how to use the QPF subcommands, statements, keywords, and parameters. The relationships of various subcommands and keywords and the implications of using specific combinations of keywords are explained through the test case.

**Note**

When you are setting QPF options for the first time, BMC Software recommends that you analyze your IMS systems, identify the message queue problems, develop a preventive plan, and test the plan. Because of the complexity of the QPF options, it is difficult to set the QPF options to optimally benefit your IMS systems if you have not gone through this developmental process.

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**Test case assumptions**

The following assumptions are made about the IMS systems described in this test case:

- These are critical-path IMS systems requiring high availability.

- Once a month, the IMS systems are brought down for maintenance and then cold-started.

- The Message Advisor Queue Protection Facility is installed to protect the availability of these IMS systems.

---

**Collect and analyze data**

This test case is based on data collected on the past and present queue performance of the PRD1 IMS system. Historical and day-to-day analysis of this system has identified the following queue overflow problems.
Historical data

Historical analysis shows that during the past 2 years, the following queue related outages have occurred on the production system:

- **ABENDU0758**—A BMP named QPFBMP was looping and sending thousands of pages of output to a printer. The problem was difficult to diagnose because no checkpoint was being issued. Thus, all the output was queued to the temporary queue, and it could not be identified by using /DISPLAY commands.

- **ABENDU0758**—An abend occurred on PRD1 when another IMS system abnormally terminated. Thousands of remote transactions (RSMBs) from the Sales applications queued on PRD1 while waiting for transmission to the failed system.

- **IMS internal/CHE DUMPQ**—A large number of messages were queued to a few printers that, although SYSGENed to IMS, did not exist on the network. Further investigation revealed that the Sales applications continue to print a series of detailed reports that are no longer required. Because of a large application backlog, there has not been time to change the Sales applications. The LTERMIs have been assigned to dummy nodes and allowed to queue until they are deleted at each cold start. The reports are queued to LTERMIs named ARFR*.

Day-to-day data

The collection and analysis of data on the day-to-day performance of the PRD1 system provides the following information:

- The queues normally remain between 0 percent and 20 percent full.

- No more than 50 messages normally are queued to any LTERM (CNT).

- Despite a DEADQ limit of 14 days, there are often a number of DEADQ destinations.

- A BMP named QPFBMP2 uses up to 50 percent of the large message queue during its monthly processing. QPFBMP2 inserts transactions for processing and sends reports to various departments. Follow-up with the applications staff indicates that this percentage will probably be even higher during peak months. This BMP must run to completion.

Develop a plan

Based on the historical and day-to-day analysis of the PRD1 IMS system, the following plan was developed:

- Set the thresholds for the QPF phases as follows:
—Set the Monitor Phase to begin at 0 percent because no harm is caused by continuous monitoring.

—Set the Protect Phase to begin at 60 percent.

—Set the Overflow Phase to begin at 80 percent to ensure that there will be room to resolve any problems without getting an ABENDU0758.

■ Set a generic rule not to allow a BMP to use more than 40 percent of queue as temporary queue space. This rule will address the type of abend that occurred with QPFBMP. QPFBMP2 is outside the norm for BMPs in this environment; so a separate rule, taking no action, will be prepared.

■ In an MSC environment, if a related IMS system goes down, stop the RSMBs so additional input will not be accepted. Unload and dequeue all the RSMBs, freeing the queue space until the failed system is restarted. Then requeue all the messages and /START the RSMBs.

■ Issue an UNLOAD_DEQUEUE command against any destination that has 100 or more messages queued to it.
   This decision is based on the analysis of the day-to-day processing, which indicates that it is unusual for any destination to have more than 50 messages queued to it. Therefore, it is probably indicative of a problem if 100 or more messages are queued to a destination.

■ Issue a DEQUEUE command against any messages sent by the legacy Sales application to the ARFR* printers.

■ At the Overflow Phase, IWAIT all tasks that attempt to insert messages to the queues.
   IWAITing all tasks that attempt to insert messages to the queues will provide enough time to determine the cause of the problem. IMS will remain available, thus minimizing the impact as much as possible.

### Implement the plan (build a QPF_OPTIONS command set)

The plan developed for this test case is implemented by building a QPF_OPTIONS command set.

The QPF_OPTIONS subcommands, statements, and keywords are set so that QPF will automatically monitor the IMS systems and take the corrective actions defined in “Develop a plan” on page 239.

To specifically implement the plan developed in this test case, BMC Software has developed the Test Case QPF_OPTIONS command set. This command set is located in MAQSAMP member QPF@OPT2.
The Test Case QPF_OPTIONS command set is displayed in Figure 141 on page 241. An explanation about each segment of the command set follows the display of the full command set.

For a syntax diagram and a full description of each subcommand, keyword, and parameter associated with the QPF_OPTIONS command set, see the Message Advisor for IMS Reference Manual.

**Figure 141: Command set: test case QPF_OPTIONS**

**Command descriptions**

Each segment of the command set is displayed below. The purpose of each segment is explained, and the specific keyword used to specify an option is supplied in parentheses.

**QPF_OPTIONS general keywords**

The General keywords are those command keywords that are not associated with a specific subcommand or statement. These keywords govern global command functions such as identifying the targeted IMS system and specifying whether QPF is active.

These General keywords request that QPF options be set (TYPE) for PRD1 (IMSID) and to activate (ACTIVE) them. In addition, up to 5 megabytes of private storage can be used by QPF (MAX_REGION). Most storage used by QPF is in the extended private area, and it is used primarily for building the record-tracking tables.
MONITOR_PHASE keywords

MONITOR_PHASE THRESHOLD%=0,RESET%=0,
NOTIFY=(WTO,MTO),NOTIFY%=10,
WTOR= YES

These keywords request that the Monitor Phase begin at IMS initialization (THRESHOLD%) and that a warning message be sent to the WTO and MTO (NOTIFY). A WTOR will also be issued to the console so that manual QPF commands can be entered from the console (WTOR). Each time the queue grows by 10 percent (NOTIFY%), reissue the warning message to the WTO and the MTO. When THRESHOLD%=0, the Monitor Phase will always remain active and the RESET% keyword will be ignored.

PROTECT_PHASE keywords

PROTECT_PHASE THRESHOLD%=60,RESET%=55,RESET_TIME=5,
NOTIFY=(WTO,MTO),NOTIFY%=5,NOTIFY_INTERVAL=5, 
WTOR= YES, MODE= ALL

These keywords request that when the LGMSG or the SHMSG queue reaches 60-percent capacity (THRESHOLD%), a warning message be issued to the WTO and MTO (NOTIFY). Each time the queue grows by 5 percent (NOTIFY%) or 5 minutes passes (NOTIFY_INTERVAL), reissue the warning message to the WTO and MTO. A WTOR will also be issued to the console (WTOR). For any ENFORCE or PROCESS commands supplied (MODE), perform all processing actions—LOG, WARN, and PROCESS. When the queue has been below 55 percent (RESET%) for 5 minutes (RESET_TIME), QPF will drop back to the Monitor Phase.

PROCESS keywords

PROCESS DESTYPE=CNT,#MSGS=10,DEST=ARFR*,
ACTION=(WARN,DEQUEUE), THRESHOLD%=62

These keywords request that if any CNT (DESTYPE) destination starting with ARFR (DEST) has at least 10 messages (#MSGS), issue a warning message (ACTION), then dequeue the messages (ACTION). These actions will not occur until the LGMSG or the SHMSG queue reaches 62-percent capacity (THRESHOLD%).

Specifying a threshold percentage for each of the PROCESS statements in the command set allows the statements to be executed gradually.
If the NOTIFY keyword is specified for an ENFORCE or PROCESS statement, it will override any NOTIFY keyword specified on the PROTECT_PHASE statement. When NOTIFY is specified by type of statement, it will apply only to messages generated as a result of the specific ENFORCE or PROCESS statement.

If an ENFORCE or PROCESS statement specifies ACTION=WARN but does not specify a NOTIFY keyword, the NOTIFY keyword specified in the PROTECT_PHASE segment will apply.

**Process**

```plaintext
PROCESS DESTYPE=CNT,#MSGS=100,
  ACTION=(WARN,UNLOAD_DEQUEUE),THRESHOLD%=65
```

These keywords request that if a CNT (DESTYPE) has at least 100 messages (#MSGS) queued to it, issue a warning message (ACTION), then unload and dequeue the messages (ACTION). These actions will not occur until the LGMSG or the SHMSG queue reaches 65-percent capacity (THRESHOLD%).

```plaintext
PROCESS DESTYPE=RSMB,%USED=10,
  NOTIFY=(userid1),ACTION=(WARN,STOP)
```

These keywords request that if a RSMB (DESTYPE) is using more than 10 percent (%USED) of a queue data set, issue a warning message and stop the RSMB (ACTION).

**ENFORCE keywords**

```plaintext
ENFORCE TYPE=BMP,PSB=QPFBMP2,ACTION=NONE,%USED=0
```

These keywords request that no action be taken (ACTION) for the BMP (TYPE) whose PSB is QPFBMP2 (PSB), regardless of the number of messages and records on its temporary queue or on the destination queue at commit time.

```plaintext
ENFORCE TYPE=BMP,%USED=40,ACTION=FAIL
```

These keywords request that if any BMP (other than QPFBMP2 because of the first ENFORCE statement) uses more than 40 percent of message queue data set for its temporary queue or for the destination queue at commit time (%USED), fail the BMP (ACTION).

This ENFORCE statement must be in front of the following ENFORCE statement because ENFORCE statements are searched in order for matches. If the %USED=20 command comes first, the %USED=40 will never be executed because the %USED=20 will match first.
The order of PROCESS and ENFORCE statements determines when, or sometimes even if, a statement will be processed. Therefore, the order of the statements is very important. For an explanation about how QPF processes statements, see “PROCESS and ENFORCE statement order” on page 273.

BMC Software recommends this tiering approach for ENFORCE statements. Tiering the statements allows a series of manageable events to occur before an overflow situation is reached. For an example, see MAQSAMP member QPF@OPT5.

**ENFORCE TYPE=BMP,%USED=20,ACTION=WARN**

These keywords request that if any BMP (other than QPFBMP2 because of the first ENFORCE statement) uses more than 20 percent of message queue data set for its temporary queue or for the destination queue at commit time (%USED), a warning message (ACTION) be issued.

The effect of the first ENFORCE statement is to exclude BMP QPFBMP2 from these actions. The effects of the second and third ENFORCE statements are to issue a warning message when a BMP uses 20 percent of a queue data set and to abend the BMP when it uses 40 percent.

**UNLOAD_DSN keywords**

**UNLOAD_DSN DSNAME=QPF.UNLOAD.%DEST.D%DATE.T%TIME, DISP=NEW,UNIT=SYSALLDA,CYLS_PRIM=1,CYLS_SEC=1**

These keywords specify the unload data set (DSNAME) to be used for the UNLOAD_DEQUEUE action specified in two of the PROCESS statements. A new data set will be allocated (DISP) with one primary cylinder and one secondary cylinder. The data set name will include the current date (%DATE) and time (%TIME) to ensure uniqueness. If the data set fills up, QPF will allocate a new data set and continue.

**OVERFLOW_PHASE keywords**

**OVERFLOW_PHASE THRESHOLD%=80,RESET%=75, NOTIFY=(WTO,,userid1),NOTIFY%=2,NOTIFY_INTERVAL=1, WTOR=YES,ACTION=(IWAIT)**

These keywords request that if the queue reaches 80-percent capacity (THRESHOLD %), warning messages be issued to the WTO and one userid. Each time the queue fills by another 2 percent (NOTIFY%) or every 1 minute (NOTIFY_INTERVAL), reissue the warning messages. Issue an IWAIT for any task that attempts to insert a message to the message queue (ACTION). Issuing IWAITs will ensure that IMS stays up so that QPF and Message Advisor can be used to determine the problem and the appropriate manual actions to be taken. Once the queue utilization drops below 75 percent (RESET%), the Overflow Phase ends and QPF returns to the Protect Phase.
Testing the test case QPF_OPTIONS command set

The QPF_OPTIONS command set developed to address the message queue overflow problems described in the test case is tested by activating it in the test environment and running it against the Message Advisor Test Applications provided by BMC Software.

As shipped, the Message Advisor Test Applications simulate the conditions that cause the queue overflow problems described in the test case. The test applications can also be redefined to simulate a wide variety of overflow conditions.

You can use the Message Advisor Test Applications in the following manner:

- Observe how the sample QPF_OPTIONS command set performs in the IMS environment described in the test case. If you are running a trial of the product or you have just installed it, this action is a good way to get an idea of how QPF monitors an IMS system and how it can be used to prevent outages.

- Re-create various overflow conditions to observe how QPF responds, based on the QPF options that you define.

- Before implementing QPF in production, implement your production QPF_OPTIONS command set in a test environment, then use the test applications to create the overflow conditions you are trying to avoid.

Message Advisor test application features

The Message Advisor Test Applications consist of two programs: a BMP and a MPP. Together, these programs enable you to perform the following kinds of tests:

- The Message Advisor Test Applications provide a way to re-create most queue overflow situations that you might experience in your IMS system(s).

- Both types of programs allow you to send any number of messages consisting of any number of segments to any number of destinations.

- The BMP program is used to checkpoint at any interval and go into a wait if requested. This action is used to re-create a runaway BMP that doesn’t issue checkpoints.

- The MPP can be used to resubmit itself under one or more transaction codes, creating a recursive loop.
For more information about each MPP and BMP input parameter, see “Message Advisor test applications” on page 393.

Tests to be performed

You can perform the following tests against the Test Case QPF_OPTIONS command set:

- Test 1: List the QPF options.
- Test 2: Fill the message queues past the Monitor Phase threshold and display the QPF Problem List.
- Test 3: Fill the message queues past the Protect Phase threshold and observe the automated actions taken.
- Test 4: Fill the message queues past the Overflow Phase threshold and observe the IMS outage prevention.

This series of tests will demonstrate how QPF operates. By performing these tests, you will become familiar with the different phases and actions QPF provides. In the process of performing the tests, QPF will move back and forth between the QPF phases.
Figure 142 on page 247 shows how QPF will flow from phase-to-phase during the tests.

**Test assumption**

In many cases these QPF tests have been designed on the assumption that DELTA IMS VIRTUAL TERMINAL, ETA, or ETO is present to create any destinations that do not currently exist in your IMS system.

If this assumption is not the case, please substitute valid destinations in place of those provided in the sample Test Case command set.

**Before you begin**

Before you can test the QPF_OPTIONS command set, you must perform the following steps:
1 Confirm that the Message Advisor Test Applications are installed.

The Message Advisor Test Applications are normally installed during the installation of the product. Since installing the Message Advisor Test Applications is an optional step in the installation process, you should confirm that they have been installed.

The QPF Test Application source code is located in MAQSAMP members QPFMPP and QPFBMP. The JCL that will compile and link the applications, run PSBGENS and ACBGENS, and generate the MFS is located in the MAQCNTL library.

If the test applications are not already installed in your test environment, install them at this time. For instructions about installing these applications in your test environment, see the installation guide.

2 Activate the Test Case QPF_OPTIONS command set in your test environment.

The Test Case QPF_OPTIONS command set is activated in your test environment by submitting a batch job that specifies the command set as SYSIN to the Message Advisor Batch Server JCL. The test case command set is located in MAQSAMP member QPF@OPT2.

a Change the IMSID to the appropriate IMSID for your site.

b Modify the SYSIN to point to the Message Advisor Batch Server JCL.

c Submit the batch job.

For more information about executing the QPF_OPTIONS command set, see “Building a QPF_OPTIONS command set” on page 269.

3 Gather the necessary message queue data.

To perform the tests, you will need information about the size and record length of your LGMSG and SHMSG queue data sets. You can acquire this information from the Message Advisor ISPF interface Message Queue Statistics pop-up panel.

Use the worksheet provided in Table 21 on page 249 to record the message queue information you will need to perform the tests. Additionally, the information about the worksheet will facilitate the calculation of the number of messages that must be added to the queues to move QPF into a particular phase.

BMC Software recommends that you copy this worksheet, fill in the required data, and use it as you progress through the tests.
Table 21: Message Advisor test applications worksheet

<table>
<thead>
<tr>
<th>Message Advisor Test Applications Worksheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHMSG Queue:</strong></td>
</tr>
<tr>
<td>Maximum number of records available</td>
</tr>
<tr>
<td>Current LRECL size</td>
</tr>
<tr>
<td><strong>LMSG Queue:</strong></td>
</tr>
<tr>
<td>Maximum number of records available</td>
</tr>
<tr>
<td>Current LRECL size</td>
</tr>
<tr>
<td><strong>Phase Thresholds:</strong></td>
</tr>
<tr>
<td>Monitor phase %</td>
</tr>
<tr>
<td>Protect phase %</td>
</tr>
<tr>
<td>Overflow phase %</td>
</tr>
<tr>
<td><strong>Monitor Phase Input Transaction Data:</strong></td>
</tr>
<tr>
<td>Number of messages = (c) * (e)</td>
</tr>
<tr>
<td>Segment length = (b) + 100</td>
</tr>
<tr>
<td><strong>Protect Phase Input Transaction Data:</strong></td>
</tr>
<tr>
<td>Number of messages = [(c) * (f)] - (m)</td>
</tr>
<tr>
<td>Segment length = (b) + 100</td>
</tr>
<tr>
<td><strong>Overflow Phase Input Transaction Data:</strong></td>
</tr>
<tr>
<td>Number of messages = [(c) * (g)]</td>
</tr>
<tr>
<td>Segment length = (b) + 100</td>
</tr>
</tbody>
</table>

a  From the Message Advisor Primary Menu, type the appropriate IMSID in the IMSID field.

b  Type an asterisk (*) in the Server name field.

c  Type 3 in the choice entry field, and press Enter.

The Message Queue Statistics pop-up panel (Figure 143 on page 250) is displayed.
The worksheet displayed in Table 21 on page 249 will aid you in gathering the necessary message queue data from the Message Queue Statistics pop-up panel. The worksheet will also help you calculate the messages that need to be inserted so that QPF will reach various phases during the test.

**Figure 143: Message Queue Statistics panel**

![Message Queue Statistics panel]

- **d** Record the size of the SHMSG queue on line (b) of the worksheet.
- **e** Record the size of the LGMSG queue on line (d) of the worksheet.
- **f** Page down until the **Maximum # records available** fields for both the SHMSG and the LGMSG queues (Figure 144 on page 250) are displayed.

**Figure 144: Message Queue Statistics panel**

![Message Queue Statistics panel]

- **g** Record the maximum number of records available for the SHMSG queue on line (a) of the worksheet.
Record the maximum number of records available for the LGMSG queue on line (c) of the worksheet.

4 Determine whether the percentage of records reserved for shutdown will force QPF into the Overflow Phase prematurely.

QPF is designed to move into the Overflow Phase when the THRESHOLD% for the Overflow Phase is reached. However, if message queue attempts to use any records reserved for shutdown before the THRESHOLD% is reached, QPF will immediately move into the Overflow Phase.

Perform the following calculations to determine if the Overflow Phase can be reached before the specified overlap THRESHOLD%:

- Calculate the number of SHMSG message queue records that are available.

- Calculate the number of LGMSG message queue records that are available.

- Calculate the number of records available as a percent.

If the above calculations indicate that the Overflow Phase THRESHOLD% keyword specifies a higher percentage than the percentage of records available, you should be aware that the Overflow Phase will start automatically at the lower value.

This step completes the preliminary steps that must be performed before you can test the QPF_OPTIONS command set.

**Test 1: List QPF options**

This test will validate that the Test Case QPF_OPTIONS command set has been built properly. You can confirm this validation by building and executing a QPF_OPTIONS command set that lists the current options.
1 Build the command set displayed in Figure 145 on page 252.

**Figure 145: Listing current QPF options**

```
QPF_LIST IMSID=?,TYPE=OPTIONS
END
```

The command set displayed in Figure 145 on page 252 is provided as a sample QPF_LIST command set in MAQSAMP member QPF@LST2.

a Access the sample QPF_LIST command set.

b Replace the ? in the **IMSID** field with your IMSID.

2 Execute the job.

For more specific instructions about building and executing a QPF_OPTIONS command set, see “Building a command set” on page 282.
3 Review the job output displayed in Figure 146 on page 253.

Figure 146: Message Advisor List Options Output report (Part 1 of 2)
Figure 147: Message Advisor List Options Output report (Part 2 of 2)

<table>
<thead>
<tr>
<th>Number</th>
<th>Type</th>
<th>Job/Name</th>
<th>PEB/Node</th>
<th>Trans.</th>
<th>Notify</th>
<th>Actn.</th>
<th>Tempq</th>
<th>#Reqs</th>
<th>#Msgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>STATIC</td>
<td>????????</td>
<td>WASH</td>
<td>IMAIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DYNAM</td>
<td>????????</td>
<td>WASH</td>
<td>IMAIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>MNAME</td>
<td>????????</td>
<td>WASH</td>
<td>IMAIT</td>
<td>976X 10000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MNAME</td>
<td>????????</td>
<td>WASH</td>
<td>IMAIT</td>
<td>585X 4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Message Advisor for IMS V1.0.02 - Server ID QJRB
QPF Command Execution Report For IMSID B61F

5. MNAME ????????
   WASH     IMAIT  250X 4000
6. MNAME ????????
   WASH     IMAIT  80000 750
7. MNAME ????????
   WASH     IMAIT  16000 250
8. MNAME ????????
   WASH     IMAIT  10000 100
9. MNAME ????????
   WASH     IMAIT  200    100
10. TRNAME
    WASH     IMAIT  1500 1500
11. TRNAME
    WASH     IMAIT  1000 1000
12. TRNAME
    WASH     IMAIT  500   500
13. TRNAME
    WASH     IMAIT  50    50
14. MPF
    WASH     IMAIT  1500 1500
15. MPF
    WASH     IMAIT  1000 1000
16. MPF
    WASH     IMAIT  500   500
17. MPF
    WASH     IMAIT  50    50
18. UTMA
    EJWHERE WASH     IMAIT  1500 1500
19. UTMA
    EJWHERE WASH     IMAIT  1000 1000
20. UTMA
    EJWHERE WASH     IMAIT  50    50

(Continued)

For more information about this report, see “Message Advisor reports” on page 351.

4 Record the threshold levels shown in the job output on the worksheet.
   a Record the Monitor Phase threshold percentage on line (e).
   b Record the Protect Phase threshold percentage on line (f).
   c Record the Overflow Phase threshold percentage on line (g).

5 Calculate and record the following input transaction data by using the formula found on the worksheet:
Test 2: Fill message queues past Monitor Phase threshold

The MONITOR_PHASE segment of the Test Case QPF_OPTIONS command set is tested by filling the message queues until they have passed the threshold for the Monitor Phase. In this test, the Message Advisor MPP program is used to insert messages to several destinations until the message queues have passed the threshold for the Monitor Phase.

1 Display the Message Advisor Test Application.

   a From an IMS session, enter the transaction name for the QPF test application program installed.

      The default name is QPFT0001.

   b Press Enter.

The Message Advisor Test Application panel (Figure 148 on page 255) is displayed.

**Figure 148: Message Advisor Test Application panel**

```
MESSAGE ADVISOR TEST APPLICATION
TRANNAME  QPFT0001
DESTINATION             -OR-   (DEST MASK  BMCA AND  NUMBER OF DEST  100  )
NUMBER OF          NUMBER OF          SEGMENT
MESSAGES           SEGMENTS           LENGTH
```
For a description of each MPP input parameter, see “Message Advisor test applications” on page 393.

2 Type the following values in the appropriate fields of Message Advisor Test Application input screen:

a Type QPFT0001 (or whatever your QPFTRAN name is) in the TRANNAME field.

b Leave the DESTINATION field blank.

c Type BMCA in the DEST MASK field.

d Type 100 in the NUMBER OF DEST field.

e Type the number of messages to be input to the queues in the NUMBER OF MESSAGES field.

   You must calculate this number by dividing the value from line (m) of the worksheet by 100. Round up to the nearest whole number.

f Type 1 in the NUMBER OF SEGMENTS field.

g Type the value from line (p) of the worksheet in the SEGMENT LENGTH field.

h Type This is an insert to 100 BMCA destinations in the MESSAGE TEXT field.

i Type N in the RE-INSERT DATA TO OUTPUT DESTINATIONS(S) field.

j Press Enter to execute the transaction.
The fields will clear, and the following message will display when the transaction is completed:

**TRANSACTION COMPLETED SUCCESSFULLY**

*Note*
Depending on your message region performance and the quantity of messages queued, executing this transaction can take a few minutes. Before you press **Enter**, wait until the response has been received.

---

3 Re-enter the following data into the Message Advisor Test Application input screen:

a. Type **QPFT0001** (or whatever your QPFTRAN name is) in the **TRANNAME** field.

b. Leave the **DESTINATION** field blank.

c. Type **ARFR** in the **DEST MASK** field.

d. Type **50** in the **NUMBER OF DEST** field.

e. Type **15** in the **NUMBER OF MESSAGES** field.

f. Type **1** in the **NUMBER OF SEGMENTS** field.

g. Type the value from line (p) of the worksheet in the **SEGMENT LENGTH** field.

h. Type **This is an insert to 50 ARFR destinations** in the **MESSAGE TEXT** field.

i. Type **N** in the **RE-INSERT DATA TO OUTPUT DESTINATIONS(S)** field.

j. Press **Enter** to execute the transaction.

When the transaction is completed, the fields will clear, and the following message will display:

**TRANSACTION COMPLETED SUCCESSFULLY**

*Note*
Depending on your message region performance and the quantity of messages queued, executing this transaction can take a few minutes. Do not press **Enter** again until the response has been received.

---

4 Display the QPF Problem List.
From the Message Advisor Primary Menu, type 8 in the choice entry field and press Enter.

The QPF Problem List panel (Figure 149 on page 258) is displayed.

**Figure 149: QPF Problem List panel**

![QPF Problem List panel](image)

Type one or more action codes. Then press Enter.

D=Dequeue  U=Dequeue/Unload  W=IWait  P=IPost  T=Stop  Line 00001 of 0040+
A=Abend  F=(Fail Program or Dequeue Force Destination)  More: + >

<table>
<thead>
<tr>
<th>Act Type</th>
<th>Name</th>
<th>Messages</th>
<th>SHMSG%</th>
<th>LGMSG%</th>
<th>Action</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-V</td>
<td>BMCA0100</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0099</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0098</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0097</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0096</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0095</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0094</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0093</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-V</td>
<td>BMCA0092</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>

5 Confirm that QPF is in the Monitor Phase.

The scale at the top of the panel indicates that QPF has escalated to the Monitor Phase. The LGMSG is 35% used, and **MONITOR** is highlighted.

At this phase, the problems are not of an urgent nature, but they do indicate that the IMS message queues are beginning to fill. By displaying the problem list, you can get an idea of what might be causing the message queues to fill. If desired, you can also initiate manual actions to resolve the problem before QPF’s automatic processing begins when the Protect Phase is reached.

**Note**

When the Monitor Phase threshold is reached, QPF issues WTOR message BMC43168A. If the Message Advisor ISPF interface is not available, you can display a problem list by issuing the LIST command in response to this WTOR.

This step completes Test 2.
Test 3: Fill message queues past Protect Phase threshold

The PROTECT_PHASE segment of the Test Case QPF_OPTIONS command set is tested by filling the message queues until they have passed the threshold value for the Protect Phase.

The queues will be filled past the Protect Phase threshold by using the QPFBMP to simulate a BMP that is in a loop and not issuing a checkpoint.

1 Define the SYSIN for the BMP by typing the data displayed in Figure 150 on page 259.

Sample JCL is located in MAQCNTL member QPF#BMP.

**Figure 150: SYSIN to test ENFORCE WARN**

```
DEST=QPFBMCB
DNUM=1
MNUM=(q) <--- specified on line (m) of worksheet
SNUM=1
SLTH=(s) <--- specified on line (s) of worksheet
TEXT=An insert from the Message Advisor BMP with no Chkpts
CHKP=0
WAIT=N
END
```

For a description about each BMP input parameter, see “Message Advisor test applications” on page 393.

2 Execute the job.

Submit a batch job specifying the SYSIN created in Figure 150 on page 259.

Executing the BMP will cause the message queues to grow beyond the threshold for the Protect Phase.

When the threshold for the Protect Phase is reached, a more serious problem has developed. You can let QPF’s automated features address the problem, or you can manually intervene to resolve it. Intervention involves displaying the QPF Problem List and initiating an action against the problem. QPF will attempt to alleviate the problem by using the PROCESS and ENFORCE statements that have been defined by the QPF_OPTIONS command set.

The BMP will complete with RC=00, and the inserts done by the BMP will be enqueued to the destination specified in the SYSIN.

3 Observe the automated QPF processing that occurs as a result of this input by toggling to the console or MTO and reviewing the messages that will be displayed.
Executing the BMP with this input will cause the Protect Phase to issue a warning that the BMP has more than 20 percent of the TEMPQ. This warning occurs because of the ENFORCE statement shown in Figure 151 on page 260.

**Figure 151: Test case ENFORCE WARN statement**

```
ENFORCE TYPE=BMP,%USED=20,ACTION=WARN
```

The Protect Phase has a PROCESS statement (Figure 152 on page 260) that causes an UNLOAD_DEQUEUE to be initiated if any CNT has 100 or more messages queued.

**Figure 152: Test case UNLOAD_DEQUEUE PROCESS statement**

```
PROCESS DESTYPE=CNT,#MSG=100, ACTION=(WARN,UNLOAD_DEQUEUE),THRESHOLD%=65
```

Since QPF is now in the Protect Phase, some messages that were originally queued to destinations starting with ARFR should now be dequeued. The dequeue occurs because of the PROCESS statement shown in Figure 153 on page 260. QPF will only dequeue sufficient messages to bring queue usage below the Protect Phase threshold.

**Figure 153: Test case DEQUEUE PROCESS statement**

```
PROCESS DESTYPE=CNT,#MSG=10,DEST=ARFR*, ACTION=(WARN,DEQUEUE),THRESHOLD=62
```

Based on the analysis and planning described in the test case, it was determined that any destination with the prefix ARFR was no longer valid and that messages queued to these destinations should be dequeued. Therefore, the Test Case QPF_OPTIONS command set was defined to dequeue any messages queued to destinations starting with ARFR.

Without QPF, dequeuing messages sent to invalid destinations would be a manual and tedious task. QPF has automated this process.

4. Confirm that the message queues have dropped to the Monitor Phase level by accessing the QPF Problem List as described in “Test 2: Fill message queues past Monitor Phase threshold” on page 255.

The QPF Problem List panel (Figure 154 on page 260) is displayed.

**Figure 154: QPF Problem List panel—Monitor Phase**

```
File  Session  Display  Help
------------------------------------------------------------------------
Command ===> _____________________________ Scroll ===> CSR_ 0...10...20...30...40...50...60...70...80...90..100 MONITOR 0%
SHMSG 1% USED ==============M=-            P         O           OVERFLOW 80%
LGMSG 33% USED ==============M=-            P         O
IMSID . . . . PRD1 +      Server name . . QMRP____ +     Limit . . 100 lines
------------------------------------------------------------------------
Type one or more action codes. Then press Enter.
D=Dequeue U=Dequeue/Unload W=Wait P=Post T=Stop Line 00001 of 0040+
A=Abend F=(Fail Program or Dequeue Force Destination) More: + >
```
a Review the LGMSG and SHMSG queue usage.

Notice that the scale at the top of the panel indicates that queue usage is at Monitor Phase levels (LGMSG is 33 percent used and SHMSG is one percent used). **PROTECT** is still highlighted because QPF will stay in the Protect Phase for an additional five minutes (RESET_TIME) before dropping back to the Monitor Phase. No new actions will be started during this reset time unless the queue usage again grows past the Protect Phase threshold.

b Ensure that QPF has dropped back to the Monitor Phase.

Let five minutes pass and press **Enter** to refresh the QPF Problem List panel. If QPF has dropped back to the Monitor Phase, **MONITOR** will be highlighted.

5 Execute the BMP again changing the SYSIN data as shown in **Figure 155 on page 261**.

**Figure 155: SYSIN for BMP ABEND**

```
DEST=QPFBMCC
DNUM=1
MNUM=(c) * (f) <--- specified on line (c) and (f) of worksheet
SNUM=1
SLTH=(s) <--- specified on line (s) of worksheet
TEXT=An insert from the Message Advisor BMP with no Chkpts
CHKP=0
WAIT=N
END
```

6 Execute the job.

Submit a batch job specifying the SYSIN created in **Figure 155 on page 261**. Sample JCL is located in MAQCNTL member QPF#BMP.

Executing the BMP with this SYSIN will cause the Protect Phase to fail the BMP due to the **ENFORCE** statement shown in **Figure 156 on page 261**.

**Figure 156: Test case ENFORCE ABEND statement**

```
ENFORCE TYPE=BMP,%USED=40,ACTION=FAIL
```

Since the message count is greater than 100, the messages inserted by the BMP before the fail was issued are enqueued to the destination and unloaded.

7 Confirm that QPF has dropped to the Monitor Phase level by accessing the QPF Problem List as described in “Test 2: Fill message queues past Monitor Phase threshold” on page 255.
The QPF Problem List panel (Figure 157 on page 262) is displayed.

Figure 157: QPF Problem List panel—Monitor Phase

The scale at the top of the panel will show that QPF has dropped back to the Monitor Phase. The ENFORCE and PROCESS statements of the Test Case QPF_OPTIONS command set were able to protect your IMS system from excessive message queue build-up.

a Review the LGMSG and SHMSG queue usage.

The scale at the top of the panel indicates that queue usage is at Monitor Phase levels (LGMSG is 33 percent used, and SHMSG is one percent used). PROTECT is still highlighted because QPF will stay in the Protect Phase for an additional five minutes (RESET_TIME) before dropping back to the Monitor Phase.

b Ensure that QPF has dropped back to the Monitor Phase.

Let five minutes pass, then press Enter to refresh the QPF Problem List panel. If QPF has dropped back to the Monitor Phase, MONITOR will be highlighted.

This step completes Test 3.

Test 4: Fill message queues past Overflow Phase threshold

The Overflow Phase segment of the QPF_OPTIONS command set is tested by filling the message queues until they have passed the threshold value for the Overflow Phase. To get to the Overflow Phase, QPF will first pass through the Protect Phase. The queues will be filled passed the Overflow Phase threshold by using the QPF BMP to simulate a BMP inserting several messages to a few destinations. The BMP will use slightly more than 20 percent of the message queues, again causing QPF to issue a warning message when it passes through the Protect Phase.
1 Define the SYSIN for the BMP by typing the data displayed in Figure 158 on page 263.

Sample JCL is located in MAQCNTL member QPF#BMP.

**Figure 158: SYSIN to test Overflow Phase**

```
DEST=QPFBMCB
DNUM=1
MNUM=(w) * 22% (rounded to nearest whole number)
SNUM = 1
SLTH = (s)
TEXT=This is an insert from the QPF BMP to QPFBMCB
CHKP=100
WAIT=N
END

DEST=QPFBMCC
DNUM=1
MNUM=(w) * 22% (rounded to nearest whole number)
SNUM = 1
SLTH = (s)
TEXT=This is an insert from the QPF BMP to QPFBMCC
CHKP=100
WAIT=N
END

DEST=QPFBMCD
DNUM=1
MNUM=(w) * 22% (rounded to nearest whole number)
SNUM = 1
SLTH = (s)
```

2 Execute the job.

Submitting a batch job specifying the SYSIN created in “Test 3: Fill message queues past Protect Phase threshold” on page 259.

3 Observe the automated QPF processing that occurs as a result of this input by toggling to the console or MTO and reviewing the QPF message that is displayed.

Executing the BMP with this input will cause the Protect Phase to issue a warning that the BMP has more than 20 percent of the TEMPQ. The warning occurs because of the ENFORCE statement shown in Figure 159 on page 263.

**Figure 159: Test case ENFORCE WARN statement**

```
ENFORCE TYPE=BMP,%USED=20,ACTION=WARN
```

4 Confirm that QPF has passed the Overflow Phase by accessing the QPF Problem List as described in “Test 2: Fill message queues past Monitor Phase threshold” on page 255.
The QPF Problem List panel is displayed.

**Figure 160: QPF Problem List panel—Overflow Phase**

<table>
<thead>
<tr>
<th>Command</th>
<th>Type</th>
<th>Name</th>
<th>Messages</th>
<th>SHMSG%</th>
<th>LGMSG%</th>
<th>Action</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>D=Dequeue</td>
<td>CNT-V</td>
<td>DPFBMCB</td>
<td>0...10...20...30...40...50...60...70...80...90...100</td>
<td>Monitor</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U=Dequeue/Unload</td>
<td>BMP(1)</td>
<td>PEL#BMP</td>
<td>522</td>
<td>0.00%</td>
<td>9.66%</td>
<td>*IWAIT</td>
<td></td>
</tr>
<tr>
<td>P=IPost</td>
<td>CNT-V</td>
<td>BMCA0071</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>T=Stop</td>
<td>CNT-V</td>
<td>BMCA0022</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0069</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0054</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0026</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0061</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0018</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0005</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0084</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0090</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0012</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0091</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0035</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0031</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0042</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0074</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0083</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0066</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0075</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0002</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0010</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0087</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0037</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0004</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CNT-V</td>
<td>BMCA0011</td>
<td>18</td>
<td>0.00%</td>
<td>0.33%</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>

Type one or more action codes. Then press Enter.

- **D**=Dequeue
- **U**=Dequeue/Unload
- **M**=Monitor
- **P**=Post
- **T**=Stop

Choose an Action Code
- **Act Type**
- **Name**
- **Messages**
- **SHMSG%**
- **LGMSG%**
- **Action**
- **Statement**

**a** Review the LGMSG and SHMSG queue usage.

Notice that the scale at the top of the panel indicates that queue usage is at Overflow Phase levels (LGMSG is 75 percent used and SHMSG is zero percent used) and **OVERFLOW** is highlighted.

QPF moved into the Overflow Phase because there was only a warning message that a BMP had a large portion of the message queue. No automated action was taken to alleviate the message queue build up. However, the Overflow Phase specified an IWAIT action (**Figure 161 on page 265**) that prevented IMS from abending. These actions will IWAIT the current tasks.
inserting messages and allow you time to view the problem list and take a manual action to alleviate the problem.

**Figure 161: Test case QPF_OVERFLOW subcommand**

```
OVERFLOW_PHASE_THRESHOLD%=80,RESET%=75,
NOTIFY=(WTO,userid1),NOTIFY%=2,NOTIFY_INTERVAL=1,
WTOR=YES,ACTION=(IWAIT)
```

5 Unload the QPFBMCB destinations from the QPF Problem List panel.

a On the QPF Problem List panel, type **U** in the **Act** field adjacent to the QPFBMCB destination that is to be unloaded and dequeued.

b Press **Enter**.

The Confirm QPF Actions panel (**Figure 162 on page 265**) is displayed.

**Figure 162: Confirm QPF Actions panel**

```
File  Session  Display  Help
------------------------------------------------------------------------------
QPF Problem List

Confirm QPF Actions
Select one of the following. Then press Enter.
1. Perform action UNLOAD for CNT-V QPFBMCB
2. Perform all actions selected (if more than one)
3. Do not process action UNLOAD for QPFBMCB
4. Do not process any more actions

Warning: Selecting 1 or 2 may change the IMS message queues and may be irreversible.

Command ===> _____________________________________________
------------------------------------------------------------------------------
```

6 To confirm execution, type **1** in the choice entry field and press **Enter**.

Message Advisor executes the request and then displays several status panels that indicate the status of the QPF request that you just executed. The Waiting pop-up panel (**Figure 163 on page 265**), which is the first in a series of status and selection list panels, is displayed.

The first time the Waiting pop-up panel is displayed and how often it is displayed are determined by the Session Control option settings. For more information about setting these options, see “Session Control” on page 45.

**Figure 163: Waiting panel—reviewing UNLOAD request status messages**
The Waiting pop-up panel remains displayed while the QPF request runs. You do not have to press any keys or type any commands while this pop-up panel is displayed; it automatically scrolls to the Request Status pop-up panel (Figure 164 on page 266) when the requested action completes.

The Request Status pop-up panel displays the status of the requested action by showing any significant messages. You can scroll up and down through the messages with the scroll keys.

**Figure 164: Request Status panel—reviewing UNLOAD request status messages**

```
7 Review the messages on the Request Status pop-up panel.
This pop-up panel displays the status of the requested process by showing any significant messages. If this pop-up panel shows a condition code other than 00, review the messages and reports from the Request Results pop-up panel to determine the problem.

8 Press Enter.
```

The Request Results pop-up panel (Figure 165 on page 266) is displayed.

**Figure 165: Request Status panel—request results options**
9 Type **1** in the choice entry field, and press **Enter**.

The Browse Results report (Figure 166 on page 267) is displayed.

**Figure 166: Browse Results panel—viewing DEQUEUE results**

10 Review the messages.

11 Return to the Message Advisor Primary Menu by pressing **END** until the primary menu is displayed.

This step completes Test 4.
Testing the test case QPF_OPTIONS command set
Building a QPF_OPTIONS command set

This chapter describes how to build and execute a Message Advisor QPF_OPTIONS command set once you have developed an understanding of how to set the options.

Overview

This chapter provides the following information about creating a QPF_OPTIONS command set:

■ Considerations and restrictions
■ Building a command set
■ Executing a command set
■ Testing a command set
■ Implementing a command set

The information provided in this chapter assumes that you have read the following chapters:

■ “About the Message Advisor Queue Protection Facility” on page 203
■ “Define the QPF options” on page 233

Considerations and restrictions

This section describes some considerations related to, and restrictions for, building a QPF_OPTIONS command set.
Syntax

The following syntax restrictions apply to the QPF_OPTIONS commands set:

- When QPF options are initially set or replaced, the MONITOR_PHASE, PROTECT_PHASE, and OVERFLOW_PHASE subcommands must be present in the QPF_OPTIONS command set.
  
The ENFORCE and PROCESS statements are optional. These statements apply only to processing activity that occurs in the PROTECT_PHASE. The UNLOAD_DSN subcommand is optional.

- When QPF options are listed, loaded, or unloaded, no subcommands or statements are allowed; only the main command keywords may be used.

Processing

QPF_OPTIONS can be completely replaced at any time. The new options will be put into effect immediately. However, the change will not affect processing that has already started or been scheduled.

The following two examples illustrate how QPF handles processing that has been initiated but that has not completed processing before a change in the command set:

---

**Example**

You change a `WTOR=YES` to `WTOR=NO`, but the WTOR has already been issued.
The WTOR will not be canceled, but it will not be reissued when a reply is received.

---

**Example**

You change a `NOTIFY_INTERVAL` from five minutes to 15 minutes, and a message was issued three minutes ago.
The next message will still be issued in two minutes (a five-minute interval).
However, the following message will be issued 15 minutes later.

Performance

You should consider the following performance issues before setting the QPF options.
Monitor Phase threshold

A substantial amount of processing is required to start the Monitor Phase since the existing message queues must be read. Therefore, select the Monitor Phase thresholds to minimize the number of times the Monitor Phase starts. You should select one of the following two approaches to set the Monitor Phase threshold:

- Set the Monitor Phase threshold to \texttt{THRESHOLD\%=0} and run the Monitor Phase all the time. Although this setting adds a small amount of overhead processing at all times, the Monitor Phase startup only occurs once when IMS starts. Startup will usually occur in the off-hours when the extra activity is not as significant.

\textit{Note}

In a production environment, BMC Software recommends that you specify \texttt{THRESHOLD\%=0}. Specifying a value greater than 0 could impact IMS performance while QPF determines the queue count of all active destinations. For example, if you specify \texttt{THRESHOLD\%=x, RESET=0}, performance could be impacted in proportion to the following factors:

- The value of \texttt{x}
- The number of active destinations
- The level of activity for active destinations

- In a non-production environment, set the Monitor Phase threshold high enough so that it will not be reached during normal day-to-day IMS processing. The Monitor Phase should not begin until you are fairly sure that something abnormal is happening. You may also want to set \texttt{RESET\%=0} so that once the Monitor Phase starts, it never stops. If not, select \texttt{RESET\%} and \texttt{RESET\_TIME} values so that once the phase starts, it stays active for a substantial period and does not keep stopping and starting.

These performance considerations do not apply to the Protect and Overflow phase thresholds.

Storage usage versus I/O and CPU

There is a trade-off between storage usage and I/O and CPU usage by the QPF Monitor Phase. If you do not specify a \texttt{MAX\_REGION} and allow QPF to use as much storage as needed, I/O and CPU usage is kept to a minimum. However, if you limit the storage which QPF can use, additional processing may be necessary. If you elect to specify a \texttt{MAX\_REGION}, you should monitor IMS performance during Monitor Phase processing to determine whether there is any impact.
Effects of records reserved for shutdown on Overflow Phase

QPF is designed to move into the Overflow Phase when the THRESHOLD% for the Overflow Phase is reached. However, if a message queue usage encroaches on the number of records that have been reserved for shutdown, QPF will immediately move into the Overflow Phase.

For instructions about calculating the number of records reserved for shutdown based on the THRESHOLD% value, see “Test 1: List QPF options” on page 251.

Using PROCESS and ENFORCE statements

PROCESS statements are used to indicate actions to be taken during the Protect Phase to reduce the number of messages on the message queues. ENFORCE statements are used to identify automatic limits and restrictions that are enforced during the Protect Phase to prevent additional messages from being enqueued.

When determining how to use PROCESS and ENFORCE statements, use one of the following approaches:

- Create statements that exclude sensitive destinations and critical applications and include everything else.
  The "exclude" statements can be created by the following ways:
  - Define the ACTION keyword as ACTION=NONE.
  - Define the ACTION keyword as desired but also use a high threshold so that these actions will only be processed if your system is about to crash.
  These ACTION statements must come first. Other generic statements with fewer restrictions should follow and allow QPF to perform actions to relieve the shortage on the less sensitive destinations and programs first.
  This approach gives QPF more flexibility in processing all "other" destinations and applications and makes it more likely that the shortage can be relieved without manual intervention.

- Include statements for destinations and applications that are not critical only. Everything else will be excluded by default.
  You must still order these statements with the highest thresholds first. With this approach, QPF will only process the specific destinations and applications you include. If this processing does not relieve the shortage, QPF will issue a "waiting" message indicating that it can do no more processing. If the problem gets worse, the Overflow Phase will be entered.
PROCESS and ENFORCE statement order

The order of PROCESS and ENFORCE statements determines when, or sometimes even if, a statement will be processed. Therefore, the order of the statements is very important.

When the Protect Phase threshold is reached, QPF looks at destinations one at a time, starting with the destination with the highest queue usage. For each destination, the PROCESS statements are scanned until a match is found, and that action is taken. Therefore, the most restrictive statements with the highest thresholds should be first.

PROCESS and ENFORCE statements are "dependent" or "independent" statements.

Dependent statements

If two or more PROCESS or ENFORCE statements match the same application or destination, they are "dependent" statements. QPF will process dependent statements in the order that they appear in the QPF_OPTIONS command set.

Thus, for a set of dependent statements, those with the most restrictions and highest thresholds must come first in the command set. In general, the actions you wish to execute first chronologically must come last in the command set.

For example, consider the three statements shown in Figure 167 on page 273.

Figure 167: Required PROCESS statement order—Sample 1

<table>
<thead>
<tr>
<th>PROCESS statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEST=ABC,%USED=6, ACTION=UNLOAD</td>
</tr>
<tr>
<td>DEST=ABC,%USED=3, ACTION=WARN</td>
</tr>
<tr>
<td>DEST=ABC, ACTION=NONE</td>
</tr>
</tbody>
</table>

These statements will match the same destination and are therefore dependent. The order is important. When destination ABC is using less than three percent of the message queue, the first two statements will not match; and no action is performed. Between three percent and six percent, the first statement will not match, but the second statement will match; and you will be warned. Above six percent, the first statement will match, and the messages will be unloaded and dequeued. If the order was reversed, the destination would never be unloaded and dequeued since the ACTION=NONE would always match.

Independent statements

PROCESS or ENFORCE statements are "independent" if they do not match the same application or destination. The order of statements that are independent is not important.
For example, consider the four statements shown in Figure 168 on page 274.

**Figure 168: Required PROCESS statement order—Sample 2**

```
PROCESS DEST=ABC, %USED=6, ACTION=UNLOAD
PROCESS DEST=XYZ, %USED=3, ACTION=WARN
PROCESS DEST=*, ACTION=NONE
ENFORCE TYPE=ANY, %USED=3, ACTION=WARN
```

PROCESS DEST=ABC and PROCESS DEST=XYZ are independent, and the order will have no effect. However, PROCESS DEST=ABC and PROCESS DEST=* are dependent since they may both match the same destination.

ENFORCE and PROCESS statements are independent and need not be merged. In other words, two PROCESS statements may be dependent or independent, but there can never be a dependent relationship between an ENFORCE and PROCESS statement.

Although it is not required, BMC Software recommends that you group all ENFORCE statements, all PROCESS statements, and all dependent statements.

**PROCESS and ENFORCE keyword categories**

There are four categories of keywords for PROCESS and ENFORCE statements:

- **Selection keywords**
  These keywords indicate which specific IMS destinations, regions, or input devices to which the statement applies. These keywords are optional. If you do not specify any of these keywords, a PROCESS statement will apply to all destinations, and an ENFORCE statement will apply to all applications and input devices.

- **Utilization keywords**
  Utilization keywords indicate when the statement will match, based on queue utilization. At least one of these keywords is required, and the statement will match if any of these thresholds are met.

- **Status keywords**
  Status keywords may be used to further restrict when the statement will match. These keywords are optional and all of these keywords which are used must match before the statement will match.

- **Action keywords**
  Action keywords specify what QPF should do once a match occurs. These keywords are optional. The default is to issue warning messages.
Table 22 on page 275 shows the PROCESS statement keywords by category.

Table 22: PROCESS statement keywords by category

<table>
<thead>
<tr>
<th>Category</th>
<th>Keywords</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection</td>
<td>DESTYPE</td>
<td>Selects by destination type</td>
</tr>
<tr>
<td></td>
<td>DESTINATION</td>
<td>Selects by destination name</td>
</tr>
<tr>
<td></td>
<td>LUNAME</td>
<td>Selects by LUNAME for APPC destinations</td>
</tr>
<tr>
<td></td>
<td>TPIPE</td>
<td>Selects by TPIPE name for OTMA destinations</td>
</tr>
<tr>
<td>Utilization</td>
<td>#MSGS</td>
<td>Matches based on number of messages queued</td>
</tr>
<tr>
<td></td>
<td>#RECORDS</td>
<td>Matches based on number of records queued</td>
</tr>
<tr>
<td></td>
<td>%USED</td>
<td>Matches based on percentage of queue used by this destination</td>
</tr>
<tr>
<td>Status</td>
<td>THRESHOLD%</td>
<td>Matches based on total queue data set utilization</td>
</tr>
<tr>
<td></td>
<td>QUEUE</td>
<td>Matches based on which destination queues have messages queued</td>
</tr>
<tr>
<td></td>
<td>STATUS</td>
<td>Matches based on current status of destination</td>
</tr>
<tr>
<td></td>
<td>LAST_USED</td>
<td>Matches based on when last message was enqueued</td>
</tr>
<tr>
<td>Action</td>
<td>ACTION</td>
<td>Indicates actions to be taken</td>
</tr>
<tr>
<td></td>
<td>NOTIFY</td>
<td>Indicates who is to be notified</td>
</tr>
<tr>
<td></td>
<td>QUEUE</td>
<td>Indicates which destination queues are to be dequeued (if a DEQUEUE or UNLOAD action is requested)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> QUEUE is used as both a Status keyword and an Action keyword.</td>
</tr>
<tr>
<td></td>
<td>FORCE</td>
<td>Indicates whether an unload or dequeue action will be performed without stopping a destination</td>
</tr>
</tbody>
</table>

Table 23 on page 276 shows the ENFORCE statement keywords by category.
Table 23: ENFORCE statement keywords by category

<table>
<thead>
<tr>
<th>Category</th>
<th>Keywords</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection</td>
<td>TYPE</td>
<td>Selects by type of region or input device</td>
</tr>
<tr>
<td></td>
<td>JOBNAME</td>
<td>Selects regions by job name</td>
</tr>
<tr>
<td></td>
<td>PSB</td>
<td>Selects regions by current PSB name</td>
</tr>
<tr>
<td></td>
<td>TRANSACTION</td>
<td>Selects regions by current transaction name</td>
</tr>
<tr>
<td></td>
<td>NODE</td>
<td>Selects input devices by VTAM node name</td>
</tr>
<tr>
<td></td>
<td>NAME</td>
<td>Selects input devices by LTERM name</td>
</tr>
<tr>
<td>Utilization</td>
<td>#MSGS</td>
<td>Matches when messages are enqueued to a destination based on the number of messages that will be on the destination queue when committed</td>
</tr>
<tr>
<td></td>
<td>#RECORDS</td>
<td>Matches when messages are enqueued to a destination based on the number of records that will be on the destination queue when committed</td>
</tr>
<tr>
<td></td>
<td>TEMP_RECORDS</td>
<td>Matches based on the number of records not yet committed</td>
</tr>
<tr>
<td></td>
<td>%USED</td>
<td>Matches based on the percentage of the queue data set used by records not yet committed OR by records that would be on a single destination queue at the commit point</td>
</tr>
<tr>
<td>Status</td>
<td>THRESHOLD%</td>
<td>Matches based on total queue data set utilization</td>
</tr>
<tr>
<td></td>
<td>DESTINATION</td>
<td>Matches based on the name of the destination to which messages are being queued</td>
</tr>
<tr>
<td></td>
<td>LUNAME</td>
<td>Matches based on the LUNAME for APPC destinations</td>
</tr>
<tr>
<td></td>
<td>TPIPE</td>
<td>Matches based on the TPIPE name for OTMA destinations</td>
</tr>
<tr>
<td>Action</td>
<td>ACTION</td>
<td>Indicates actions to be taken</td>
</tr>
<tr>
<td></td>
<td>ABEND_CODE</td>
<td>indicates the abend code to be used for the ABEND action</td>
</tr>
<tr>
<td></td>
<td>NOTIFY</td>
<td>Indicates who is to be notified</td>
</tr>
<tr>
<td></td>
<td>SEGNO</td>
<td>Indicates new SEGNO value to be set</td>
</tr>
<tr>
<td></td>
<td>SEGSIZE</td>
<td>Indicates new SEGSIZE value to be set</td>
</tr>
<tr>
<td></td>
<td>STATUS_CODE</td>
<td>Indicates status code returned when the FAIL action is selected</td>
</tr>
</tbody>
</table>
Match PROCESS and ENFORCE statements

IMS messages may consist of one or more records. Each record uses a "slot", or DRRN, in one of the IMS message queue data sets (SHMSG or LGMSG). IMS tracks only the number of messages. QPF also tracks the number of records. In determining queue utilization, the number of records is clearly more important than the number of messages. One destination may have several messages but only one record per message; another destination may have a few messages with hundreds of records each. The latter is somewhat unusual, though possible.

The relationship between message counts and record counts is site- and application-dependent. At your site, it may or may not be reasonable to assume an average of one or two records per message.

Match requirements for PROCESS or ENFORCE statements

The matching requirements for PROCESS or ENFORCE statements are as follows:

- The statements must match for all Selection and Status keywords. That is, there is a logical AND between each keyword.

- The statement will match if any of the Utilization keywords match. That is, there is a logical OR between these keywords.

The %USED Utilization keyword is available for both PROCESS and ENFORCE statements. %USED is the most logical choice from a system standpoint since the main concern is the percentage of the available queue that is being used by a "problem" destination or application.

Specify message and record counts

The TEMP_RECORDS keyword is only available on the ENFORCE statement and is mutually exclusive with the DESTINATION and LUNAME keywords. TEMP_RECORDS detects applications that are looping between commit points. Until an application commits with a checkpoint, records are kept on a temporary queue. If the number of records on the temporary queue equals or exceeds the TEMP_RECORDS specification, the ENFORCE statement will match.

The #RECORDS, #MSGS, and %USED keywords are available on both the ENFORCE and PROCESS statements, and refer to counts of records or messages that have been or are about to be committed. #RECORDS and %USED both refer to record counts. #RECORDS is the absolute number of records, while %USED is the percentage of the queue data set the records use. You can use whichever is more convenient. Using both is allowed, but there is usually little benefit on the PROCESS statement, as the following example illustrates:
Example
If your message queue data sets hold 10,000 records each, setting #RECORDS=200 and %USED=2 has the same effect. If you set #RECORDS=300 and %USED=2, the statement will match as soon as 200 records are in use (2% queue utilization). Since it is not necessary for both keywords to match, #RECORDS=300 never comes into play.
When %USED is specified on an ENFORCE statement, it applies to both the temporary queue and to the destination queue at commit time. If the temporary queue records or the destination queue records equal or exceed the specified percentage, the statement will match. Conversely, TEMP_RECORDS applies only to the temporary queue, and #RECORDS and #MESSAGES apply only to the destination queue. %USED is the simplest choice, while the other keywords provide greater control over which queues are checked.
When messages are being enqueued to a destination, the limit specified on the ENFORCE statement is compared to the number of messages or records being enqueued PLUS the number already queued to the destination, regardless of who queued them. That is, any application or input device which ADDS to the problem queue will be affected.

Repeating PROCESS statement actions
If desired, you can specify that a DEQUEUE or UNLOAD/DEQUEUE action defined in a PROCESS statement be repeated. Specify MODE=REPEAT or MODE=ALL to accomplish this task. The following example illustrates how QPF performs when MODE is specified as REPEAT or ALL.

Example
When MODE=REPEAT is specified and a destination matches a statement which requests the DEQUEUE action, QPF will dequeue the destination. If the dequeue is successful and the destination later matches the same statement again, QPF will dequeue the destination again. QPF will never repeat an action if the first action fails. In most cases, the repetition of successful actions is desirable. In some situations, this repetition could lead to a looping-like situation, which is not desirable.

Test PROCESS and ENFORCE statements
To test PROCESS and ENFORCE statements, specify the MODE PROTECT_PHASE keyword with one of the following parameters: MODE=LOG, MODE=WARN, or MODE=LOG,WARN. If MODE is defined as LOG, WARN, or both, QPF will scan all ENFORCE and PROCESS statements. If WARN is specified, messages will be issued, but no action will be taken. If LOG is specified, log records will be created but no action taken. Regardless of which MODE parameter is used, everything necessary to implement the action will occur except the final step of actually taking an action that affects the IMS system.
For example, for any UNLOAD_DEQUEUE actions specified on the PROCESS statements, the UNLOAD processing will be performed, but the DEQUEUE processing will be skipped.

BMC Software recommends that you start QPF in log-only or warn-only mode after changing or adding any ENFORCE or PROCESS statements. This action is used to see what actions QPF will take, verifying that the statements are coded correctly, without actually taking any action.

### Types of UNLOAD_DSN subcommand keywords

When setting the UNLOAD_DSN keywords, you must determine what type of data set name you need. There are four types of UNLOAD_DSN names:

- **Constant data set names**
  
  Constant names do not specify a GDG and do not include the %DSNNO, %TIME, %TIMET, or %DEST symbolic keywords. They may or may not include the other symbolic keywords.

- **Constant Destination data set names**
  
  Constant Destination names include the %DEST symbolic keyword but otherwise qualify as a Constant data set name.

- **Variable data set names**
  
  Variable names include one or more of the %DSNNO, %TIME, and %TIMET symbolic keywords or specify a GDG. These names cannot include the %DEST symbolic keyword. They may or may not include the other symbolic keywords.

- **Variable Destination data set names**
  
  Variable names include the %DEST symbolic keyword but otherwise qualify as a Variable data set name.

### Constant data set names

If a Constant data set name is used, QPF will perform one unload operation at a time. For the first unload operation, the data set will be allocated NEW or MOD as specified by the DISP keyword. MOD is recommended to allow the data set to be reused during subsequent Monitor phases. Subsequent unload operations will be concatenated to the existing data set until the data set fills up. Once the data set is full, subsequent unload operations will fail. Because of this possibility, BMC Software recommends against the use of Constant data set names.

If new options are loaded specifying a different data set name, the next unload operation to start will use the new data set name. The old data set will be freed.
When a Constant data set name is used, the RETRY keyword is not allowed.

**Constant destination data set names**

For each unload operation, a data set will be allocated and will be freed when the operation completes. If the data set becomes full or an allocation error occurs, processing will continue as described for Constant data set names.

The RETRY keyword is not valid for Constant Destination data set names.

**Variable data set names**

%TIME and %TIMET are guaranteed to yield a different value for each allocation attempt made during the same day on a specific IMS system. %DSNNO is guaranteed to yield a different value for each allocation attempt made while a specific IMS system is active. The counter is not reset even if new options are loaded. However, the counter will be reset to 000001 when the IMS system is restarted. Therefore, if any of these three keywords is used, a different data set name can be generated for each allocation attempt. The same is true if a GDG specification is used.

If a GDG is specified, then the data set allocation keyword combinations of DISP=MOD,APPEND=NO cannot be used.

If a Variable data set name is used, subsequent unload operations will be concatenated to the already allocated data set until it becomes full, at which time a new data set will be allocated, up to the limit specified by MAX_DSNS.

If any data set allocation fails and the RETRY keyword has been specified, a new data set name will be generated and another allocation attempted, up to the limit specified by the RETRY keyword.

If new options are loaded specifying a different data set name, the next unload operation to start will use the new data set name. The old data sets will be freed as any current unloads complete.

**Variable destination data set names**

For each unload operation, a data set will be allocated and will be freed when the operation completes. If the data set becomes full or an allocation error occurs, processing will continue as described for Variable data set names.
Symbolic keywords in data set names

When including symbolic keywords in an UNLOAD_DSN data set name, consider the following restrictions:

- More than one keyword may appear in a data set name. However, only one keyword may be used in each qualifier of a data set name, and each keyword must be at the end of a qualifier. That is, the keyword must be followed by a period, ending the qualifier, or be at the end of the data set name.

- Keywords that begin with a number (all except %DEST and %IMSID) may not be used at the beginning of a qualifier, because qualifiers may not start with a number.

- A symbolic keyword must be followed by a non-alphanumeric character. If the keyword is followed by a percent sign (%) which is not part of another symbolic keyword, the trailing percent sign (%) will be removed and the following characters will be concatenated to the symbolic value.

- The specification of the data set name with symbolic keywords may not exceed 44 characters. In addition, the maximum length of the data set name after symbolic substitution must not exceed 44 characters.
   Any violation of the 44-character length will result in syntax error message BMC43016.

   **Table 24 on page 281** shows examples of valid data set names that include symbolic keywords.

<table>
<thead>
<tr>
<th>Valid Data Set Names</th>
<th>Converts to...</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS.%IMSID.D%DATE.T%TIMET</td>
<td>IMS.IMSA.D95213.T1312232</td>
</tr>
<tr>
<td>IMS.%IMSID.D%DATE.TM%TIME.UNLOAD</td>
<td>IMS.IMSA.D95213.TM131223.UNLOAD</td>
</tr>
<tr>
<td>IMS.%IMSID.D%IDATE.T%ITIME.N%DSNNO</td>
<td>IMS.IMSA.D95213.T0601473.N000001</td>
</tr>
<tr>
<td>IMS.%IMSID.DEST.%DEST</td>
<td>IMS.IMSIMSA.DEST.LTRM0001</td>
</tr>
</tbody>
</table>

   **Table 25 on page 281** shows examples of invalid data set names that include symbolic keywords.

<table>
<thead>
<tr>
<th>Invalid Data Set Names</th>
<th>Syntax Error Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS.%IMSID%DSNNO.%TIME</td>
<td>Only one symbolic keyword is allowed per data set qualifier.</td>
</tr>
</tbody>
</table>
Invalid Data Set Names | Syntax Error Explanation
--- | ---
IMS.%IMSID.IMSID.D%DATE.T%ITIME | Characters cannot appear after the %IMSID keyword.
IMS.%IMSID.%DATE.%TIME | %DATE and %TIME substitution values begin with numbers and cannot begin a qualifier.
IMS.ABCDE%IMSID.DATE%DATE.TM%TIMET | All three qualifiers would be more than eight characters after substitution.

**ACTION=SNAPQ usage during Overflow Phase**

If you specify `ACTION=SNAPQ` during the Overflow Phase, QPF will initiate an IMS SNAPQ when message queue data set (SHMSG or LGMSG) reaches the value specified by the OVERFLOW_PHASE THRESHOLD% keyword.

If you elect to specify `ACTION=SNAPQ` during the Overflow Phase, consider the following issues:

- ENFORCE and PROTECT processing is suspended until a SNAPQ completes.
- A SNAPQ can take a considerable amount of time to complete if the message queue utilization is extremely high and the message queue data sets are extremely large.
- After completing the SNAPQ, QPF could reenter the Overflow Phase and initiate another SNAPQ if the RESET% value is close to the THRESHOLD% value, and/or the RESET_TIME value is small.

**Building a command set**

A QPF_OPTIONS command set can perform the following tasks:

- Load or unload the QPF options.
- Activate or deactivate the QPF options.
- List the QPF options.
- Set or replace the QPF options.

Building a QPF_OPTIONS command set to load/unload, activate/deactivate, or list the QPF options is not a complicated task. Samples of these types of command sets...
are provided in the Message Advisor for IMS Reference Manual along with a description of the associated keywords.

Building a QPF_OPTIONS command set to initially set the QPF options is a more complex task. This section will describe how to build this type of command set.

You must perform the following tasks to build a QPF_OPTIONS command set that will initially set the QPF options for your IMS system:

- Allocate a request library.
- Copy the QPF@OPT3 sample command set into the request library.
- Set the QPF_OPTIONS general keywords.
- Set the MONITOR_PHASE keywords.
- Set the PROTECT_PHASE keywords.
- Set the PROCESS keywords.
- Set the ENFORCE keywords.
- Set the OVERFLOW_PHASE keywords.
- Set the UNLOAD_DSN keywords.
- Check the command set syntax.

Note
Before building this command set, you should have gone through the developmental process of analyzing your IMS systems and developing a plan to address your site-specific queue utilization problems.

For information about using the recommended methodology for analyzing your IMS systems and developing a plan, see “Define the QPF options” on page 233.

For samples of all types of QPF_OPTIONS command sets, see the Message Advisor for IMS Reference Manual.

Allocate a request library

If you have not previously allocated a separate library for your Message Advisor commands, do so at this time. A recommended naming convention for the request library is bmcnode.MAQ.REQUEST.
If you need instructions about allocating a data set, please see “Building and executing a command set” on page 73. This chapter contains information about allocating a request library interactively or in batch.

Copy the QPF@OPT3 sample command set

Copy the QPF@OPT3 sample command set located in MAQSAMP into a PDS in your request library.

Although any Message Advisor command set can be typed directly into a PDS member, it is generally easier to copy a sample command set provided by BMC Software into the PDS and edit it to meet your needs. The command set is edited by using ISPF EDIT, which you can access directly or through the Message Advisor ISPF interface panels.

By using a sample command set, you will minimize potential errors and save the effort of keying in some of the required data.
The QPF@OPT3 sample command set is shown in Figure 169 on page 285.

**Figure 169: Sample QPF_OPTIONS command set**

```
QPF_OPTIONS IMSID=PRD1,TYPE=SET,ACTIVE=YES,MAX_REGION=5M

MONITOR_PHASE THRESHOLD%=0,RESET%=0,
  NOTIFY=(WTO,MTO),NOTIFY%=10,
  WTOR=YES

PROTECT_PHASE THRESHOLD%=60,RESET%=55,RESET_TIME=5,
  NOTIFY=(WTO,MTO),NOTIFY%=5,NOTIFY_INTERVAL=5,
  WTOR=YES,MODE=ALL

PROCESS DESTYPE=CNT,#MSGS=10,DEST=ARFR*,
  ACTION=(WARN,DEQUEUE),THRESHOLD%=62
PROCESS DESTYPE=CNT,#MSGS=100,
  ACTION=(WARN,UNLOAD_DEQUEUE),THRESHOLD%=65
PROCESS DESTYPE=RSMB,%USED=10,
  NOTIFY=(userid1),ACTION=(WARN,STOP)

ENFORCE TYPE=BMP,PSB=QPF#BMP2,ACTION=None,%USED=0
ENFORCE TYPE=BMP,%USED=40,ACTION=FAIL
ENFORCE TYPE=BMP,%USED=20,ACTION=WARN

UNLOAD_DSN DSNAME=QPF,UNLOAD.%DEST.D%DATE.T%TIME,
  DISP=NEW,UNIT=SYSALLDA,CYLS_PRIM=1,CYLS_SEC=1

OVERFLOW_PHASE THRESHOLD%=80,RESET%=75,
  NOTIFY=(WTO,userid1),NOTIFY%=2,NOTIFY_INTERVAL=1,
  WTOR=YES,ACTION=(IWAIT)
```

A few of the parameters for the keywords in the sample command set have been specified; however, most have not. The worksheet shown in Table 26 on page 286 is provided to help you determine the site-specific parameters that you want to set for each keyword.

Each line of the worksheet refers to a specific keyword. For example, line (g2) of the worksheet refers to the MAX_REGION=(g2) keyword. As you step through the tasks in this section, the worksheet will provide a useful tool in determining how to define the keywords.

**Note**

This sample command set and the associated worksheet do not address all of the possible keywords or sequence of keywords that can be specified when setting the QPF options.
### Table 26: Set QPF_OPTIONS worksheet

<table>
<thead>
<tr>
<th>General Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSID</td>
<td>IMSID for the targeted IMS system</td>
<td>(g1)</td>
<td></td>
</tr>
<tr>
<td>MAX_REGION</td>
<td>Maximum region allowed (suggest not specifying a value so that QPF can obtain as much of the available storage as needed)</td>
<td>(g2)</td>
<td></td>
</tr>
</tbody>
</table>

#### MONITOR_PHASE Keyword

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>THRESHOLD%</td>
<td>Above normal day-to-day percentage usage of SHMSG or LGMSG queue (suggest 0%)</td>
<td>(m1)</td>
<td></td>
</tr>
<tr>
<td>RESET%</td>
<td>Reset phase percentage level (suggest 5% to 10% less than (m1) value or 0%)</td>
<td>(m2)</td>
<td></td>
</tr>
<tr>
<td>RESET_TIME</td>
<td>Average time to determine whether there is a problem (recommend at least 15 minutes)</td>
<td>(m3)</td>
<td></td>
</tr>
<tr>
<td>NOTIFY</td>
<td>Whom to notify during Monitor Phase (suggest at least WTO and MTO)</td>
<td>(m4)</td>
<td></td>
</tr>
<tr>
<td>NOTIFY%</td>
<td>Percentage growth in queue usage to renotify</td>
<td>(m5)</td>
<td></td>
</tr>
</tbody>
</table>

#### PROTECT_PHASE Keyword

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>THRESHOLD%</td>
<td>Very high percentage usage of SHMSG or LGMSG queue</td>
<td>(p1)</td>
<td></td>
</tr>
<tr>
<td>RESET%</td>
<td>Reset phase percentage level (suggest 5% to 10% less than (p1) value)</td>
<td>(p2)</td>
<td></td>
</tr>
<tr>
<td>RESET_TIME</td>
<td>Time to wait before restarting IWAITed tasks (suggest at least 10 minutes)</td>
<td>(p3)</td>
<td></td>
</tr>
<tr>
<td>NOTIFY</td>
<td>Whom to notify during Protect Phase (suggest at least WTO and MTO)</td>
<td>(p4)</td>
<td></td>
</tr>
<tr>
<td>NOTIFY_INTERVAL</td>
<td>How often to notify the above people/places (minutes)</td>
<td>(p5)</td>
<td></td>
</tr>
<tr>
<td>NOTIFY%</td>
<td>Percentage growth in queue usage to renotify</td>
<td>(p6)</td>
<td></td>
</tr>
<tr>
<td>MODE</td>
<td>Mode of processing (suggest initially WARN, then REPEAT)</td>
<td>(p7)</td>
<td></td>
</tr>
</tbody>
</table>

#### ENFORCE Keyword

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>Indicates whether this statement applies to application programs running as a BMP, as an MPP, or to an input device (identified by the type of CNT)</td>
<td>(e1)</td>
<td></td>
</tr>
</tbody>
</table>
### Set QPF_OPTIONS worksheet

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>%USED</td>
<td>Indicates that this statement applies only to application programs or input devices that attempt to queue messages to a queue by using the specified percentage (or greater) of the message queue (SHMSG, LGMSG, or both), which is above the Protect Phase threshold</td>
<td>(e2)</td>
<td></td>
</tr>
<tr>
<td>JOBNAME</td>
<td>Name or mask, or a list of names and masks (This statement applies only to BMP or MPP regions that match one of the jobnames in the list)</td>
<td>(e3)</td>
<td></td>
</tr>
<tr>
<td>ACTION</td>
<td>Action to be taken for application programs or input devices that match this statement</td>
<td>(e4)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Repeat the ENFORCE section as many times as needed for each automated action desired.

<table>
<thead>
<tr>
<th>PROCESS Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESTYPE</td>
<td>CNT or SMB destination</td>
<td>(x1)</td>
<td></td>
</tr>
<tr>
<td>%USED</td>
<td>Indicates that this statement applies only to destinations that use this percentage or more of the message queue (LGMSG, SHMSG, or both), which is above the Protect Phase threshold</td>
<td>(x2)</td>
<td></td>
</tr>
<tr>
<td>#MSGS</td>
<td>Number of messages considered critical to perform this PROCESS statement</td>
<td>(x3)</td>
<td></td>
</tr>
<tr>
<td>DEST</td>
<td>Generic masking allowed (If you want a PROCESS statement to apply to all the destinations specified by the DESTYPE keyword, omit this keyword)</td>
<td>(x4)</td>
<td></td>
</tr>
<tr>
<td>THRESHOLD%</td>
<td>PROCESS actions are applicable only when the message queue has reached this percentage full (suggest 5% higher than Protect Phase threshold)</td>
<td>(x5)</td>
<td></td>
</tr>
<tr>
<td>ACTION</td>
<td>Dequeue if you do not want the messages at all, or unload and dequeue to save a copy of the messages before dequeueing</td>
<td>(x6)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Repeat the PROCESS section as many times as needed for each automated action desired.

<table>
<thead>
<tr>
<th>OVERFLOW_PHASE Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>THRESHOLD%</td>
<td>Serious percentage usage of SHMSG or LGMSG queue</td>
<td>(o1)</td>
<td></td>
</tr>
<tr>
<td>RESET%</td>
<td>Reset phase percentage level (suggest 5% to 10% less than (o1) value)</td>
<td>(o2)</td>
<td></td>
</tr>
</tbody>
</table>
### Set QPF_OPTIONS worksheet

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOTIFY</td>
<td>Whom to notify during Overflow Phase (suggest at least WTO)</td>
<td></td>
<td>(o3)</td>
</tr>
<tr>
<td>NOTIFY_INTERVAL</td>
<td>How often to renotify the above people/places (minutes)</td>
<td></td>
<td>(o4)</td>
</tr>
<tr>
<td>ACTION</td>
<td>Action to be taken (IWAIT)</td>
<td></td>
<td>(o5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNLOAD_DSN Keyword</th>
<th>Description</th>
<th>Parameter</th>
<th>Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSNNAME</td>
<td>Data set name (suggest time/date stamps and/or IMSID substitution) (for example, QPF, %IMSID.D%DATE.T%TIMET.UNLOAD)</td>
<td></td>
<td>(u1)</td>
</tr>
<tr>
<td>DISP</td>
<td>Indicates the disposition of the data which can be NEW or MOD (recommend MOD)</td>
<td></td>
<td>(u2)</td>
</tr>
<tr>
<td>UNIT</td>
<td>Allocation unit</td>
<td></td>
<td>(u3)</td>
</tr>
<tr>
<td>CYLS_PRIM</td>
<td>Allocation size (in cylinders)</td>
<td></td>
<td>(u4)</td>
</tr>
<tr>
<td>CYLS_SEC</td>
<td>Number of secondary cylinders to allocate for a new data set</td>
<td></td>
<td>(u5)</td>
</tr>
</tbody>
</table>

### Setting general keywords

General keywords are command keywords that are not associated with a specific subcommand or statement. These keywords govern global command functions such as identifying the targeted IMS system and specifying whether QPF is active.

Modify the General keyword segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet.

1. Edit the General keywords segment of the sample QPF@OPT3 command set.
   a. Change the value for the IMSID keyword to your IMSID (line g1 on the worksheet).
   b. Specify the maximum region allowed be defining the MAX_REGION keyword (line g2 on the worksheet).

2. Add additional General keywords, if desired.

For more information about the General keywords, see the *Message Advisor for IMS Reference Manual*. 

---
Setting MONITOR_PHASE keywords

The Monitor Phase indicates that queue usage has reached a level specified by the user and that analysis of the message queues will begin.

Modify the Monitor Phase segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet.

1 Set the THRESHOLD% keyword for the Monitor Phase (line m1 on the worksheet).

   a Determine the purpose of the Monitor Phase.

   b To use the Monitor Phase to indicate a possible problem with message queue usage, set the THRESHOLD% keyword to a percentage of message queues that is slightly higher than normal day-to-day usage.

   c To use the Monitor Phase as a constant monitor of destinations by using the largest portion of the message queues, set the THRESHOLD% keyword to zero so that any usage of the message queues will trigger the start of the Monitor Phase.

   For further information about the impact of setting the Monitor Phase threshold to zero or to a very low percentage, see “Performance” on page 270.

2 Set the RESET% keyword (line m2 on the worksheet).

   The RESET% keyword defines the threshold that both message queues must stay below before QPF will drop back to the Active Phase.

   As previously stated, the Monitor Phase overhead required to start and stop can be significant. Therefore, the reset keywords should be set to minimize starting and stopping the phase.

3 Set the RESET_TIME keyword (line m3 on the worksheet).

   The RESET_TIME keyword determines the amount of time both message queues must stay below the RESET% value before QPF will drop back to the Active Phase.
4 Set the NOTIFY keyword (line m4 on the worksheet).

The NOTIFY keyword can be very useful for ensuring that notification is sent to one or several places where it will not be missed. This keyword should be used with the NOTIFY_INTERVAL and/or the NOTIFY% keywords to ensure the appropriate people are aware of the seriousness of the problem.

If the purpose of the Monitor Phase is to indicate a problem with message queue usage, then you probably want to send notification messages to one or more userids as well as the MTO and/or WTO.

If the purpose of the Monitor Phase is to constantly monitor destinations by using the message queue, sending notification to the WTO and/or the MTO will be sufficient to indicate that the Monitor Phase has been started.

At any time, a current list of the destinations with the most queue usage can be obtained by using the ISPF interface or a batch QPF_LIST command set.

5 Set the NOTIFY% keyword (line m5 on the worksheet).

6 Add additional Monitor Phase keywords, if desired.

   For more information about Monitor Phase keywords, see the Message Advisor for IMS Reference Manual.

---

**Setting PROTECT_PHASE keywords**

The Protect Phase indicates a more serious action needs to be taken as indicated by the keywords of the PROCESS and ENFORCE statements.

Modify the Protect Phase segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet.

1 Set the THRESHOLD% keyword for the Protect Phase (line p1 on the worksheet).

   The threshold for the Protect Phase needs to be at a level that indicates a problem with the message queues, but that is low enough to allow time for the keywords of the PROCESS and ENFORCE statements to perform automated actions.

2 Set the RESET% keyword (line p2 on the worksheet).
3 Set the RESET_TIME keyword (line p3 on the worksheet).

**Note**
Both the RESET% and the RESET_TIME must be satisfied before QPF will drop back to the Monitor Phase.

4 Set the NOTIFY keyword (line p4 on the worksheet).

This keyword should be used with the NOTIFY_INTERVAL and/or the NOTIFY % keywords to ensure the appropriate people are aware of the seriousness of the problem.

5 Set the NOTIFY_INTERVAL keyword (line p5 on the worksheet).

The NOTIFY_INTERVAL and/or the NOTIFY% keyword can be used to reissue the messages in case the first notification is overlooked.

6 Set the NOTIFY% keyword (line p6 on the worksheet).

7 Set the MODE keyword (line p7 on the worksheet).

Initially, set **MODE=WARN** so that you will be notified of any errors but no automated actions that affect the message queues will be performed. After you are sure of the automated actions that you have set, PROCESS or REPEAT can be used. PROCESS indicates that the requested action is performed. REPEAT indicates that the action may be repeated if necessary. Both PROCESS and REPEAT imply LOG.

8 Add additional Protect Phase keywords, if desired.

For information about all the Protect Phase keywords, see the *Message Advisor for IMS Reference Manual*.

**Note**
The AUTO_CMD keyword allows further flexibility in performing automated actions. This keyword may be used to specify an MVS operator command which will be issued each time the phase starts.

For example, a Message Advisor command set could be built to dequeue all messages currently queued to the DEADQ. When the Protect Phase is reached, an **AUTO_CMD='S DEADQ'** could be specified to start a task the executes the command set, thereby helping to relieve the problem.

Using this method may sometimes be preferable to using PROCESS statements since PROCESS statements will only dequeue sufficient destinations to bring the queue usage below its Protect Phase threshold.
Setting ENFORCE keywords

ENFORCE statements apply to IMS applications and input devices that are creating messages. Applications and input devices can cause message queue problems if they loop and begin inserting messages to the queues too fast to be processed. Any CNT can be an "input device," though only programmable devices, MSC links, APPC LUNames, or OTMA TPIPEs normally have the potential to cause message queue problems. ENFORCE statements are used to keep the applications and input devices from creating more messages and to eliminate any messages in progress. Thus, queue utilization is reduced, or at least it is kept from getting larger.

Modify the ENFORCE segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet for each ENFORCE statement required.

1 Determine the kind and number of ENFORCE statements required.

The kind and number of ENFORCE statements required is based on the plan you have developed for resolving the queue utilization problems that you identified when you analyzed your IMS system.

2 Build an ENFORCE statement.

   **Note**  
The more generic the ENFORCE statement, the fewer ENFORCE statements required.

   a Set the TYPE keyword for the ENFORCE statement (line e1 on the worksheet).

   Typically, the TYPE will be BMP or MPP.

   b Set the %USED keyword for the ENFORCE statement (line e2 on the worksheet).

   This value indicates that the ENFORCE statement will be triggered when the BMP or MPP has uncommitted messages by using this percentage of the queue data set, OR when the destination queue at enqueue time would, if committed, use this percentage of the queue data set.

   c Set the appropriate ENFORCE "Selection" keywords for your site (line e3 on the worksheet).

   **Note**  
There are four categories of PROCESS and ENFORCE statement keywords: Selection, Utilization, Status, and Action. For more information about the purpose and function of the keywords in each of these categories, see “PROCESS and ENFORCE keyword categories” on page 274.
The Selection keywords are PSB, JOBNAME, NAME, or NODE:

- The PSB keyword applies to BMP or MPP regions only.
- The JOBNAME keyword applies to BMP or MPP regions only.
- The NAME keyword applies to input devices with LTERM names, APPC LUNames, or OTMA TPIPEs only.
- The NODE keyword applies to input devices with node names only.

d Set the ACTION keyword for the ENFORCE statement (line e4 on the worksheet).

Actions are taken in the following order: WARN, FAIL, STOP, ABEND, and IWAIT. All actions except NONE imply WARN.

e Review the ENFORCE statement and delete the Selection keywords that you did not use.

3 Repeat Step 2 on page 292 for each ENFORCE statement required.

4 Order the ENFORCE statements.

The order of the ENFORCE statements is very important. The most restrictive statements with the highest thresholds should be first.

For more information about how to order ENFORCE statements, see “PROCESS and ENFORCE statement order” on page 273.

Figure 170 on page 293 shows a sample ENFORCE statement.

**Figure 170: Sample ENFORCE statement**

```
PROTECT_PHASE THRESHOLD%=10,RESET%=10,RESET_TIME=20,
    MODE=(REPEAT,LOG,PROCESS,WARNING),
    AUTO_CMD='S QMROR61,MBR=JOB0610',
    NOTIFY%=5,
    NOTIFY=WTO,NOTIFY=MTO,NOTIFY=BMUID2,
    NOTIFY=BMUID1,NOTIFY=BMUID2,NOTIFY=BMUID3

* ENFORCE TYPE=ANY,
    STATUS=A7,
    %USED=00,NOTIFY=(BMUID3,WTO,WTO),
    NOTIFY=WTO,WTO,WTO,WTO,
    THRESHOLD%=10,
    ACTION=(WARN,STOP,IWAIT,FAIL,ABEND)
* ENFORCE TYPE=STATIC,
    NAME=?????????,
    %USED=0,
    ACTION=(IWAIT)
```
Setting PROCESS keywords

PROCESS statements apply to IMS destinations (CNTs and SMBs) that have messages queued on the IMS message queue data sets. These statements are used to tell QPF whether the messages for destinations that exceed certain thresholds can be dequeued or unloaded, thus reducing queue utilization.

Modify the PROCESS segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet for each PROCESS statement required.

1 Determine the kind and number of PROCESS statements required.

The kind and number of PROCESS statements required is based on the plan you have developed for resolving the queue utilization problems that you identified when you analyzed your IMS system.

2 Build a PROCESS statement.

*Note*

The more generic the PROCESS statement, the fewer PROCESS statements required.

a Set the DESTYPE keyword for the PROCESS statement (line x1 on the worksheet).

The default is ALL.

b Set the %USED keyword for the PROCESS statement (line x2 on the worksheet).

This value is the percentage of the permanent or temporary queue that will be used by the BMP or MPP.

c Set the #MSGS keyword for the PROCESS statement (line x3 on the worksheet).

#MSGS specifies the number of messages considered critical to perform this PROCESS statement.

d Set the DEST keyword for the PROCESS statement (line x4 on the worksheet).

Generic masking is allowed. If you want a PROCESS statement to apply to all destinations specified by DETYPE, omit this keyword from the statement.

e Set the THRESHOLD% keyword (line x5 on the worksheet).
BMC recommends that you specify a value that is 5 percent higher than the Protect Phase threshold percentage. Specifying a slightly higher percentage will allow ENFORCE and AUTO_CMD actions a chance to alleviate the shortage of space on the message queues before the PROCESS statements take effect.

f Set the ACTION keyword for the PROCESS statement (line x6 on the worksheet).

If you do not want these messages, dequeue them. If you want to save the messages for later use, unload and dequeue them so that a copy of the messages will be saved before they are dequeued.

3 Repeat Step 2 on page 294 for each PROCESS statement required.

--- Note ---
To dequeue the master or secondary master terminal when the Protect Phase threshold is reached, create a PROCESS statement as follows:

- Specify the DESTINATION keyword as the explicit name of the master terminal or secondary master terminal.
- Specify FORCE=YES.
- Do not specify ACTION=STOP since the STOP parameter is not supported for master terminals.

4 Order the PROCESS statements.

The order of the PROCESS statements is very important. The most restrictive statements with the highest thresholds should be first.

For more information about how to order PROCESS statements, see “PROCESS and ENFORCE statement order” on page 273.

**Setting OVERFLOW_PHASE keywords**

The Overflow Phase indicates that your message queues are experiencing an extremely serious capacity problem. The keywords can be set to prevent an IMS outage that would occur if the message queues became too full.

Modify the Protect Phase segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet.
1 Set the THRESHOLD% keyword for the Overflow Phase (line o1 on the worksheet).

Set the Overflow Phase THRESHOLD% keyword at a level that should not be allowable in your IMS environment. If this threshold is reach, immediate action must be taken. If the Overflow Phase is reach and any PROCESS and/or ENFORCE statements are still in effect, it typically indicates that the automated actions need further definition.

**Note**

Ensure that the Overflow Phase THRESHOLD% value is below the shutdown value. For information about calculating the shutdown value, see “Before you begin” on page 247.

You can quickly analyze the problem and then fix it by displaying the QPF Problem List by using the ISPF panels or by executing a batch QPF_LIST command set to display the list of problems.

2 Set the RESET% keyword (line o2 on the worksheet).

The reset percentage for the Overflow Phase should be low enough to allow QPF to leave this phase as soon as the problems are relieved. If the overflow action is to IWAIT, then you want the Overflow Phase to be terminated as soon as possible.

3 Set the NOTIFY keyword (line o3 on the worksheet).

4 Set the NOTIFY_INTERVAL keyword (line o4 on the worksheet).

5 Set the ACTION keyword (line o5 on the worksheet).

The Overflow Phase ACTION keyword can be set to IWAIT to indicate the any ITASK that attempts to insert a message to the message queue is to be put into a wait until the Overflow Phase terminates. Specifying ACTION=IWAIT will allow time for a manual action to be taken by using the ISPF interface or batch process. Thus, IMS could be unavailable for minutes rather than for the hours it would be down if an IMS outage occurred.

6 Add additional Overflow Phase keywords if desired.

For more information about the Overflow Phase keywords, see the *Message Advisor for IMS Reference Manual*. 
Setting UNLOAD_DSN keywords

The UNLOAD_DSN subcommand is required for a PROCESS statement to initiate an UNLOAD_DEQUEUE action. This subcommand must also be present in the active QPF_OPTIONS command set to execute a QPF_ACTION command specifying ACTION=UNLOAD_DEQUEUE or to issue an UNLOAD WTOR Action command.

Modify the UNLOAD_DSN segment of the QPF@OPT3 sample command set based on the information recorded on the worksheet.

1 Set the DSNAME keyword to specify the data set name for the UNLOAD_DSN subcommand (line u1 of the worksheet).

   a Determine the type of data set name needed.

      When setting the UNLOAD_DSN keywords, you must determine what type of data set name you need. There are four types of UNLOAD_DSN names:

      - Constant data set names
      - Constant Destination data set names
      - Variable data set names
      - Variable Destination data set names

      For more information about each type of data set names, see “Types of UNLOAD_DSN subcommand keywords” on page 279.

   b Specify any symbolic keywords that are needed.

      If you want each destination in the PROCESS statements specified as ACTION=UNLOAD_DEQUEUE to unloaded to it's own data set, use the %DEST symbolic keyword.

      Use the time-stamp symbolic keywords %DATE and %TIME if you want to know when an unload occurs.

      Be sure to put one alphabetic-character in front of both %DATE and %TIME.

      For more information about using symbolic keywords, see “Symbolic keywords in data set names” on page 281.

2 Set the DISP keyword to specify the disposition required (line u2 of the worksheet).
Note
If DISP=MOD is specified, the data set will continue to grow. If the data set does not exist, DISP=MOD will cause a new data set to be allocated.

3 Set the UNIT keyword to specify the unit name to be used when allocating a new data set (line u3 of the worksheet).

4 Set the CYLS_PRIM keyword to specify the number of primary cylinders needed (line u4 of the worksheet).

5 Set the CYLS_SEC keyword to specify the number of secondary cylinders needed for a new data set (line u5 of the worksheet).

Checking command set syntax

QPF_OPTIONS command sets are built by using ISPF EDIT and tend to be long; therefore, it is easy to make a syntax error when building one. You can use the Message Advisor ISPF interface to check the syntax of a QPF_OPTIONS command set before executing it. This procedure can also be used to check the syntax of other types of Message Advisor command sets.

1 Access the Member List panel from the Message Advisor Primary Menu, and type the following information:

   a Type 1 in the choice entry field.

   b Type the name of the PDS member in which you built the QPF_OPTIONS command set in the Request library field, and press Enter.

The Member List panel (Figure 171 on page 298) is displayed.

Figure 171: Sample Member List panel

<table>
<thead>
<tr>
<th>Act</th>
<th>Name</th>
<th>Prompt</th>
<th>Size</th>
<th>Created</th>
<th>Changed</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>INTERVAL</td>
<td>_______</td>
<td>8</td>
<td>2001/03/26</td>
<td>2001/04/02</td>
<td>RIHWXC2</td>
</tr>
<tr>
<td>_</td>
<td>MUN0015</td>
<td>_______</td>
<td>5</td>
<td>2001/07/18</td>
<td>2001/07/18</td>
<td>RIHWXC2</td>
</tr>
<tr>
<td>_</td>
<td>QMR</td>
<td>_______</td>
<td>12</td>
<td>2001/09/04</td>
<td>2001/09/04</td>
<td>RIHWXC2</td>
</tr>
<tr>
<td>_</td>
<td>QPF@OPT3</td>
<td>_______</td>
<td>36</td>
<td>2000/05/19</td>
<td>2001/09/05</td>
<td>ROHPXM</td>
</tr>
<tr>
<td>_</td>
<td>REQUE</td>
<td>_______</td>
<td>11</td>
<td>2001/03/02</td>
<td>2001/03/16</td>
<td>RIHWXC2</td>
</tr>
<tr>
<td>_</td>
<td>RSR0043</td>
<td>_______</td>
<td>6</td>
<td>2001/07/17</td>
<td>2001/07/17</td>
<td>RIHWXC2</td>
</tr>
</tbody>
</table>
2 Type S in the Act field adjacent to the member containing the QPF_OPTIONS command set that you want to syntax check and press Enter.

If a syntax error exists, it will be detected.

Note
The S (update member) action cannot be used to update a QPF_OPTIONS command set. Only the existing syntax will be checked.

## Executing a command set

The QPF_OPTIONS command set can be executed in the following ways:

- As a batch job submitted from TSO
- By using the Message Advisor ISPF interface panels in foreground or background

For instructions about executing a command set, see “Building and executing a command set” on page 73.

### Executing with a batch job

Perform the following action to execute a command set using a batch job:

1 Submit a batch job specifying the command set as SYSIN to the Message Advisor Batch Server JCL. Sample JCL is located in MAQCNTL member QMR#BJCL.

A sample of the Message Advisor Batch Server JCL and instructions about how to modify the JCL, is provided in “Batch method” on page 84.

### Executing with the Message Advisor ISPF interface

Follow the steps below to execute a QPF_OPTIONS command set through the Message Advisor ISPF interface panels in foreground or background.

1 From the Message Advisor Primary menu, access the member list for the specified request library by performing the following steps:

   a Type 1 in the choice entry field.
Type the name of the PDS member in which you built the QPF_OPTIONS command set in the Request library field, and press Enter.

The Member List panel (Figure 172 on page 300) is displayed.

**Figure 172: Sample Member List panel**

![Member List panel](image)

1. **Select the data set member to be executed or submitted by performing one of the following actions:**
   - Execute the command set in foreground by typing type Q in the Act field adjacent to the appropriate member name, and press Enter.
   - Execute the command set in background by typing X in the Act field adjacent to the appropriate member name to execute it in background and press Enter.

The Confirm Execute panel (Figure 173 on page 300) is displayed.

**Figure 173: Confirm Execute panel**

![Confirm Execute panel](image)

2. **To confirm execution, type 1 in the choice entry field of the Confirm Execute pop-up panel, and press Enter.**

Message Advisor executes the request and then displays several status panels that indicate the status of the QPF request that you just executed.
The Request Status pop-up panel (Figure 174 on page 301) is displayed.

Figure 174: Request Status panel—reviewing QPF_OPTIONS messages

<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>Request Status</th>
<th>Scroll ====&gt; CSR_</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC43868</td>
<td>Request complete. Press Enter for report options.</td>
<td></td>
</tr>
<tr>
<td>Use the scroll actions/keys to view the messages. Then press Enter to continue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request for Server QJER:</td>
<td>Highest condition code: 00</td>
<td></td>
</tr>
<tr>
<td>18:03:36</td>
<td>bmcnode.MAQ.REQUEST(QPF@OPT3)</td>
<td></td>
</tr>
<tr>
<td>Line 001 of 006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant messages:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43077I QPF_OPTIONS IN PROGRESS FOR ROHPXM (TASK 14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43140I MESSAGE ADVISOR QPF HIPERASSIST IS NOW ACTIVE, IMSID=R61P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43157I MESSAGE ADVISOR QPF OVERFLOW PROTECTION IS NOW ACTIVE, IMSID=R61P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMC43076I QPF_OPTIONS FOR ROHPXM (TASK 14) IMS(R61P) ENDED, RC=00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. If this pop-up panel shows a condition code other than 00, review the messages and reports from the Request Results pop-up panel to determine the problem.

5 Press Enter.

The Request Results pop-up panel (Figure 175 on page 301) is displayed.

Figure 175: Request Results panel

<table>
<thead>
<tr>
<th>Command ====&gt;</th>
<th>Request Results</th>
<th>Scroll ====&gt; PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request for Server QJER:</td>
<td>Highest condition code: 00</td>
<td></td>
</tr>
<tr>
<td>18:03:36</td>
<td>bmcnode.MAQ.REQUEST(QPF@OPT3)</td>
<td></td>
</tr>
<tr>
<td>Select one of the following. Then press Enter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. View (browse) all messages and reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Print messages and reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Copy messages and reports to a data set</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Review only the significant messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Exit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6 Type 1 in the choice entry field, and press Enter.

All of the messages and reports are displayed. The Browse Results report (Figure 176 on page 302) is displayed. The Browse Results panel displays the generated messages and reports.

**Figure 176: Sample Browse Results panel—Viewing QPF_OPTIONS**

---

<table>
<thead>
<tr>
<th>Command ===&gt;</th>
<th>Scroll ===&gt; CSR_</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browse Results</td>
<td>Line 000000 of 000028 Cols 001 075</td>
</tr>
<tr>
<td>More: + &gt;</td>
<td>Top of Data **********************************************</td>
</tr>
<tr>
<td>BMC430771 QPF_OPTIONS IN PROGRESS FOR ROHPXM (TASK 14)</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;QPF_OPTIONS IMSID=R61P,TYPE=SET,ACTION=Yes,MAX_REGION=3M</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;PROTECT_PHASE THRESHOLD%=50,RESET%=5,NOTIFY=(WTO,MTO),NOTIFY%=5,</td>
<td></td>
</tr>
<tr>
<td>RESET_TIME=5</td>
<td></td>
</tr>
<tr>
<td>OVERFLOW_PHASE THRESHOLD%=75,RESET%=70,NOTIFY=WTO,</td>
<td></td>
</tr>
<tr>
<td>NOTIFY_INTERVAL=1,WITOR=YES</td>
<td></td>
</tr>
<tr>
<td>PROCESS DSTYPE=RSMB,%USED=03,</td>
<td></td>
</tr>
<tr>
<td>ACTION=(WARN,STOP,UNLOAD_DEQUEUE)</td>
<td></td>
</tr>
<tr>
<td>PROCESS DSTYPE=CNT,%MSG=100,#RECORDS=44,</td>
<td></td>
</tr>
<tr>
<td>ACTION=UNLOAD_DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>PROCESS DSTYPE=CNT,DESTINATION=ARFR*,#MSG=10,#RECORDS=10,</td>
<td></td>
</tr>
<tr>
<td>ACTION=DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>UNLOAD_DSN DSNAME=BMCNODE,%IMSID.DATE.D%TIME.D%DSNNO,</td>
<td></td>
</tr>
<tr>
<td>DISP=MOD,UNIT=SYSDA,CYLS_PRIM=1,CYLS_SEC=10</td>
<td></td>
</tr>
<tr>
<td>ENFORCE TYPE=BMP,%USED=15,ACTION=ABEND</td>
<td></td>
</tr>
<tr>
<td>ENFORCE TYPE=BMP,%USED=10,ACTION=FAIL</td>
<td></td>
</tr>
<tr>
<td>ENFORCE TYPE=BMP,%USED=5,ACTION=WARN</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;END</td>
<td></td>
</tr>
<tr>
<td>BMC43140I MESSAGE ADVISOR QPF HIPERASSIST IS NOW ACTIVE, IMSID=R61P</td>
<td></td>
</tr>
<tr>
<td>BMC43157I MESSAGE ADVISOR QPF OVERFLOW PROTECTION IS NOW ACTIVE, IMSID=R61P</td>
<td></td>
</tr>
<tr>
<td>BMC430761 QPF_OPTIONS FOR ROHPXM (TASK 14) IMS(R61P) ENDED, RC=00</td>
<td></td>
</tr>
<tr>
<td>Bottom of Data **********************************************</td>
<td></td>
</tr>
</tbody>
</table>
---

7 Review the results.

8 Return to the Message Advisor Primary Menu by pressing END until the primary menu is displayed.

This step completes the sample task of executing a QPF_OPTIONS command set by using the Message Advisor ISPF interface panels.

**Test a command set**

Testing the command set is an optional task. However, if you are defining a QPF_OPTIONS command set for the first time, you will want to confirm that it performs in your IMS system as expected.
You can test a QPF_OPTIONS command set by activating it in the test environment and running it against the Message Advisor Test Applications provided by BMC Software.

For more information about using the Message Advisor Test Applications to test the QPF_OPTIONS command set, see the following text:

- “Testing the test case QPF_OPTIONS command set” on page 245 provides step-by-step instructions for testing each segment of a QPF_OPTIONS command set.
- “Message Advisor test applications” on page 393 consists of an MPP and a BMP. Each MPP and BMP input parameter is described in this appendix.
- the installation guide provides instructions for installing the Message Advisor Test Applications.

## Implement a command set

This is an optional task. However, if you want the QPF options to immediately be active whenever IMS is restarted, a QPF_OPTIONS command set must reside in the IMSVS.PROCLIB.

To install a QPF_OPTIONS command set in the IMSVS.PROCLIB, copy the command set and save it in the PROCLIB of the IMS for which you want to activate QPF. Use the following naming conventions when saving the member containing the command set in the PROCLIB:

- If you want to use different QPF_OPTIONS command sets for each IMS system, save the member as QPFcccc (where cccc is your IMSID).
- If you share the PROCLIB data set among several IMS systems and want to share the QPF_OPTIONS command set, save the member as QPFOPTS.

If the QPF_OPTIONS command set specifies `TYPE=LOAD`, the command set will immediately be active; otherwise, the command set will not be active until the next IMS restart.
Manually initiating QPF actions

The Message Advisor Queue Protection Facility (QPF) lets you generate a list of message queue problems and to take corrective actions to resolve any problem on the list. This chapter describes how to access the QPF Problem List and how to initiate actions to correct high-queue levels.

Overview

QPF is primarily an automated facility that manages message queues based on how you have defined the QPF options by using the QPF_OPTIONS command set. However, if you find that your QPF_OPTIONS command set has not accounted for automatic resolution of a situation, you may need to issue a manual corrective action.

To facilitate the manual resolution of message queue problems, QPF lets you generate a list of message queue problems and to take corrective actions to resolve any problem on the list.

When QPF reaches the user-defined threshold for the Monitor Phase, analysis of the transaction, LTERM/User message, and temporary queues begins. Based on this analysis, QPF develops a list of potential problem destinations and regions, and tracks origins that have had high activity since the Monitor Phase began.

You can manually initiate an action to correct any of the queue overflow problems identified on the QPF Problem List.

Methods for displaying the QPF problem list

You can use any of the following methods to display the QPF Problem List:

- Display the problem list from the Message Advisor ISPF interface panels.
- Issue a LIST command in response to a QPF Processing WTOR
- Build and submit a QPF_LIST command set.

Under most circumstances, the easiest way to display the QPF Problem List is by using the Message Advisor ISPF interface panels. Regardless of which method is used, the threshold for the Monitor Phase must have been reached before QPF will create the problem list.

**Display from the Message Advisor ISPF interface panels**

The QPF Problem List can be viewed interactively through the Message Advisor ISPF interface. On the Message Advisor Primary Menu, type 8 (Queue Protection Facility) in the choice entry field and press Enter to display the QPF Problem List. This action initiates an internal system QPF_LIST command that displays the list of QPF problems.

The maximum number of problems that can initially be displayed depends on how you have customized your Session Control options. Once the QPF Problem List is displayed, you can dynamically change the maximum number of problems displayed.

For more information about setting this Session Control option, see “Session Control” on page 45.

For more information about displaying the QPF Problem List by using the Message Advisor ISPF interface, see “Displaying the problem list interactively” on page 311.

**Issue a LIST command in response to a QPF processing WTOR**

A Processing WTOR is issued when a phase starts if WTOR=YES was specified for that phase in the QPF_OPTIONS command set. In this event, you will receive the following Processing WTOR message:

```
BMC43168A Message Advisor QPF FOR IMSID=imsid - REPLY 'LIST' OR 'HELP'
```

The LIST command is allowed in response to Processing WTOR message BMC43168A. It has the following format:

```
LIST nn mm
```

This command lists the worst $nn$ problem destinations and/or regions on the IMS queues (default is 20), and the $mm$ most active origins in the IMS system (default is 5), where $nn$ and $mm$ are numbers from 0 to 99.
You will find it convenient to display a problem list by issuing a LIST command in response to a Processing WTOR message if TSO is not available or you are at the system console.

For more information about the LIST command and other commands that can be issued by using a QPF WTOR, see the *Message Advisor for IMS Reference Manual*.

### Build a QPF_LIST command set

Normally, the QPF_LIST command functions as an internal Message Advisor command that accesses the QPF Problem List by using the Message Advisor ISPF interface. However, you can display a problem list by building a QPF_LIST command set that specifies `TYPE=PROBLEMS` or `TYPE=DETAIL`. The command set can be built by using ISPF EDIT or the Message Advisor ISPF interface panels. The command set can be executed by submitting a batch job, or it can be executed by using the Message Advisor ISPF interface panels in foreground or background.

At times, you may find it useful to build a QPF_LIST command set. For example, if ISPF is unavailable, you will not be able to display the QPF Problem List by using the Message Advisor ISPF interface. In this situation, you might want to display the QPF Problem List through a batch request.

For information about keywords and parameters that must be specified to display a QPF Problem List, see the *Message Advisor for IMS Reference Manual*.

### Methods for initiating a QPF action

You can use any of the following methods to initiate an action against a problem displayed on the QPF Problem List:

- Display the problem list from the Message Advisor ISPF interface panels and issue a QPF_ACTION command set interactively.

- Issue a QPF WTOR Action command.

- Build and submit a QPF_ACTION command set.

For a list of the actions that can be taken, see “QPF actions” on page 309.
Access a problem list by using the Message Advisor ISPF interface panels

Normally, the QPF_ACTION command functions as an internal Message Advisor command that initiates an action against a problem displayed on a QPF Problem List. You can access a problem list by using the Message Advisor ISPF interface panels any time after QPF passes the threshold for the Monitor Phase, and initiate a corrective action against any problem displayed on the list.

An action is initiated by typing the applicable code for the QPF action requested in the Act field adjacent to the problem you wish to correct. Based on the action requested, QPF will initiate an internal system QPF_ACTION command to implement the action.

For instructions about initiating a corrective action by using the Message Advisor ISPF interface, see “Initiating a corrective action interactively” on page 312.

Issue an action command in response to a QPF processing WTOR

A Processing WTOR is issued when a phase starts if WTOR=YES was specified for that phase in the QPF_OPTIONS command set. In this event, you will receive the following Processing WTOR message:

BMC43168A Message Advisor QPF FOR IMSID=imsid - REPLY 'LIST' OR 'HELP'

A QPF WTOR Action command is allowed in response to Processing WTOR message BMC43168A.

You will find it convenient to issue an Action command in response to a Processing WTOR message if TSO is not available, or you are at the system console.

For more information about the Action commands that can be issued by using a QPF WTOR, see the Message Advisor for IMS Reference Manual.

Build a QPF_ACTION command set

You can also initiate an action by building a QPF_ACTION command set that specifies the requested action. The command set can be built by using ISPF EDIT or the Message Advisor ISPF interface panels. The command set can then be executed by submitting a batch job, or it can be executed by using the Message Advisor ISPF interface panels in foreground or background.
At times, you may find it useful to build a QPF_ACTION command set. For example, if ISPF is unavailable, you will not be able to initiate an action from the QPF Problem List that is displayed by using the Message Advisor ISPF interface. In this situation, you might want to initiate a corrective action through a batch request.

For information about the keywords and parameters that must be specified to initiate a QPF_ACTION command set, see the Message Advisor for IMS Reference Manual.

---

# QPF actions

The following QPF actions can be initiated against problems displayed on the QPF Problem List. Some actions are only valid for destinations and other actions are only valid for application programs or input devices.

- **ABEND**
  
  A task is scheduled to terminate the application the next time the IMS region attempts to insert a message. The application will terminate with pseudo-abend code U0474.

- **DEQUEUE**
  
  A task is started to delete the queued messages for a destination.

  **Note**
  
  Before initiating a dequeue, /STOP commands are performed to ensure no activity during the dequeue. If the STOP action was not also specified, the entity will be restarted after the dequeue has completed. The /STOP commands listed in Table 27 on page 310 will be performed. In addition, a /STOP USER or /PSTOPLINK may be performed.

- **FAIL**
  
  A task is scheduled to issue an A7 status code to the application or APPC input device on the next attempt to insert a message.

  **Note**
  
  The FAIL action is ignored for all input devices except APPC. FAIL will cause an APPC input device to be de-allocated.

- **IWAIT**
  
  A task is scheduled to IWAIT the region or input device on the next attempt to insert a message.
Note
ACTION=WAIT can be used an alias for ACTION=IWAIT.

- **IPOST**
  A task is started to restart an IMS region or input device that has been previously IWAITed by QPF.

- **STOP**
  A task is started to issue a STOP command and wait for the response. Destinations are stopped immediately. Regions and input devices are stopped the next time they attempt to insert a message. Table 27 on page 310 shows the commands that the STOP action will perform for each device type.

Table 27: STOP action commands by device type

<table>
<thead>
<tr>
<th>Device type</th>
<th>STOP performs this command</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMB destinations</td>
<td>/STOP TRANSACTION xxxxxxxxx</td>
</tr>
<tr>
<td>APPC destinations</td>
<td>/STOP LUNAME xxxxxxxxx INPUT &amp; OUTPUT</td>
</tr>
<tr>
<td>MSNAME destinations</td>
<td>/STOP MSNAME xxxxxxxxx</td>
</tr>
<tr>
<td>OTMA destinations</td>
<td>/STOP TMEMBER tmember_name TPIPE tpipe_name</td>
</tr>
<tr>
<td>Other destinations</td>
<td>/STOP LTERM xxxxxxxxx</td>
</tr>
<tr>
<td>MPP regions</td>
<td>/STOP TRANSACTION xxxxxxxxx</td>
</tr>
<tr>
<td>BMP regions</td>
<td>/STOP PROGRAM xxxxxxxxx</td>
</tr>
<tr>
<td>Regions if TRAN/PGM unknown</td>
<td>/STOP REGION nn</td>
</tr>
<tr>
<td>APPC input devices</td>
<td>/STOP LUNAME xxxxxxxxx INPUT</td>
</tr>
<tr>
<td>MSNAME input devices</td>
<td>/STOP MSNAME xxxxxxxxx</td>
</tr>
<tr>
<td>OTMA input devices</td>
<td>/STOP TMEMBER tmember_name TPIPE tpipe_name</td>
</tr>
<tr>
<td>VTAM input devices</td>
<td>/STOP NODE xxxxxxxxx</td>
</tr>
<tr>
<td>Other devices if known</td>
<td>/STOP LTERM xxxxxxxxx</td>
</tr>
</tbody>
</table>

- **UNLOAD_DEQUEUE**
  A task is started to unload and dequeue the queued messages for a destination. An UNLOAD_DSN subcommand must be present in the QPF options if this action is selected. The UNLOAD_DSN subcommand is used to determine the unload data set to be used.
Before initiating an unload and dequeue, /STOP commands are performed to ensure no activity during the unload and dequeue. If the STOP action was not also specified, the entity will be restarted after the unload and dequeue has completed.

The /STOP commands listed in Table 27 on page 310 will be performed. In addition, a /STOP USER or /PSTOPLINK may be performed.

Only certain actions can be taken for destinations, regions, and input devices. Table 28 on page 311 shows which actions can be taken for each type.

Table 28: QPF actions for destinations, regions, and input devices

<table>
<thead>
<tr>
<th>QPF action</th>
<th>Destinations</th>
<th>Regions</th>
<th>Input devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABEND</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>DEQUEUE</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAIL</td>
<td>X</td>
<td>X^a</td>
<td></td>
</tr>
<tr>
<td>IWAIT</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>IPOST</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>STOP</td>
<td>X</td>
<td>X</td>
<td>X^b</td>
</tr>
<tr>
<td>UNLOAD_DEQUEUE</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^a FAIL is not supported for OTMA input devices.
^b STOP is not supported for BTAM devices.

Displaying the problem list interactively

When QPF reaches the user-defined threshold for the Monitor Phase, you can view the QPF Problem List, which identifies message queue problems. This task describes how to display the QPF Problem List by using the Message Advisor ISPF interface panels.

1. From the Message Advisor Primary Menu, type 8 in the choice entry field and press Enter.

The QPF Problem List panel (Figure 177 on page 311) is displayed.

Figure 177: Queue Protection Facility Problem List panel
### Initiating a corrective action interactively

This task describes how to initiate a corrective action against a problem displayed on the QPF Problem List.

The QPF Problem List panel displays the thresholds that you have set for the Monitor Phase, the Protect Phase, and the Overflow Phase. The panel also identifies the current QPF phase and how much each message queue is currently used.

The QPF Problem List panel shown in “Displaying the problem list interactively” on page 311 indicates that the LGMSG queue is 12 percent used and the SHMSG queue is zero percent used. The message queues filled to these levels because an application continues to send messages to the printer definition for BMCP0100 even though it has been removed from IMS. This problem will be resolved by unloading and dequeueing the BMCP0100 messages so that they can be requeued to another printer at a later time.

The **Action** field indicates the last action taken. Actions that are in progress are highlighted and preceded by an asterisk (*). For actions a PROCESS statement initiated automatically, the **Statement** field indicates the relative number of the PROCESS statement in the QPF_OPTIONS, followed by (PROCESS). For example, 3(PROCESS) indicates that the third process statement initiated the action. For actions an ENFORCE statement initiated automatically, the **Statement** field indicates the relative number of the ENFORCE statement, followed by (ENFORCE) or the name of the queue that caused the problem (*TEMPQ* or a destination name). For example, 5(*TEMPQ*) indicates that the fifth enforce statement matched when the number of uncommitted messages reached the requested threshold.

<table>
<thead>
<tr>
<th>Act</th>
<th>Type</th>
<th>Name</th>
<th>Messages</th>
<th>SHMSG%</th>
<th>LGMSG%</th>
<th>Action</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>TRN</td>
<td>QPF0001</td>
<td>20</td>
<td>0.00%</td>
<td>8.37%</td>
<td>*IWAIT</td>
<td>5 (<em>TEMPQ</em>)</td>
</tr>
<tr>
<td>_</td>
<td>CNT-V</td>
<td>FLY</td>
<td>999</td>
<td>0.00%</td>
<td>4.44%</td>
<td>WARN</td>
<td>3 (PROCESS)</td>
</tr>
<tr>
<td>_</td>
<td>CNT-V</td>
<td>MASTER1</td>
<td>70</td>
<td>0.01%</td>
<td>0.00%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>CNT-V</td>
<td>MSC21</td>
<td>50</td>
<td>0.01%</td>
<td>0.00%</td>
<td>WARN</td>
<td>4 (PROCESS)</td>
</tr>
<tr>
<td>_</td>
<td>CNT-V</td>
<td>BMCP0100</td>
<td>11</td>
<td>0.00%</td>
<td>0.00%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>CNT-E</td>
<td>LETTUCE</td>
<td>5</td>
<td>0.00%</td>
<td>0.02%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>CNT-E</td>
<td>MESSAGE</td>
<td>5</td>
<td>0.00%</td>
<td>0.02%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>CNT-E</td>
<td>CATTLE</td>
<td>10</td>
<td>0.00%</td>
<td>0.00%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>CNT-E</td>
<td>DEST0XX</td>
<td>4</td>
<td>0.00%</td>
<td>0.01%</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>
Note
Up to half of the lines on the QPF Problem List may be used to display IWAITed regions and input devices, regardless of whether they are currently consuming message queue space. Other regions and/or input devices that are consuming space may not display because they have not been IWAITed, and displaying them would exceed the panel line limit.

To Initiate a corrective action

1 Verify the problem selection criteria by performing the following steps:
   a Verify that the IMSID in the IMSID field is accurate.
   b Review the value for the Limit field and revise it if you want to change the maximum number of problem entries that can be displayed.

2 Determine which corrective action(s) to take.

   For this example, the messages will be unloaded and dequeued from a destination.

   The following actions can be taken for destinations, applications, and device types:

   **Table 29: Action against destination**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dequeue the messages for a destination</td>
<td>D</td>
</tr>
<tr>
<td><strong>Note:</strong> If you choose to dequeue messages, QPF will by default specify FORCE=YES. Because FORCE=YES is specified, the dequeue will be performed without stopping the destination. If possible, you should stop the destination before dequeueing the messages.</td>
<td></td>
</tr>
<tr>
<td>unload and dequeue the messages for a destination</td>
<td>U</td>
</tr>
<tr>
<td>Stop a destination immediately and wait for the response</td>
<td>T</td>
</tr>
<tr>
<td><strong>Note:</strong> For information about the commands that the STOP action performs for various types of destinations, see “QPF actions” on page 309.</td>
<td></td>
</tr>
</tbody>
</table>

   **Table 30: Actions against applications**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminate the application the next time the IMS region attempts to insert a message</td>
<td>A</td>
</tr>
<tr>
<td>Issue an A7 status code to the application the next time the application attempts to insert a message</td>
<td>F</td>
</tr>
</tbody>
</table>
### Actions

<table>
<thead>
<tr>
<th>Actions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop a region the next time it attempts to insert a message and wait for the response</td>
<td>T</td>
</tr>
<tr>
<td>IWAIT the region on the next attempt to insert a message</td>
<td>W</td>
</tr>
<tr>
<td>Restart an IMS region that has been previously IWAITed by QPF</td>
<td>P</td>
</tr>
</tbody>
</table>

**Table 31: Actions against input devices**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue an A7 status code to the application the next time the input device attempts to insert a message</td>
<td>F</td>
</tr>
<tr>
<td>IWAIT the input device on the next attempt to insert a message</td>
<td>W</td>
</tr>
<tr>
<td>Restart an I input device that has been previously IWAITed by QPF</td>
<td>P</td>
</tr>
</tbody>
</table>

**Note:** For information about the commands that the STOP action performs for various types of destinations, see “QPF actions” on page 309.

3. Type **U** in the **Act** field adjacent to BMCP0100 and press **Enter**.

**Note**

You may initiate an action against as many problems as you wish.

The **Confirm QPF Actions panel** (Figure 178 on page 314) is displayed.

**Figure 178: Confirm QPF Actions panel**

4. To confirm execution, type **1** in the choice entry field and press **Enter**.
Message Advisor executes the request and then displays several status panels that indicate the status of the QPF UNLOAD and DEQUEUE request that you just executed. The Waiting pop-up panel (Figure 179 on page 315), which is the first in a series of status and selection list panels, is displayed.

The first time the Waiting pop-up panel is displayed and how often it is displayed are determined by the Session Control option settings. For more information about setting these options, see “Session Control” on page 45.

Figure 179: Waiting panel—reviewing Message Advisor UNLOAD Request Status

<table>
<thead>
<tr>
<th>File</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>L</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>I</td>
<td>-</td>
<td>Waiting</td>
<td>%</td>
</tr>
<tr>
<td>T</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>

Waiting for a response from a Message Advisor Server.
Request in progress 0 minutes 10 seconds.
Press the attention key to choose other options.
Active request for Server OMRP:
12:53:17 Perform QPF action

Significant messages:
BMC43077I QPF_ACTION IN PROGRESS FOR R61P (TASK 4)

The Waiting pop-up panel remains displayed while the dequeue runs. You do not have to press any keys or type any commands while this pop-up panel is displayed; it automatically scrolls to the Request Status pop-up panel (Figure 180 on page 315) when the dequeue completes.

The Request Status pop-up panel displays the status of the requested action by showing any significant messages. You can scroll up and down through the messages with the scroll keys.

Figure 180: Request Status panel—reviewing Message Advisor UNLOAD messages

<table>
<thead>
<tr>
<th>File</th>
<th>Session</th>
<th>Display</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Request Status</td>
<td>Scroll ==</td>
<td>CSR_</td>
</tr>
<tr>
<td>S</td>
<td>BMC43868 Request complete. Press Enter for report options.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Use the scroll actions/keys to view the messages.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Then press Enter to continue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Request for Server OJER:</td>
<td>Highest condition code: 00</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>18:10:15 Perform QPF action</td>
<td></td>
<td>Line 002 of 011</td>
</tr>
</tbody>
</table>

Significant messages:
BMC43077I QPF_ACTION IN PROGRESS FOR ROHPIXM (TASK 19)
BMC43175I QPF_ACTION=UNLOAD STARTED FOR IMSID=R61P, CNT=-E BMC00100
BMC43175I IMSID=R61P COMMAND: /STOP LTERM CATFOOD
BMC43182I MESSAGE ADVISOR QPF UNLOADED 11 MESSAGES FROM IMSID=R61P, CNT=-E CATFOOD TO DSN=RJHJER.R61P.D01249.T181015.D000001
BMC43175I MESSAGE ADVISOR QPF DEQUEUED 11 MESSAGES FROM IMSID=R61P, CNT=-E CATFOOD
BMC43175I IMSID=R61P COMMAND: /START LTERM CATFOOD
BMC43076I QPF_ACTION FOR ROHPIXM (TASK 19) IMS(R61P) ENDED, RC=00

'B-------------------------------------------------------------------------'
5 Review the messages on the Request Status pop-up panel.

This pop-up panel displays the status of the requested process by showing any significant messages. If this pop-up panel shows a condition code other than 00, review the messages and reports from the Request Results pop-up panel to determine the problem.

6 Press Enter.

The Request Results pop-up panel (Figure 181 on page 316) is displayed.

**Figure 181: Request Results panel**

File  Session  Display  Help

---

Command ===> _______________________________ Scroll ===> CSR_

S
L Command ===> _______________________________

I Request for Server QJER:

Highest condition code: 00

T

Select one of the following. Then press Enter.

A 1. View (browse) all messages and reports
   2. Print messages and reports
   3. Copy messages and reports to a data set
   4. Review only the significant messages
   5. Exit


7 Type 1 in the choice entry field, and press Enter.

The Browse Results report (Figure 182 on page 316) is displayed.

**Figure 182: Sample Browse Results panel—viewing Message Advisor DEQUEUE Report**

Command ===> _______________________________ Scroll ===> CSR_

Line 000000 of 000017  Cols 001 075  More: + >

Top of Data

BMC43077I QPF_ACTION IN PROGRESS FOR ROHPXM (TASK 19)

BMC43173I MESSAGE ADVISOR QPF ACTION=UNLOAD_STARTED FOR IMSID=R61P, CNT-E C

BMC431751 IMSID=R61P COMMAND: /STOP LTERM BMCP0100

BMC43182I MESSAGE ADVISOR QPF UNLOADED 11 MESSAGES FROM IMSID=R61P, CNT-E C

BMC43178I MESSAGE ADVISOR QPF DEQUEUED 11 MESSAGES FROM IMSID=R61P, CNT-E C

Initiating a corrective action interactively

Message Advisor for IMS User Guide
8 Review the messages, and press END until the primary menu is displayed.

This step completes the task of processing an action against a problem on the QPF Problem List.
Initiating a corrective action interactively
Understanding Message Advisor and shared queues

This chapter describes how to modify Message Advisor command sets to identify shared queues keywords and how to use DISPLAY, DEQUEUE, UNLOAD, and REQUEUE commands in a shared queues environment.

Overview

Message Advisor provides a comprehensive solution to the problems associated with managing IMS message queues and improves IMS availability by helping you to maintain the integrity of your IMS message queues.

One feature of Message Advisor is the Analyzer Facility. For more information about this feature, which is valid in a shared queues environment only, see “Using the Message Advisor Analyzer Facility” on page 343.

Modifying command sets for shared queues

A Message Advisor command set that executes on an IMS system which uses regular DASD in a non-shared queues environment can work, without change, on an IMS shared queues system. Message Advisor does not require any new keywords to invoke one of the base command types; however, some keyword values (or combinations of values) are invalid when the target IMS is a shared queues system. Additional keywords let you define processing selection criteria more accurately for shared queues environments.

For descriptions of keywords that are specific to shared queues, see “Shared queues keywords” on page 322.
Command set differences

Message Advisor uses command sets to define work for an online or batch server. A command set begins with a verb (REQUEUE, DEQUEUE, DISPLAY, or UNLOAD), terminates with the END command, and requires the IMSID keyword (which identifies the target IMS system). A Message Advisor server can process work for target IMS systems that are using shared queues or for IMS systems that are using DASD queue data sets in non-shared queues environments.

Conversion rules

This section describes the conversion rules that apply to using non-shared queues keywords and values to process command sets for which the target IMS is a shared queues system.

QTYPE and DESTYPE keywords

The QTYPE keyword for shared queues is mutually exclusive with the DESTYPE keyword for non-shared queues.

(The QTYPE keyword is explained in “QTYPE keyword” on page 326.) You can specify the DESTYPE keyword when processing the shared queues to match only messages for destinations that are defined on the current IMS system (in most cases); however, BMC Software recommends that you use the QTYPE keyword in a shared queues environment.

Table 32 on page 320 DESTYPE keyword parameters and their matching destinations for shared queues.

<table>
<thead>
<tr>
<th>DESTYPE=</th>
<th>Matches these destinations on shared queues</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>All queue types-regardless of whether the destination is locally defined</td>
</tr>
<tr>
<td>APPC/TPNAME</td>
<td>QTYPE 7—matches only if the APPC or TPNAME is defined on the current IMS</td>
</tr>
<tr>
<td>BMP</td>
<td>ALLTRAN—matches only BMPs that are defined on the current IMS</td>
</tr>
<tr>
<td>CNT</td>
<td>QTYPE 5—matches only CNTs that are on the current IMS</td>
</tr>
<tr>
<td>DEADQ</td>
<td>QTYPE 5—matches only DEADQ CNTs on the current IMS</td>
</tr>
<tr>
<td>DYNAMIC</td>
<td>QTYPE 5—matches only dynamic CNTs that are on the current IMS</td>
</tr>
<tr>
<td>HELD</td>
<td>None—matches only destinations on local queues</td>
</tr>
<tr>
<td>LTERMS</td>
<td>ALLTERM—matches only LTERMs that are defined on the current IMS</td>
</tr>
</tbody>
</table>
DESTYPE=
Matches these destinations on shared queues

<table>
<thead>
<tr>
<th>DESTYPE</th>
<th>Matches these destinations on shared queues</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPP</td>
<td>ALLTRAN—matches only MPPs that are defined on the current IMS</td>
</tr>
<tr>
<td>MSNAME</td>
<td>QTYPE 8—matches only MSNAMEs on the current IMS</td>
</tr>
<tr>
<td>OTMA</td>
<td>QTYPE 9—matches only if the OTMA is defined on the current IMS</td>
</tr>
<tr>
<td>RSMB</td>
<td>ALLTRAN—matches only RSMBs that are defined on the current IMS</td>
</tr>
<tr>
<td>SMB</td>
<td>ALLTRAN—matches only SMBs that are defined on the current IMS</td>
</tr>
<tr>
<td>STATIC</td>
<td>QTYPE 5—matches only static CNTs that are on the current IMS</td>
</tr>
<tr>
<td>SYSTEM</td>
<td>None—matches only destinations on local queues</td>
</tr>
<tr>
<td>TRANSACTION</td>
<td>ALLTRAN—matches only transactions that are defined on the current IMS</td>
</tr>
<tr>
<td>UNDEFINED</td>
<td>All queue types—matches only if the destination is not defined on the current IMS</td>
</tr>
</tbody>
</table>

**Note:** Because UNDEFINED will match dynamic LTERMs that are not currently active, and may also match destinations that are defined on some other IMS, you should not use it by itself as a criteria for deleting messages.

VSPCNT
QTYPE 5—matches only VSPCNTs on the current IMS

**QTYPE and QUEUE keywords**

The QTYPE keyword for shared queues is mutually exclusive with the QUEUE keyword for non-shared queues. If you specify the QUEUE keyword and Message Advisor encounters a message without a shared queue type, Message Advisor processes the QUEUE keyword normally. When a message contains a shared queue type, Message Advisor ignores the queue in the message and uses the queue type to determine a match.

Table 33 on page 321 lists the QUEUE keyword parameters and their matching shared queue types.

**Table 33: QUEUE keyword parameters and matching shared queue types**

<table>
<thead>
<tr>
<th>QUEUE=</th>
<th>Matches these queue types</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QTYPE 1</td>
</tr>
<tr>
<td>2</td>
<td>ALLTRAN (QTYPEs 1, 3, 4)</td>
</tr>
<tr>
<td>3</td>
<td>QTYPE 3</td>
</tr>
<tr>
<td>4</td>
<td>QTYPE 4</td>
</tr>
<tr>
<td>ALL</td>
<td>ALLDEST (QTYPEs 1, 3, 4, 5, 7, 8, 9)</td>
</tr>
<tr>
<td>BACKUP/5</td>
<td>QTYPE 5</td>
</tr>
<tr>
<td>HELD</td>
<td>None</td>
</tr>
</tbody>
</table>
## Shared queues keywords

This section describes the Message Advisor keywords that are specific to a shared queues environment. For more information about the values that are allowed for these keywords, see the *Message Advisor for IMS Reference Manual*.

### AFFINITY keyword

A shared queue message may have an affinity that indicates that a specific IMS must process it. Use the AFFINITY keyword with the SELECT and REJECT subcommands to select or reject messages with a specific affinity. Consider the following when specifying the AFFINITY keyword:

- For a non-XRF system, the affinity is the IMSID. For an XRF system, the affinity is the first seven characters of the RSENAME.

- The AFFINITY keyword allows a seven-character affinity mask. If you specify a mask, Message Advisor only returns destinations with an affinity that matches the mask. Message Advisor does NOT return destinations without an affinity (i.e., Message Advisor treats `AFFINITY=*` the same as it treats `AFFINITY=?*`).

- The following special values are allowed for the AFFINITY keyword:

  — `&EXISTS` matches only destinations with affinity to the current IMS and which CAN be created on the current IMS. `&EXISTS` is not allowed on SELECT or REJECT subcommands with the REQUEUE command.

---

<table>
<thead>
<tr>
<th>QUEUE=</th>
<th>Matches these queue types</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSPEND</td>
<td>QTYPE 3</td>
</tr>
</tbody>
</table>

### FORCE keyword and the DEQUEUE command

For the DEQUEUE command, `FORCE=YES` forces direct deletions from the structure rather than by using the standard CQS interface. Direct deletions are also used if INTERVAL, SELECT, or REJECT subcommands that include message selection keywords are present.

The other FORCE keyword values are allowed in shared queues command sets for compatibility with DASD queues, but are not used for shared queues destinations.
—&IMS matches only destinations with affinity for the current IMS. &IMS is not allowed on SELECT or REJECT subcommands with the REQUEUE EXTRACT command.

—&NONE matches only destinations with no affinity. You can also specify AFFINITY="" to return only destinations with no affinity.

—&ORPHAN matches only destinations with affinity to the current IMS and which CANNOT be created on the current IMS. &ORPHAN is not allowed on SELECT or REJECT subcommands with the REQUEUE command.

**Note**

AFFINITY=&ORPHAN will not necessarily find all messages that cannot be processed. Messages without affinity will never match, since there may be another IMS that can process them even if the IMS is not currently active. There may also be LTERMs that can still be created by DELTA IMS VIRTUAL TERMINAL or ETO, which are no longer used. You may need to specify a time interval to locate these messages and LTERMs.

- You can specify a list of affinities for the AFFINITY keyword value. The list can include the special values. For example, AFFINITY=(&NONE,IMSA) returns only destinations with no affinity or with affinity to IMSA.

- If you do not specify the AFFINITY keyword, Message Advisor returns all destinations which otherwise match, with or without an affinity.

- Local queue destinations (on non-shared queues systems or on shared queues systems) are considered to have no affinity and will only match a blank or a SELECT subcommand without an affinity.

- AFFINITY is a message-related keyword when used on a SELECT or REJECT subcommand with the REQUEUE command, but is a destination-related keyword for all other commands.

- If you specify &EXISTS or &ORPHAN, processing occurs as follows:
  - Message Advisor performs a FNDEST CREATE for destinations that it finds on the shared queues with an affinity for the current IMS.
  - If Message Advisor cannot find or create the destination, the destination matches &ORPHAN.
  - If Message Advisor finds or creates the destination but the destination is not of the correct type for that queue, the destination matches &ORPHAN.
  - For queue 7 and queue 9, the destination will also match &ORPHAN if the shared queues token does not match the IMS token.
Destinations that exist or that Message Advisor can create as the correct type match &EXISTS.

The intent of the above processing is to allow finding messages on the shared queues which can no longer be processed, and are thus "orphaned."

**ENTRYID keyword**

The ENTRYID keyword is required for the `DISPLAY TYPE=RECORD` command set and optional for the SELECT and REJECT subcommands. ENTRYID displays or selects a specific shared queues record. Consider the following when specifying the ENTRYID keyword:

- All elements or records on the coupling facility are identified by a 12-byte hexadecimal ENTRYID.
- For the `DISPLAY TYPE=RECORD` command set, you can use the SCOPE keyword to indicate whether Message Advisor is to search the primary or the overflow structure. If SCOPE includes both the primary and the overflow structure, Message Advisor searches the primary structure first. If Message Advisor finds the entry ID, it displays that message. Message Advisor only searches the overflow structure if it does not find the entry ID on the primary structure.
- For the SELECT and REJECT subcommands, the ENTRYID is the shared queues equivalent of a DRRN and the ENTRYID keyword is mutually exclusive with the DRRN keyword for non-shared queues.
- You can specify the ENTRYID keyword on SELECT and REJECT subcommands with the DISPLAY, DEQUEUE, and UNLOAD commands, but not with the REQUEUE command.
- You can specify any existing ENTRYID with the `DISPLAY TYPE=RECORD` command.
- For the SELECT and REJECT subcommands, you can only specify the ENTRYID for the first segment of an IMS message. Message Advisor will not find ENTRYIDs of staging queue or control queue records. If you specify the ENTRYID of a private queue message, you must also specify the QTYPE keyword with the private queue type.

**KEY keyword**

Use the KEY keyword with the SELECT and REJECT subcommands to specify a shared queue key in hexadecimal. Consider the following when specifying the KEY keyword:
- All queues on the coupling facility are identified by a 16-byte hexadecimal key that contains the queue type, destination, and affinity. You can use those keywords, or you can specify the key directly.

- The KEY keyword is mutually exclusive with all other destination-related keywords.

- Message Advisor uses the first and last byte of the key to determine the queue type.

- If the first byte has a value of X'01' to X'0B', Message Advisor uses the value as a client queue type. If the first byte has a value of X'40' or greater, Message Advisor uses the last byte to determine the private queue type. Other values for the first byte are invalid.

- For private queue types, when the last byte has a value of 'X01' through 'X0B' or 'X81' through 'X8B', Message Advisor uses the last nibble as the private queue type. Otherwise, the key is assumed to be for the control queue.

- You can specify the KEY keyword on SELECT and REJECT subcommands with the DISPLAY, DEQUEUE, and UNLOAD commands, but not with the REQUEUE command.

**LOG keyword**

Use the LOG keyword with the DEQUEUE command set to indicate whether Message Advisor logs DEQUEUE activities for shared queues. The default is YES, which indicates that CQS dequeues messages with normal logging. NO indicates that messages are deleted directly from the coupling facility structure with no logging, which means that a structure recovery will recover the dequeued messages. BMC Software recommends that you only use LOG=NO if CQS has lost track of a message and LOG=YES does not work.

**NEWAFFINITY keyword**

Use the NEWAFFINITY keyword with the CHANGE subcommand to set a new seven-character affinity. To remove the affinity, specify NEWAFFINITY=, NEWAFFINITY= ' ', or NEWAFFINITY=&NONE.
QTYPE keyword

Use the QTYPE keyword with the SELECT and REJECT subcommands to limit processing to specific queue types. Consider the following when specifying the QTYPE keyword:

- IMS and CQS divide a coupling facility list structure into 11 client and 11 private logical queue types, not all of which are used. Messages that are destined to transactions are stored on client queue types 1, 3, and 4. Messages that are destined to logical terminals are stored on client queue types 5, 7, 8, and 9. Client queue types 2 and 6 are used as staging queues to store continuation segments for transactions and logical terminals, respectively. Normally, only the private control queue, lock queue, and cold queue will have elements queued for any length of time. You can use the QTYPE keyword to select which queue types Message Advisor scans. The default is ALLDEST, which indicates that Message Advisor only scans the client message queue types (1, 3, 4, 5, 7, 8, and 9).

- You can specify a list of queue types with the QTYPE keyword.

- If you only specify client queue types for the QTYPE keyword on a SELECT or REJECT subcommand, the DEQUEUE, UNLOAD, and DISPLAY commands will search only the indicated queues for matching messages. For the REQUEUE command, the MSGRSQTY field in the message prefix determines the queue type for filtering.

- When you specify a private queue (COLDQ or LOCKQ) for the QTYPE keyword by itself or in combination with client queue types, only messages which are currently on the private queue AND which were originally on one of the listed client queues will match. For example, QTYPE=(COLDQ, SERIAL) will display only serial transactions on the cold queue. You must use two SELECT subcommands to select both the COLDQ and the SERIAL client queue.

- If you specify the QTYPE keyword on a SELECT or REJECT subcommand with a DISPLAY, DEQUEUE, or UNLOAD command for non-shared queues, the subcommand will match nothing and an error may result.

- If you specify the QTYPE keyword on a SELECT or REJECT subcommand with a REQUEUE command, filtering will be based on the queue type in the message (if any). Because the queue type in the message can only be a client queue type, the COLDQ and LOCKQ parameters will not match. Also, messages that were created on a non-shared queues system will have a queue type of zero and will not match.

- When specified on SELECT or REJECT subcommands with the REQUEUE command, QTYPE is used only to select messages. You can requeue messages to any queue, regardless of the QTYPE keyword.
**SCOPE keyword**

Use the SCOPE keyword with the DISPLAY, DEQUEUE, or UNLOAD command sets to limit processing to specific structures. The SCOPE keyword is not valid with the REQUEUE command set. Consider the following when specifying the SCOPE keyword:

- You can specify a list of values for the SCOPE keyword.
- With a shared queues system, IMS keeps some messages temporarily on local in-storage queues. You can specify LOCALQ to select these.
- Messages are stored permanently on the coupling facility on one of two structures: the primary structure or the overflow structure. You can specify PRIMARYQ or OVERFLOWQ to select these structures individually, or you can specify SHAREDQ to select both structures.
- SHAREDQ is mutually exclusive with PRIMARYQ or OVERFLOWQ.
- The default is ALLQ, which processes both local and shared queues.

**SQ_MAXQBUF keyword**

This optional keyword is helpful for Shared Queues environments that use the IMS startup parm `QBUFMAX=0`. The QBUFMAX parameter is used to set an upper limit for the number of local QBUFS allowed. It can be specified as a number up to the maximum allowed value of 9999. However, when QBUFMAX is set to zero, the maximum QBUFS that are allowed expands beyond 9999, which is limited only by the amount of extended private that is available to the IMS control region. The number of QBUFS that is allocated is used by QPF to establish high DRRN values for the Short and Large messages, which in turn is used for determining when a Threshold% is being crossed for Monitor/Protect/Overflow phase.

The SQ_MAXQBUF value will be used for the calculation of high DRRNs only in a Shared Queues environment, and only if the IMS startup parameter QBUFMAX is specified as 0. The SQ_MAXQBUF keyword may be set to any value in the range of 10000 and 9999999. If the SQ_MAXQBUF is not specified on the QPF_OPTIONS command, the QPF_OPTIONS TYPE=LIST will display the value of NONE, which means the QBUFMAX value or 9999 is being used for calculating the high DRRNs. This parameter is useful for managing the QPF thresholds in a Shared Queues environment when the local message queues are allowed to expand beyond 9999.

When calculating the high DRRN values, QPF will use the IMS parameter QBUFMAX value if it is other than 0. In the case where IMS's QBUFMAX=0 is specified and the SQ_MAXQBUF keyword is not specified, QPF will use a value of 9999 for the calculation.
For a non-Shared Queues environment, SQ_MAXQBUF may be specified; however it is not used, as the high DRRNs are based on the amount of space allocated for the Short and Large message queue data sets.

Displaying messages for shared queues

This section provides information about using the DISPLAY command in a shared queues environment.

All rules and instructions for displaying IMS message queues that are described in “Displaying IMS message queues” on page 95.

Displaying shared message queues statistics

Use this procedure to display shared queues message queue statistics interactively without building a command set.

For information about the Primary Menu and about displaying non-shared queues statistics, see “Displaying IMS message queues” on page 95.

The ISPF interface provides online help for all panels, pop-up panels, and fields. For information about accessing the online help system, see “Online help” on page 68.

To display queue statistics

1. On the Message Advisor Primary Menu, type 3 in the choice entry field.

2. Type the IMSID for which you want to display message queue statistics in the IMSID field, and press Enter.

The Message Queue Statistics pop-up panel (Figure 183 on page 328) is displayed. This pop-up panel presents statistics on the top 10 destinations for IMSID R61P.

Figure 183: Sample Message Queue Statistics panel (Top 10 Destinations)
For performance reasons, the top 10 destinations are sorted based on space used by first-in-chain records only. The message count is reported, which may not indicate the amount of structure resources used. If multi-record messages are used extensively, you may want to use the sort options. See DESTO and DESTX1 in Figure 183 on page 328.

3 Review the Message Queue Statistics pop-up panel, then press DOWN until you reach the bottom of the report.

At the bottom of the report (Figure 184 on page 329), statistics about Primary and Overflow structures are displayed.

Figure 184: Sample Message Queue Statistics panel--Primary and Overflow Structures

<table>
<thead>
<tr>
<th>PRIMARY STRUCTURE</th>
<th>OVERFLOW STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure element size : 512</td>
<td>Max Overflow struct elements : 0</td>
</tr>
<tr>
<td>Maximum number of struct elements : 186,624</td>
<td>Max Overflow struct elements in use : 0</td>
</tr>
<tr>
<td>Number of struct elements in use : 64,051</td>
<td>Number of Overflow elements in use : 0</td>
</tr>
<tr>
<td>Number of struct entries in use : 9,759</td>
<td>Number of Overflow entries in use : 0</td>
</tr>
</tbody>
</table>


4 Review the statistics, and press END.

The Primary Menu is displayed.

**Displaying destination queue information**

This section explains how to display and browse destination shared queues information at your terminal without building a command set. This method does not let you print reports.
To display and browse destination shared queues information at your terminal without building a command set, perform the following procedure.

**To display destination queue information**

1. On the Message Advisor Primary Menu, type **2** in the choice entry field.

2. Type the IMSID for which you want to display destination information in the **IMSID** field and press **Enter**.

   The Destination Selection pop-up panel is displayed.

   **Figure 185: Destination Selection panel**

   ![Destination Selection panel](image)

   **Command**: __________
   
   **IMSID** . . . R61P +
   
   **Selection** . . __ 1. All DESTs  6. LTERM ready  12. All LOCAL
   2. All TRANs  7. APPC  13. CNT- Local LTERMs
   3. TRAN Ready  8. REMOTE  14. SMB- Local TRANs
   4. TRAN Suspend  9. OTMA  15. HELD- Conversation
   5. TRAN Serial 10. All TERMs  or 16. COLDQ
   11. Staging queues

   **Global queues** _ 1. Both structures 17. LOCKQ
   2. Primary structure only 18. ControlQ
   3. Overflow structure only

   **Destination (use '?' or '*' for masking, use quotes if lowercase/special chars)**
   
   **Dest.** . . __________________________________________________________________
   
   **Affinity** ________ (&NONE, &IMSID, &ORPHAN, or &EXISTS are also allowed)
   
   **Select messages _______ through _______** (queue position range)
   
   **Entryid ____________** (use 8-char DRRN for local queues)

   Select View pulldown for Sort and Format options.

3. Determine the queue type of the destination information that you want to review. For shared client queues, select a number in the range 1 to 11; for local IMS messages (in a shared queues environment), select a number in the range 12 to 15; for private queues, select a number in the range 16 to 18.

   a. Verify that the IMSID in the **IMSID** field is accurate.

   b. Type the number that matches the kind of information you want to view in the **Selection** field.

   c. If you selected to view a global destination, specify the structures that you want to view in the **Global queues** field.
d Type a destination that is valid for your site in the **Dest** field (to display all destinations for this IMSID, leave this field blank).

---

**Note**

To display messages that have been identified as errors, use option 9 on the Primary Menu. For more information, see “Using the Message Advisor Analyzer Facility” on page 343.

Masking is allowed in the **Dest** field: ? replaces one character in a multicharacter string; * replaces the rest of the string.

e Type an affinity in the Affinity field to display messages with a specific affinity. Masking is allowed

f Type values in the **Select messages _____ through _____** field to process a range of messages.

When you enter a range of messages to be processed, the QPOSITION keyword is used to select only those messages. The counts on the Destination List pop-up panel will include only messages in the specified range and the Display messages option will only select those messages.

For example, if transaction PART has 100 messages queued but you enter a range of 1 through 10, PART will display with a count of 10. If you type a D to dequeue PART, only the first 10 messages will be dequeued.

If you enter only the first number, only one message is processed for each destination.

g Press Enter.

The Destination List pop-up panel is displayed.

---

**Figure 186: Destination List panel**

<table>
<thead>
<tr>
<th>Command =&gt;</th>
<th>Destination List</th>
<th>Scroll =&gt; HALF</th>
</tr>
</thead>
<tbody>
<tr>
<td>S=Display messages</td>
<td>A=Display messages</td>
<td>Row 00001 of 00024</td>
</tr>
<tr>
<td>D=Dequeue/reset</td>
<td>F=Deq/force</td>
<td>More: +</td>
</tr>
<tr>
<td>T=Type</td>
<td>Destination Mgs.</td>
<td>0.00% TESTMSC2</td>
</tr>
<tr>
<td></td>
<td>Msgs.</td>
<td>0.03% DFSSAM02 DGW7</td>
</tr>
<tr>
<td>TRAN1 TESTMSC2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>TRAN1 PART</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>TSERL4 RCUTC10</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>LTRM5 DGW3</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>LTRM5 INPROGE</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>LTRM5 WAIT0001</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>LTRM5 ZZZZ0001</td>
<td>202</td>
<td>202</td>
</tr>
<tr>
<td>LTRM5 DGW4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>LTRM5 SMASTER</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>LTRM5 WAIT0002</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>LTRM5 ZZZZ0002</td>
<td>303</td>
<td>303</td>
</tr>
<tr>
<td>APPC7 SYNC</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>APPC7 ASYNC</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>APPC7 ASFDASDF</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Note

The % Used column in shows the percentage of messages in the Overflow and Primary structures. (Primary entries are displayed first; Overflow entries are displayed at the bottom of the destination list.)

A greater than symbol following a destination indicates that more information exists and can be displayed by scrolling to the right.

Orphaned APPC and OTMA destinations are identified in the Affinity column.

4 To select an entry from the list of destinations in the Destination List pop-up panel, type S in the selection field next to the destination and press Enter.

The Message List pop-up panel is displayed with a list of queued messages.

Figure 187: Message List panel

5 View the message record in hexadecimal mode or formatted mode.

- To view the message record in hexadecimal mode, type S in the Act field and press Enter.

The message record is displayed in hexadecimal mode.

Figure 188: Message Display—hexadecimal mode
To view the message prefix in formatted mode, type P in the Act field and press Enter.

The message record is displayed in formatted mode.

**Figure 189: Message Display—formatted mode**

6 Press END until the Primary Menu is displayed.
Dequeueing shared queues messages

Message Advisor supports dequeueing all messages and elements on the shared queues structures. With the ability to dequeue elements from the staging queues and the private queues, you can clean up when CQS loses track of messages or when errors occur in CQS or IMS. However, BMC Software recommends caution when dequeueing from these queues. You should not dequeue elements unless you are sure CQS will not need them. You must use `FORCE=YES` or `LOG=NO` to dequeue from the staging or private queues. `FORCE=YES` bypasses some CQS processing in order to delete elements that CQS will not delete, but continues to log the deletion. `LOG=NO` completely bypasses CQS and deletes directly from the coupling facility.

Interactive method

With the interactive method from the Message List pop-up panel in "Displaying destination queue information", you can use action code D, F, or N to dequeue a single message.

Note

For shared queues, the F action code forces direct deletions from the structure rather than by using the standard CQS interface. Direct deletions are also used if INTERVAL, SELECT, or REJECT subcommands that include message selection keywords are present.

The N action code bypasses CQS entirely and deletes without logging.

When multi-record messages are displayed on the pop-up panel, a D, F, or N action code is invalid on all but the first record of a message (but the S, P, and H codes are all valid display functions for any records).

With the interactive method, you can also use D, F, or N from a Destination List pop-up panel (“Displaying destination queue information” on page 329) to dequeue all selected messages for a destination.

It might be possible for the same destination to belong in Primary and Overflow structures; if so, separate lines will be displayed.

Command set method

The non-interactive method of dequeueing requires that you code your own DEQUEUE command set and submit it to an online server or a batch Message Advisor server. To use the online server approach, perform the following steps:

1. From the Message Advisor Primary Menu, select option 1.
Because the Build feature of the panels does not support any keywords for shared queues, BMC Software recommends that you use the edit function (select E on a member name, or type E member on the command line) to change or create a member and to set up one or more command sets with IMSIDs that identify IMS systems which use shared queues.

Here are some tips for creating and executing a DEQUEUE command set for shared queues:

- For a simple dequeue of a destination, BMC Software recommends by using the DEST, AFFINITY, and QTYPE keywords on a SELECT subcommand. Processing will be more efficient if all three keywords are specified, since they can be used to construct a complete shared queues key.

  **Example**

  ```
  DEQUEUE IMSID=IMSA
  SELECT DEST=L3960T2,QTYPE=LTERM5,AFFINITY=&NONE
  END
  ```

- Avoid using the DESTYPE and QUEUE keywords. Use the AFFINITY and/or QTYPE keyword with the SELECT subcommand instead. Use these keywords only with command sets that specify an IMSID of a shared queues system; otherwise, the command set terminates with an error message.

- Use SCOPE to limit processing and/or improve efficiency; otherwise, SCOPE defaults to ALLQ, which processes both local and shared queues.

  **Note**

  When a multi-record message is selected for dequeue, the middle-in-chain and last-in-chain records are dequeued even if they exist in a different structure and the structure was excluded with the PRIMARY value or the OVERFLOW value with the SCOPE keyword. If the first-in-chain record is selected, all remaining records are also processed.

- You can use the QTYPE keyword with the SELECT subcommand, with other keywords such as DEST (with or without masking), to target one or more destinations to be dequeued. You can also use the QTYPE keyword on the REJECT subcommand.

- You can use MODE=VALIDATE to determine the extent of work that Message Advisor would perform with the default value MODE=DEQUEUE. MODE=VALIDATE is similar to executing an UNLOAD command without the unload data set. This is a good practice when dequeuing more than a single destination.
Unload shared queues messages

Unload procedures are essentially the same for IMS systems that use shared queues or DASD queues.

Several differences exist between UNLOAD and DEQUEUE:

- IMS message records are written to an output data set in UNLOAD, but the data is not deleted as in the DEQUEUE command set. (If you want to delete the data while unloading it to the output data set, use MODE=UNLOAD_DEQUEUE on the DEQUEUE command set.) An unload data set can be used as input in a REQUEUE TYPE=FILE command set to put back all or selected messages.

- An OUTPUT subcommand should be used unless the customization default data set is acceptable. Unload data sets can be preallocated with RECFM=VB and BLKSIZE equal to LRECL+4, which should be at least four bytes greater than the longest record that would be unloaded.

Following is a tip for creating and executing an UNLOAD command set for shared queues:

- For a simple unload of a destination, BMC Software recommends using a SELECT subcommand with the QTYPE, DEST, and AFFINITY keywords. Processing will be more efficient if all three keywords are specified, since they can be used to construct a complete shared queues key.

Figure 190 on page 336 is an example of this type of command set.

**Figure 190: UNLOAD command set (single destination)**

```
UNLOAD IMSID=IMSA
  SELECT DEST=L3960T2,QTYPE=LTERM5,AFFINITY=&NONE
  OUTPUT DSN=MAQ.UNLOAD.D%DATE.T%TIME,DISP=NEW,
           CYLS_PRIM=5,UNIT=SYSDA
END
```

- Avoid using the DESTYPE and QUEUE keywords. Use AFFINITY and/or QTYPE on the SELECT subcommand instead. Use these new keywords only with command sets that specify an IMSID of a shared queues IMS system; otherwise, the command set terminates with an error message.

- Use SCOPE to limit processing and/or improve efficiency; otherwise, SCOPE defaults to ALLQ, which processes both local and shared queues.
Note
When a multi-record message is selected for unload, the middle-in-chain and last-in-chain records are unloaded even if they exist in a different structure and the structure was excluded with the PRIMARY value or the OVERFLOW value with the SCOPE keyword. If the first-in-chain record is selected, all remaining records are also processed.

- You can use the QTYPE keyword with the SELECT subcommand, with other keywords such as DEST (with or without masking), to target one or more destinations to be unloaded. You can also use the QTYPE keyword on the REJECT subcommand.

Requeue shared queues messages

IMS shared queue systems no longer dump message queues to the log on a SNAPQ, DUMPQ, or PURGE. As a result, these checkpoints are now of little concern to the way that Message Advisor processes a REQUEUE command set. A REQUEUE that uses SLDS or OLDS, which include TYPE=REPROCESS or TYPE=EREFAIL, now must contain INTERVAL with a START keyword or a NEWER_THAN keyword.

Message Advisor automatically selects the correct SLDS for the interval specified unless Message Advisor is overridden with one or more INPUT DSN subcommands. Only 01 and 03 records appearing on the input data sets for the specified interval are processed.

By default, a TYPE=COLD REQUEUE will attempt to use the last DUMPQ checkpoint taken before the IMS system was converted to shared queues. This approach is most useful when initially converting the IMS system from DASD to shared queues.

Figure 192 on page 338 and Figure 193 on page 338 show REQUEUE examples by using different TYPE keyword values.

The examples in Figure 191 on page 337 allocate and read the SLDS data sets for activity occurring during a one-hour period specified by the INTERVAL subcommand. 01 and 03 records that satisfy the two SELECT subcommands are extracted to the data set name that is specified by the OUTPUT subcommand.

Figure 191: Sample requeue TYPE=REPROCESS command

```
REQUEUE IMSID=IMSA,TYPE=REPROCESS,MODE=EXTRACT
INTERVAL START=2000149/1300000,STOP=2000149/1400000
SELECT DEST=PR*,QTYPE=5
SELECT DEST=A*,QTYPE=ALLTRAN
OUTPUT DSN=MAQ.EXTRACT.FILE1.D%DATE
END
```

The example in Figure 192 on page 338 uses TYPE=EREFAIL instead of REPROCESS. The processing is similar to the example in Figure 191 on page 337, except the only
records extracted are the messages that were added to the queues by IMSB, but not deleted from the queues by the same IMS during the one-hour period. The only problem is that the message may have been deleted from another IMS system and may have been logged to different SLDS data sets.

**Figure 192: Sample requeue TYPE=EREFAIL command**

```sql
REQUEUE IMSID=IMSB,TYPE=EREFAIL,MODE=EXTRACT
   INTERVAL START=2000149/1300000,STOP=2000149/1400000
   SELECT DEST=PR*,QTYPE=(5,8)
   OUT DSN=MAQ.EXTRACT.FILE2.D%DATE
END
```

If that type of scenario is possible and must be taken into account, multiple INPUT DSN subcommands must be coded to include all SLDS data sets for all IMS systems in the group corresponding to the interval period. Message Advisor does not do this automatically, but you could use it to aid in locating the correct data sets by using Primary Menu option 4 or by submitting multiple REQUEUE commands with different IMSID values.

The example in Figure 193 on page 338 uses TYPE=FILE and MODE=REQUEUE, using as input only 01 and 03 records that were extracted in Figure 191 on page 337. INTERVAL and SELECT criteria have been modified so that only a subset of messages from the input data set name would be put back to the IMS global queues.

**Figure 193: Sample requeue TYPE=FILE command**

```sql
REQUEUE IMSID=IMSA,TYPE=FILE,MODE=REQUEUE
   INTERVAL START=2000149/1340000,STOP=2000149/1400000
   SELECT DEST=PRDEST1
   INPUT DSN=MAQ.EXTRACT.FILE1.D%DATE
END
```

Following are some tips for creating and executing a REQUEUE command set for shared queues:

- The SCOPE keyword is not valid on the REQUEUE command set.

- With types REPROCESS and EREFAIL, you might have to run a REQUEUE command set by using each IMSID that is participating in a structure group or by coding multiple INPUT DSN subcommands for an all-inclusive processing of a TYPE=EREFAIL.

- Using MODE=EXTRACT on types EREFAIL and REPROCESS is a good practice. You can execute this command set even when the IMS is not active. Upon completion, you will have an output data set containing the extracted records and the REQUEUE report.

A subsequent REQUEUE TYPE=FILE with INPUT DSN=EXTRACT data set name can be executed later with more stringent SELECT or REJECT criteria. Also, REQUEUE TYPE=FILE , MODE=EXTRACT with different SELECT or REJECT criteria and an OUT DSN could be executed to generate a new report and a second extract file (ultimately
you can use the default `MODE=REQUEUE` to put certain messages back to the global queues).

## Processing private queue type messages

CQS uses the private queue types to help manage the client queues. IMS (the client) is generally unaware of messages on the private queues. Most of the private queue types are used to hold messages briefly while they are being moved or deleted. Only two private queue types (COLDQ and LOCKQ) contain messages for longer periods. In addition, the ControlQ contains control elements for CQS (these are not IMS messages).

The COLDQ contains any messages which were on the LOCKQ when the IMS system was cold-started. CQS and IMS do not process these messages, and the messages remain on the COLDQ unless you take action. You can use Message Advisor to view the COLDQ messages, UNLOAD the messages and REQUEUE them, or DEQUEUE the messages.

The LOCKQ contains messages which an IMS system has locked. Messages currently being processed by a message region are on the LOCKQ, as well as held conversational messages. You can use Message Advisor to view the LOCKQ and verify that the messages exist. While Message Advisor allows dequeueing messages from the LOCKQ in emergency situations, this is normally not required or recommended. Cold-starting the IMS system removes the messages from the LOCKQ.

The ControlQ contains control elements which CQS uses to retain information about the structures, such as log tokens and a list of queues on the overflow structure. You can use Message Advisor to view the control elements for diagnostic purposes. While Message Advisor allows deleting control elements for emergency cleanup situations, this is not required or recommended, especially on production systems.

## Viewing COLDQ messages

To view the COLDQ messages interactively, perform the following steps:

1. On the Message Advisor Primary Menu, select option 2.

   The Destination Selection pop-up panel (Figure 185 on page 330) is displayed.

2. Select options 16 and 1 for Selection and Global queues, respectively, from the Destination Selection pop-up panel.
The Destination List pop-up panel (Figure 186 on page 331) is displayed.

3 To select an entry from the list of destinations in the Destination List pop-up panel, type S in the selection field next to the destination and press Enter.

The Message List pop-up panel (Figure 187 on page 332) is displayed.

4 Type S to choose a record from the Message List pop-up panel.

The record is displayed.

You can also use batch processing to view the COLDQ messages (Figure 194 on page 340).

Figure 194: Command Set: DISPLAY COLDQ messages sample JCL

```
DISPLAY IMSID=R61P,TYPE=DEST
SELECT QTYPE=COLDQ
END
```

To display the text of the messages, specify TYPE=MESSAGE instead of TYPE=DEST.

**Viewing LOCKQ messages**

To view the LOCKQ messages interactively, perform the following steps:

1 On the Message Advisor Primary Menu, select option 2.

The Destination Selection pop-up panel (Figure 185 on page 330) is displayed.

2 Select options 17 and 1 for Selection and Global queues, respectively, from the Destination Selection pop-up panel.

The Destination List pop-up panel (Figure 186 on page 331) is displayed.

3 To select an entry from the list of destinations in the Destination List pop-up panel, type S in the selection field next to the destination and press Enter.

The Message List pop-up panel (Figure 187 on page 332) is displayed.

4 Type S to choose a record from the Message List pop-up panel.

The record is displayed.
You can also use batch processing to view the LOCKQ messages (Figure 195 on page 341).

Figure 195: Command Set: DISPLAY LOCKQ messages sample JCL

```plaintext
DISPLAY IMSID=R61P,TYPE=DEST
SELECT QTYPE=LOCKQ
END
```

To display the text of the messages, specify `TYPE=MESSAGE` instead of `TYPE=DEST`.

**Viewing CONTROLQ elements**

To view the CONTROLQ elements interactively, perform the following steps:

1. On the Message Advisor Primary Menu, select option 2.

   The Destination Selection pop-up panel (Figure 185 on page 330) is displayed.

2. Select options 18 and 1 for Selection and Global queues, respectively, from the Destination Selection pop-up panel.

   The Destination List pop-up panel (Figure 186 on page 331) is displayed.

3. Type S to choose a record from the Destination List pop-up panel.

   The record is displayed.

You can also use batch processing to view the CONTROLQ elements (Figure 196 on page 341).

Figure 196: Command Set: DISPLAY CONTROLQ elements sample JCL

```plaintext
DISPLAY IMSID=R61P,TYPE=DEST
SELECT QTYPE=CONTROLQ
END
```

To display the text of the elements, specify `TYPE=MESSAGE` instead of `TYPE=DEST`.

**Unload COLDQ messages**

If COLDQ messages exist, you can use a command set similar to the one in the figure below to UNLOAD them.
Figure 197: Command Set: UNLOAD COLDQ messages

UNLOAD IMSID=R61P
SELECT QTYPE=COLDQ
OUTPUT DSN=RIHJER.R61P.EXTRACT4
END

Output files specified in Figure 197 on page 342 that contain COLDQ messages could be used as input on a REQUEUE command set; however, Message Advisor processing can scrap the messages.

Dequeue COLDQ messages

If COLDQ messages exist, you can use a command set similar to the one in the figure below to DEQUEUE them.

Figure 198: Command Set: DEQUEUE COLDQ messages

DEQUEUE IMSID=R61P,FORCE=YES
SELECT QTYPE=COLDQ
END

FORCE=YES is required to dequeue COLDQ messages.
Using the Message Advisor Analyzer Facility

This chapter describes how to use the Message Advisor Analyzer Facility.

Overview

The Analyzer Facility produces printed or online reports on the contents of the Primary and Overflow structures (which comprise the global queues), displays statistics by queue type, and reports a variety of IMS data errors.

Generating an Analyzer report

You can examine the contents of an Analyzer Facility report in detail through the ISPF interface. To generate the report, perform the following steps:

1. From the Message Advisor Primary Menu, type 9 in the choice entry field and press Enter.
   The Analyzer Report is generated.

   **Note**
   To regenerate the report, press Enter again.

2. To scroll through the report, press F7 and F8.

3. To submit a command set to the Message Advisor server, use the following sample command set:
   ```
   DISPLAY TYPE=ANALYZER,IMSID=R61P END
   ```
A sample output report is shown in Figure 199 on page 344.

**Figure 199: Sample Analyzer Report**

```
QTYPE   STRUCT%  #DESTS  #ENTRIES  #ELEMENTS  SIZE/1000  OIC%  STATUS
TRAN    0.01%       1         2          2          0  -ALL-
LTERM   44.69%     134     5,214     33,058     14,775  73.532
APPC    12.91%       4     1,507      4,560      1,641  -ALL-
OTMA    2.49%       6       291        582        284  -ALL-
LTERMSTG 23.48%      98     2,740     25,844     12,687  50.364
TOTAL   83.61%     145     9,754     64,046     29,389  71.908
CNTLQ    0.04%                 5          5
PRIMARY TOTAL:   83.65%     145     9,759     64,051     29,389  71.908
BMC43076I DISPLAY FOR RIHKEB4 (TASK 3) IMS(R61P) ENDED, RC=00
```

**About the Analyzer report**

The Analyzer report (see the "Generating an Analyzer report" topic) will display one to three main sections:

- Statistics section for the Primary structure
- Statistics section for the Overflow structure (if applicable)
- Error section (if applicable, see “Error section” on page 348)

The statistics section for the Primary structure is always displayed. The statistics section for the Overflow structure is displayed only when the structure is defined and populated because capacity levels of the Primary structure, at some time, have surpassed levels that had been defined for the IMS group. The error section can exist for structure, depending on the results of the analysis that is being performed in the structure lists.

Information in the **QTYPE** column of the statistics section (for the Primary structure and the Overflow structure) is displayed in the following order:

- Client queue types:
  - Ascending QTYPE (numeric values)
  - TRANSTG (if applicable)
  - LTERMSTG (if applicable)

- Private queue types:
  - COLDQ (if applicable)
  - LOCKQ (if applicable)
Client queue types are structure lists that pertain to customer processing that is managed by IMS in shared queues processing. In addition to the QTYPEs noted in “Understanding Message Advisor and shared queues” on page 319, two staging queues can also be reported by the Analyzer Facility:

- TRANSTG
- LTERMSTG

Because all messages on TRANSTG and LTERMSTG queues must have an entry on the appropriate ready queue, these queues are not referenced by specific QTYPE values. However, because these queues can consume significant amount of space on the structure list (depending on your processing) they are presented in the Analyzer report.

Private queue types are structure lists that are used by the IMS Common Queue Server (CQS) to manage Client activity (and the recovery of that activity) in coupling facility list structures. If messages exist on any of these queues, they follow the Client queues TOTAL for the Primary structure or the Overflow structure.

Statistics section

Column headers and values in the statistics section are as follows:

**QTYPE**

This column reports in-use categories of messages in the Global Queues structure set.

Client QTYPEs are listed first, in sequence by the corresponding QTYPE number (1 through 11), except for TRANSTG (QTYPE 2) and LTERMSTG (QTYPE 6). Client QTYPEs are followed by a TOTAL line.

IMS private QTYPEs are displayed next, and an asterisk flags private QTYPEs that are greater than one percent. A second TOTAL line for the Primary structure combines Client and Private queue statistics (only this final total is displayed in the Overflow structure report).

**Note**

The partial lowercase spelling for Overflow structure QTYPEs distinguishes them from Primary structure QTYPEs.
STRUCT%

The formula for this column is one of the following formulas, whichever resource is most restricted:

- \( 100 \times \left( \frac{\#ELEMENTS}{\text{structure TOTAL} \ #ELEMENTS} \right) \)
- \( 100 \times \left( \frac{\#ENTRIES}{\text{structure TOTAL} \ #ENTRIES} \right) \)

#DESTS

This column reports the number of unique IMS destinations. This number is reported only for Client QTYPEs. For non-staging QTYPEs (this excludes TRANSTG and LTERMSTG), #DESTS is the same as the number of unique keys found in the structure for a QTYPE, and the sum of these QTYPEs is reported on the total line. TRANSTG and LTERMSTG do not participate in the total line because their #DESTS count reflects the number of unique IMS destinations that have one or more messages with multiple records.

**Note**

In the sample Analyzer report in “About the Analyzer report” on page 344, 11 for LTERMSTG indicates that 11 destinations from other QTYPE categories had multi-record messages (OIC% not equal to -ALL-) and were continued in LTERMSTG. These 11 destinations must have come from LTERM/primary, LTERM/overflow, and LOCKQ/primary.

Because each private queue multi-record message increments the count for the appropriate staging queue, we know that LOCKQ has participated in one of these 11 reported destinations (50% * #ENTRIES). The other 10 destinations came from LTERM in Primary and Overflow structures. Therefore, 10 of these 44+2 destinations have one or more multi-record messages.

#ENTRIES

This column reports the total number of IMS records for this type. For non-staging types, this number equals the number of IMS messages—because only the first record of a message would exist on that QTYPE.

The following computations by using #ENTRIES and OIC% can be performed to determine several facts about messages and records in the structure:

- Non-staging QTYPE: #ENTRIES = number of messages
- Non-staging QTYPE: #ENTRIES * OIC% = number of single record messages
- Non-staging QTYPE: #ENTRIES * (100-OIC%) = number of multi-record messages
TRANSTG or LTERMSTG: \#ENTRIES = number of records (MIC or LIC)

TRANSTG or LTERMSTG: \#ENTRIES * OIC\% = number of messages (FIC is elsewhere)

TRANSTG or LTERMSTG: \#ENTRIES * (100-OIC\%) = number of MIC records

#ELEMENTS

This column reports the total number of structure elements that are required to write the IMS records (#ENTRIES). The element size (512 bytes, for example) is reported at the end of the DISPLAY TYPE=STATISTICS report. If an IMS data size is 700 bytes and the element size is 512 bytes, two structure elements are required to store the message. CQS also requires a few bytes of header information.

SIZE/1000

This column reports the total length of all IMS data records, divided by 1000 for the type.

OIC\%

OIC stands for only-in-chain, which means that there is one (and only one) IMS record making up an IMS message (FIC, MIC, and LIC stand for first-in-chain, middle-in-chain, and last-in-chain, respectively). If a row reports ALL (ALL=100) in the OIC\% column, no IMS messages for that QTYPE had multiple records continued in another QTYPE.

Note

A multiple record message could have an FIC message in the LTERM QTYPE, for example, then have zero or more MIC records and a LIC record in the LTERMSTG type. Most QTYPES have OIC or FIC records only; TRANSTG and LTERMSTG have only MIC and LIC records.

For TRANSTG and LTERMSTG, this column should be interpreted as LIC\% instead of OIC\%. In this example for LTERMSTG, 83.101\% of the 432 entries were LIC records and 16.899\% were MIC records.

STATUS

If a data error is detected for any records that are read for the QTYPE, this field will contain an error reference note number. An error report would be generated, following the Primary or Overflow structure report. The error report would give an error count for each type of error detected, and the associated error text would be generated.
In addition to displaying statistics by queue type, the Analyzer Facility detects IMS data errors and displays a Message Error List (the figure below).

**Figure 200: Sample Message Error List**

<table>
<thead>
<tr>
<th>QTYPE</th>
<th>Q#</th>
<th>ERROR#</th>
<th>TIMESTAMP</th>
<th>DEST</th>
<th>ENTRYID/KEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>LTERMSTG 6</td>
<td>#31</td>
<td>2003/286 11:57:38.2</td>
<td>06C9D4E2C14040401A2A4860603784</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>LTERMSTG 6</td>
<td>#31</td>
<td>2003/286 11:57:38.2</td>
<td>06C9D4E2C14040401A2A4860603785</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>LTERMSTG 6</td>
<td>#31</td>
<td>2003/286 11:57:38.2</td>
<td>06C9D4E2C14040401A2A4860603786</td>
<td></td>
</tr>
<tr>
<td>_</td>
<td>LTERMSTG 6</td>
<td>#31</td>
<td>2003/286 11:57:38.2</td>
<td>06C9D4E2C14040401A2A4860603787</td>
<td></td>
</tr>
</tbody>
</table>

To view the error records that are listed in Figure 200 on page 348 interactively, type S in the selection field next to the record that you want to view.

You can also use batch processing to view the error records that are listed in Figure 200 on page 348 (see sample JCL in Figure 201 on page 348).

**Figure 201: Command Set: DISPLAY Analyzer errors (KEY) sample JCL**

```plaintext
DISPLAY IMSID=R61P,TYPE=MESSAGE
SELECT KEY=06C9D4E2C14040401A2A4860603784
END
```

In Figure 201 on page 348, KEY is used to specify a 16-byte key from the error report.

If a 12-byte ENTRYID is listed instead, use the example in Figure 202 on page 348.

**Figure 202: Command Set: DISPLAY Analyzer errors (ENTRYID)**

```plaintext
DISPLAY IMSID=R61P,TYPE=RECORD,ENTRYID=12-byte value
END
```

**Temporary queue errors**

In a non-shared queues environment, transactions in MPP regions--and, more often, in batch message processing (BMP) regions--can create messages that are sent to "temporary queues." Because processing has not ended and no checkpoint has been issued, these messages are marked internally within IMS as *inaccessible* (the temporary queue). When processing ends or a checkpoint is issued, the messages are marked *accessible* for the target destination to process.

A similar mechanism exists in a shared queues environment. Messages that have been sent to temporary queues are placed on LTERMSTG (queue 6) or TRANSTG...
(queue 2) and appear as errors to the Analyzer Facility. When processing ends or a checkpoint is issued, a message is placed on TRAN Ready (queue 1) or LTERM Ready (queue 5), and the messages are accessible for the target destination to process. When the messages become accessible, the errors that had been detected by the Analyzer Facility disappear.
Message Advisor reports

This appendix describes and shows samples of Message Advisor reports. These reports can be printed or viewed online through the ISPF interface.

Overview

When building Message Advisor requests, you have various options that enable you to select the type of reports and level of detail. When you execute requests, you can view the report data online, have it printed, or have it written to a data set. The following sections show you samples of the various reports available.

Message Advisor reports can be displayed in uppercase or lowercase. This option lets you print and display reports in all uppercase, which satisfies the need of some character sets. You specify the SERVER_OPTIONS UPPERCASE=YES option on the CUSTOMIZE command. For more information about customization, see the online help and the installation guide.

Note

If you specify MSGCLASS=*, the default is the same as for your TSO user ID. This default can affect where reports are routed for printing at your site.

CUSTOMIZE reports

This section describes and shows examples of reports created by several types of CUSTOMIZE commands.

This section contains the following reports:

- CUSTOMIZE List Message Advisor Server IDs and IMS system IDs
- CUSTOMIZE List IMSID options
- CUSTOMIZE List Server options
List server IDs and IMSIDs

The sample report below shows the command set and lists the Message Advisor Server IDs and the IMS system IDs running Message Advisor.

The report also shows when the Message Advisor Server and the IMS options were last changed. For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 203: List Options report

```
BMC43077I CUSTOMIZE IN PROGRESS FOR RIHBDR3 (TASK 5)
<<<<CUSTOMIZE
<<<< LIST_OPTIONS
<<<<END
Message Advisor for IMS V1.0.02 - Server ID RMAAMAQ 09/24/2001
CUSTOMIZE LIST_OPTIONS Report
SERVER ID TITLE            LAST CHANGED    BY
@@@@@@@@  Q:MANAGER IMS    N/A             BMC
QMRRIP1   Q:MANAGER IMS    00/227-10:18:14 RIHBDR
RIPS      MAQ SAF ADVISOR  01/198-10:30:35 RIHBDR
RIPSMAQ   MAQ ADVISOR SAF  01/198-9:33:26 RIHBDR2
RIP2OMR   Q:MANAGER IMS    00/213-19:37:36 RIHBDR3
RIP7OMR   Q:MANAGER IMS    00/232-13:47:42 RIHBDR
RMAAMAQ   MESSAGE ADVISOR  01/110-10:01:37 RIHBDR
RMABMAQ   MESSAGE ADVISOR  01/110-10:02:39 RIHBDR
RMAIMAQ   MESSAGE ADVISOR  01/110-10:03:37 RIHBDR
RMAOMAQ   MESSAGE ADVISOR  01/110-10:03:39 RIHBDR3
RMAZMAQ   MESSAGE ADVISOR  01/233-10:43:39 RIHBDR3
RMA2MAQ   MESSAGE ADVISOR  01/204-11:51:03 RIHBDR2
RMA2MAQ   MESSAGE ADVISOR  01/075-6:57:42 RIHBDR3
RMA3MAQ   MESSAGE ADVISOR  01/074-12:47:10 RIHBDR3
RQAIQMR   Q:MANAGER IMS    00/258-16:28:11 RIHBDR2
RQAOQMR   Q:MANAGER IMS    00/258-16:29:02 RIHBDR2
RQA2QMR   Q:MANAGER IMS    00/258-16:30:11 RIHBDR2
IMSID                      LAST CHANGED    BY
@@@@                       N/A             BMC
PR5A                       01/204-11:51:03 RIHBDR2
PR6B                       01/204-11:51:03 RIHBDR2
PRSL                      01/204-11:51:03 RIHBDR2
PRSN                      01/204-11:51:03 RIHBDR2
PRGC                      01/204-11:51:03 RIHBDR2
PRGF                      01/204-11:51:03 RIHBDR2
PRGD                      01/204-11:51:03 RIHBDR2
PRGM                      01/204-11:51:03 RIHBDR2
PRGO                      01/204-11:51:03 RIHBDR2
PR7B                      01/204-11:51:03 RIHBDR2
PR7H                      01/204-11:51:03 RIHBDR2
BMC43076I CUSTOMIZE FOR RIHBDR3 (TASK 5) IMS(N/A) ENDED, RC=00
```
List options by IMSID

The sample report below shows the results of a CUSTOMIZE request for the detailed options of a specific IMSID.

For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 204: List IMSID Options report

```plaintext
CUSTOMIZE
   LIST_OPTIONS IMSID=PR9F
END
BMC43072I INPUT COMMANDS ACCEPTED, EXECUTION BEGINS
BMC43077I CUSTOMIZE IN PROGRESS FOR RIHBDR7 (TASK 2)
    >>>CUSTOMIZE
    >>> LIST_OPTIONS IMSID=PR9F
    >>>END
I Message Advisor for IMS V1.4.00.01 - Server ID @@@@@@@@ 06/10/2008.162
OCUSTOMIZE LIST_OPTIONS Report PAGE 1

IMSID Options

IMSID Options: General

IMSID .........................PR9F
Message Queue Action Rate .......0
Logcode ........................EC
Default Associated MAQ Server......RMAAMAO
Automatic Requeue .................NO
Automatic Requeue Command  ...S RIPRDR9, MBR= &AUTOREQ
Automatic Requeue COLDSYS ......PROMPT
Automatic Requeue COLDSYS Cmd ...S RIPRDR9, MBR= COLDSYS9
Automatic Requeue COLDCOMM ......PROMPT
Automatic Requeue COLDCOMM Cmd ..S RIPRDR, MBR= COLDCOMM

IMSID Options: Data Set Names

Checkpoint ......................TME.RIP.MAQ.PR9FZ.CKPT
Extract File .....................TME.RIP.MAQ.%IMSID.EXTRACT
Unload File .....................TME.RIP.MAQ.%IMSID.UNLOAD
Scrap File .......................TME.RIP.MAQ.%IMSID.SCRAP
RECON #1 ........................
RECON #2 ........................
RECON #3 ........................
RECON Dynalloc  ..................TME.RIP.PR9F.LOADMDA

SPILL #1 ........................TME.RIP.MAQ.%IMSID.SPILL1
SPILL #2 ........................TME.RIP.MAQ.%IMSID.SPILL2
SPILL #3 ........................TME.RIP.MAQ.%IMSID.SPILL3
SPILL #4 ........................TME.RIP.MAQ.%IMSID.SPILL4

Virtual Create option
Always create virtual LTERMs?.....YES

Automatic Restart SNAPQ option
Issue SNAPQ after /NRE?.......NO

BMC43076I CUSTOMIZE FOR RIHBDR7 (TASK 2) IMS(N/A) ENDED, RC=00
```

Appendix A  Message Advisor reports 353
List server options by server ID

The sample report displayed below shows the results of a CUSTOMIZE request for the detailed options report of a specific Message Advisor Server.

For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 205: List Options Server Name Report

<table>
<thead>
<tr>
<th>BMC43077I</th>
<th>CUSTOMIZE IN PROGRESS FOR RIHBDR3 (TASK 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;&gt;&gt;&gt;CUSTOMIZE</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt; LIST_OPTIONS SERVER_NAME=RMAAMAQ</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;&gt;END</td>
<td></td>
</tr>
<tr>
<td>Message Advisor for IMS V1.0.02 - Server ID RMAAMAQ 09/24/2001</td>
<td></td>
</tr>
<tr>
<td>CUSTOMIZE LIST_OPTIONS Report</td>
<td></td>
</tr>
</tbody>
</table>

Server Options

Server Options: General

Server Name .........................RMAAMAQ
Title .................................MESSAGE ADVISOR
Subsystem Name(SSCT) ...............QMR

Miscellaneous:

Trace Table Entries .................2,000
Sort Memory Reserved ...............4,194,304
Server Address Space ...............NON-SWAPPABLE

Server Options: Resources

GRS Enqueue Name ...................QMANAGER
VTAM APPLID for Server .............RMAAMAQ
VTAM LOGMODE Name for Batch Sessions ...QMANAGER
VTAM LU Name Prefix for Batch Sessions..RMAA

Default WTO Descriptor Codes .......6 ,7
Default WTO Routing Codes ..........2 ,10,11
REQUEUE Prompt .....................YES
Uppercase ............................NO

BMC43076I  CUSTOMIZE FOR RIHBDR3 (TASK 10) IMS(N/A) ENDED, RC=00

DEQUEUE reports

This section describes and shows examples of reports created by the following types of DEQUEUE requests:

- DEQUEUE a message
- DEQUEUE a destination
Dequeue a message

The sample summary report displayed below shows the request and a report resulting from a DEQUEUE request for a specific message.

For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 206: Dequeue Statistics and Destination Report

Dequeue a destination

The sample summary report displayed below shows the results of a request to DEQUEUE all messages older than 5 days.

The selected messages are first written to the specified unload work data set. All or selected messages can later be reloaded by using the REQUEUE command with TYPE=FILE. For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 207: Dequeue Statistics and Destination Report
DISPLAY reports

This section describes and shows examples of reports created by several types of DISPLAY requests.

This section contains the following sample reports:

- DISPLAY message queue statistics
- DISPLAY destination queues
- DISPLAY destination
### DISPLAY a message record

#### Display message queue statistics

The sample report displayed below shows the results of a request to DISPLAY message queue statistics.

The top portion of the report displays a summary of dynamic queue statistics. The 10 longest destination queues are reported.

**Figure 208: Display Statistics Information Report**

```
BMC43077I DISPLAY IN PROGRESS FOR RIHBDR3 (TASK 10)
>>>DISPLAY IMSID=PR7B,TYPE=STATISTICS
>>>END
Message Advisor V1.0.02 - Server ID RMAAMAQ 09/24/2001.26
DISPLAY Statistics Information for IMSID PR7B
Queue utilization: Short 0% Long 39%
Top Ten Destination Message Queues
SAGENY1 . . . . . LUNAME=RHW640AA . : 1,242
RIPJ0021. . . . . . . . . : 1,170
RIPJ0020. . . . . . . . . : 1,170
MASTER . . . . . . . . . : 721
SECMAST . . . . . . . . . : 682
SDPSXNY . . . . . LUNAME=RHW0453D . : 241
RIPJ0022. . . . . . . . . : 234
RIPJ0013. . . . . . . . . : 234
RIPJ0029. . . . . . . . . : 234
RIPJ0028. . . . . . . . . : 234
Total messages for CNTs . . . . : 9,838
Total messages for SMBs . . . . : 165
Total messages for TPnames . . . : 1,516
Total messages for TPIPES . . . : 14
Number of LTERMs (CNTs) . . . . : 187
Number of transactions (SMBs) . : 187
Number of TPnames(QABs/TIBs) . : 4
Number of TPIPES(YQABs/YTIBs) : 1
Number of main memory queue buffers : 1,999
Main memory queue buffer size . . : 6,720
Number of errors . . . . . . . . : 0
Number of messages cancelled . . : 51
Current SHMSG lrecl size . . . . : 336
Current LGMSG lrecl size . . . . : 3,360
Maximum length of message prefix . : 988
Size of basic prefix . . . . . . : 64
Size of full extension . . . . . : 64
Size of short prefix extension . . : 4
Size of MSC segment item . . . . : 92
Size of RACF segment item . . . : 22
Size of LU6 segment item . . . . : 22
# records larger than SHMSG lrecl : 54,621
# records smaller than SHMSG lrecl : 0
Size of largest segment inserted : 2,232
Median size of all segments inserted: 840
QBLK - Maximum # records defined : 151,200
Maximum # records available : 151,150
# records in use . . . . . . . : 388
Data set usage (%) . . . . . : 1
SHMSG - Maximum # records defined : 168,000
Maximum # records available : 167,950
# records in use . . . . . . . : 63
```
Data set usage (%) . . . . : 1
Total EXCP count . . . . . : 88
LGMSG - Maximum # records defined : 29,400
Maximum # records available : 29,350
# records in use . . . . . : 11,535
Data set usage (%) . . . . : 40
Total EXCP count . . . . . : 50,757
Queue data set upper threshold(%) . : 75
Queue data set lower threshold(%) . : 60
# records reserved for shutdown . . : 50

IMS RESTART DATE AND TIME . . . . . : 2001/266-20:02:53.6
BMC43076I DISPLAY FOR RIHBDR3 (TASK 10) IMS(PR7B) ENDED, RC=00

**Note**

There can be a discrepancy in the number of records in use and the number of records reported. This discrepancy results from IMS housekeeping and the number of bit map records because of the size of the data set.

Display destination queues

The sample report displayed below is the result of a DISPLAY request for information about destination queues.

The following shows the first page of a multipage report. For a description of the fields on this report, see “Report field descriptions” on page 381.

**Figure 209: Display Destination Summary Report**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DESTINATION</th>
<th>#MSGS</th>
<th>#RECS</th>
<th>#SEGS</th>
<th>%MSGS</th>
<th>%LGMSG</th>
<th>PSB/LU/TRAN/REG</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPNAME</td>
<td>SAGENY1</td>
<td>1,242</td>
<td>1,242</td>
<td>1,242</td>
<td>.00</td>
<td>4.22</td>
<td>RHW640AA</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0021</td>
<td>1,170</td>
<td>1,170</td>
<td>2,340</td>
<td>.00</td>
<td>3.97</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0020</td>
<td>1,170</td>
<td>1,170</td>
<td>2,340</td>
<td>.00</td>
<td>3.97</td>
<td></td>
</tr>
<tr>
<td>SYSTEM</td>
<td>MASTER</td>
<td>721</td>
<td>721</td>
<td>1,324</td>
<td>.00</td>
<td>2.45</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>SECMAST</td>
<td>682</td>
<td>682</td>
<td>682</td>
<td>.00</td>
<td>2.31</td>
<td></td>
</tr>
<tr>
<td>TPNAME</td>
<td>SOPSXNY</td>
<td>241</td>
<td>241</td>
<td>241</td>
<td>.00</td>
<td>.81</td>
<td>RHW0453D</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0022</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0013</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0029</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0028</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0010</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0024</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0012</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0025</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0027</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0033</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0031</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0008</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0009</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0023</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0026</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0007</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0030</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0034</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPJ0011</td>
<td>234</td>
<td>234</td>
<td>468</td>
<td>.00</td>
<td>.79</td>
<td></td>
</tr>
</tbody>
</table>
Display a destination

The sample report displayed below is the result of a DISPLAY request for details about a specific destination.

For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 210: Display Destination Detail Report

BMC43235I MESSAGE ADVISOR HAS 3 DAYS REMAINING DURING THE PRODUCT TRIAL
BMC43077I DISPLAY IN PROGRESS FOR RIHBDR3 (TASK 4)
>>>DISPLAY IMSID=PR6M,TYPE=DESTINATION
>>>SELECT DESTINATION=E6*,DESTYPE=STATIC
>>>END
Message Advisor V1.0.02 - Server ID RMAAMAQ 07/11/2001.192 13.3
DISPLAY Destination Detail for IMSID PR6M
Messages Queued for Destination = E61MTRM1
*****************************************
M   R          R
S   E        M A L          S
G   C        S C U          Y
Q#    #   #   SIZE C F 6 ORIGIN   S  --- TIME QUEUED ---  FORMAT   USERI
4     1   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     2   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     3   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     4   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     5   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     6   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     7   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     8   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4     9   1    706 Y Y N PR6M01 2001/186-14:00:05.7           PR6M0
4    10   1    706 Y Y N USER2 2001/192-11:13:22.8           USER2
4    11   1    520 Y Y N USER2 2001/192-11:13:22.8           USER2
BMC43076I DISPLAY FOR RIHBDR3 (TASK 4) IMS(PR6M) ENDED, RC=00

Display a message record in hexadecimal format

The sample report displayed below is the result of a DISPLAY request for a specific message record displayed in hexadecimal format.

Figure 211: Display Message Prefix and Text Report

BMC43077I DISPLAY IN PROGRESS FOR RIHBDR3 (TASK 10)
>>>DISPLAY IMSID=PR7B,TYPE=RECORD,DRRN=0B00006C
>>>END
Message Advisor V1.0.02 - Server ID RMAAMAQ 09/24/2001.26
DISPLAY Message Prefix and Text for IMSID PR7B
Message Prefix-------------------------------
Display a message record in formatted mode

The sample report displayed below is the result of a DISPLAY request for a specific message record displayed in formatted mode.
**Note**
Actual fields might vary because of prefix differences between IMS versions.

**Figure 212: Display Formatted Message Prefix and Text Report**

BMC43077I DISPLAY IN PROGRESS FOR RIHBDR3 (TASK 10)
>>> DISPLAY IMSID=PR7B,TYPE=RECORD,DRRN=0B000006C,FORMAT=YES
>>> END
Message Advisor V1.0.02 - Server ID RMAAMAQ 09/24/2001.26

DISPLAY Formatted Message Prefix and Text for IMSID PR7B

**BASIC PREFIX**
- Message record length: 513
- Message record type (01 or 03): 03
- Message chain position: Only record
- Queue number: 4
- Message prefix length: 414
- Originating IMSID: PR7B
- Processing IMSID: PR7B

**SYSTEM SEGMENT**
- Origin name: USER7B1
- Destination name: MSC34
- MFS format name: DFSM02

**SECURITY SEGMENT**
- RACF user ID: USER7B1

**WORKLOAD MANAGER SEGMENT**
- Service classification token: 00000000
- Message arrival timestamp: 2001/204-10:30:16.1

**SYSTEM EXTENSION SEGMENT**
- System extended timestamp: 2001/204-10:30:17.6

**MSC EXTENSION SEGMENT**
- MSC extended clock time: 
- Origin system ID: 311
- Destination system ID: 371

**TRANSACTION MANAGEMENT ROUTER SEGMENT**
- Origin name: USER7B1
- Destination ID: MSC34
- Source IMS Release level: R8.1
- Highest IMS Level to process message: R8.1

**Message Text**

--- Data Segment 1 ---
000000 00630300 D4E2C3F3 F4404040 40E6C8C1 / ....MSC34    WHA /
000010 E3E240E3 C8C9E26F 40404040 40404040 / TS THIS?         /
000020 40404040 40404040 40404040 40404040 /                  /
000030 40404040 40404040 40404040 40404040 /                  /
000040 40404040 40404040 40404040 40404040 /                  /
000050 40404040 40404040 40404040 40404040 /                  /
000060 4040606C 605C606C F9F060D7 D3E4E3D6 /   -%-*-%90-PLUTO /
000070 F1F0F0                              / 100              /

BMC43076I DISPLAY FOR RIHBDR3 (TASK 10) IMS(PR7B) ENDED, RC=00
REQUEUE reports

This section describes and shows examples of reports created by the following types of REQUEUE requests:

- REQUEUE to an extract file
- REQUEUE from an input file
- REQUEUE after a cold start
- REQUEUE after an /ERE failure

Requeue to an extract file

The report samples shown in the "Requeue extract report" topic are for a REQUEUE command set.

The following values are used on REQUEUE reports when all messages to a destination are rejected because of SELECT, REJECT, or INTERVAL statements or for a REQUEUE MODE=EXTRACT:

| **CNT** | Indeterminate CNT type (based on the log records) |
| **SMB** | Indeterminate SMB type (based on the log records) |
| **RSMB** | Remote transaction (based on the log checkpoint) |
| **TPNAME** | APPC LU 6.2 (based on the log records) |
| **OTMA** | OTMA type (based on the log records) |

Requeue extract report

The sample report displayed below shows messages indicating that the REQUEUE request has been accepted and is in progress.

These messages are generated while executing the REQUEUE request.

Figure 213: Requeue Extract Report

BMC43077I REQUEUE IN PROGRESS FOR RIHBDR3 (TASK 10)
>>>REQUEUE IMSID=PR7B.MODE=EXTRACT_REQUEUE.TYPE=REPROCESS.
>>> REPORT=(SUMMARY,DESTINATION,ORIGIN,TRANSACTION,ERROR,
>>> MESSAGE,ERRORDATA),REQ_PROMPT=YES,DISCARD=NO
>>> INPUT DSNAME=TIME.RIP.PR7B.DSP.D01192.T0621477.V70
>>> INPUT DSNAME=TIME.RIP.PR7B.DSP.D01192.T1443032.V64
>>> INPUT DSNAME=TIME.RIP.PR7B.DSP.D01204.T1000315.V00
>>> INPUT DSNAME=TIME.RIP.PR7B.D01205.T0624060
>>> INPUT DSNAME=TIME.RIP.PR7B.D01205.T0758100
>>> INPUT DSNAME=TIME.RIP.PR7B.D01205.T0801504
>>> EXTRACT DSNAME=TIME.RIP.MAQ.%IMSID.EXT.RSR0001.DISP=NEW,
>>> INTERVAL CYLS_PRIM=20,CYLS_SEC=10,STORCLASS=DEVS90
>>> START=2001192/0101111,STOP=2001205/2345452
>>>END

BMC43276I SEARCHING FOR COPY1 RECON DATA SET, IMSID=PR7B
Requeue extract statistics summary report

The sample report displayed in below shows a summary of statistics for a REQUEUE request that specified an extract file.

Figure 214: Requeue Extract Statistics Summary Report

**Total Input Dataset(s) Processed**: 6
**Total Log Records Read**: 28,516
**Total 4001 Records Found**: 10
**Total 01 Records Read**: 46
**Total 03 Records Read**: 8,217
**Total OIC/FIC Records Selected**: 8,242
**Total MIC/LIC Records Selected**: 66
**Total Active Destinations**: 16,252
**Total Segments Inserted**: 8,244
**Total Messages Enqueued**: 8,242
**Total Records Written to EXTRACT File**: 8,242
**Total Records Written to SPILL1 File**: 0
**Total Records Written to SPILL2 File**: 8,244
**Total Records Written to SPILL3 File**: 0
**Total Records Written to SPILL4 File**: 0
**Total Records Written to SCRAP File**: 0

---

**Requeue Summary Filter Report**

<table>
<thead>
<tr>
<th>Type</th>
<th>Label</th>
<th>Checked</th>
<th>Rechecked</th>
<th>Nomatch</th>
<th>Checked</th>
<th>Nomatch</th>
</tr>
</thead>
<tbody>
<tr>
<td>All filters</td>
<td></td>
<td>66</td>
<td>59</td>
<td>2</td>
<td>16499</td>
<td>15</td>
</tr>
<tr>
<td>INTERVAL INTO0001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16484</td>
<td>0</td>
</tr>
</tbody>
</table>

**Requeue Error/Scrap Summary**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Key</th>
<th>Messages</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>NOSOURCE</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>02</td>
<td>NODEST</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>03</td>
<td>INSERT</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>04</td>
<td>ENOFAIL</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>05</td>
<td>LENGTH</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>06</td>
<td>PREFIX</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>07</td>
<td>QSTOP</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>08</td>
<td>USER</td>
<td>E</td>
<td>S</td>
<td>0</td>
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<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
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<td>CONVOUT</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>0B</td>
<td>CHANGE</td>
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<td>S</td>
<td>0</td>
</tr>
<tr>
<td>0C</td>
<td>CANCEL</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>0D</td>
<td>NORECOVER</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>0E</td>
<td>REJECT</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>0F</td>
<td>INTERVAL</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>REJDEST</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>CONVCCB</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>RESTRICT</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>NOAPPC</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>ZEROTIME</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>RECORD</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>BADQUEUE</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>NODATA</td>
<td>E</td>
<td>S</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Message Advisor for IMS V1.0.02 - SERVER ID RMAAMAQ 09/24/2001.267 14.02.43**

---

**Message Advisor for IMS V1.0.02 - SERVER ID RMAAMAQ 09/24/2001.267 14.02.43**

---

Appendix A Message Advisor reports 363
If you specify SCRAP=NO on the REQUEUE command, Message Advisor will not write records to the scrap file. The REQUEUE Statistics Summary lists the number of messages that were scrapped or discarded and the reason.

For a description of the fields on this report, see “Report field descriptions” on page 381.

Requeue extract destination report

The sample detail report displayed below shows the destinations, message types, and number of messages extracted as a result of executing a REQUEUE request that specified an extract file.

Figure 215 on page 364 shows the first page of a multipage report. For a description of the fields on this report, see “Report field descriptions” on page 381.

Requeue from an input file

The following report examples are for a REQUEUE TYPE=FILE request.
The request specifies that the input is from an input data set named RIHCXK.C1086389.DEQ. This data set contains the messages selected and written to the extract data set in the REQUEUE MODE=EXTRACT example shown in “Requeue extract statistics summary report” on page 363.

The sample report displayed in Figure 216 on page 365 shows messages indicating that the REQUEUE request has been accepted and is in progress. These messages are generated while the REQUEUE request is executing. For a description of the fields on this report, see “Report field descriptions” on page 381.

**Figure 216: Requeue Statistics and Destination Report—Input File**

BMC43071I  REQUEUE IN PROGRESS FOR RIHCXK4 (TASK 6)
>>>REQUEUE  IMSID=CDK8,TYPE=FILE,REPORT=(ENVIRONMENT),COMPRESS=NO,
>>>  VALIDATE_SRC=NO,TIMESTAMP=CURRENT
>>>  INPUT  DSNNAME=RIHCXK.C1086389.DEQ
>>>END
BMC43276I  SEARCHING FOR COPY1 RECON DATA SET, IMSID=CDK8
BMC43227I  USING SCRAP DDN=SYS00051 DSN=RIHCXK.CDK8A.SCRAP IMSID=CDK8
BMC43229I  MESSAGE ADVISOR CHECKPOINT TRACKING IS ACTIVE, IMSID=CDK8
BMC43227I  USING EXT/UNLD DDN=SYS00052 DSN=RIHCXK.C1086389.DEQ IMSID=CDK8
BMC43269I  MESSAGE ADVISOR INSERTING MESSAGES TO IMS QUEUES, IMSID=CDK8

Requeue Environment Report       -     IMSID CDK8
Requeue Type                        File
Type Input for Requeue Request      EXT/UNLD
Requeue Input File DSN (first file) RIHCXK.C1086389.DEQ
Input File’s Source IMSID           CDK7
Timestamp of Requeue Input File     2004224/1414462
Checkpoint on Requeue Command       Not Specified
Target IMS Level                    IMS/VS 8.1
Recon Accessed for this Requeue?    Yes
Target IMS Recon Level              IMS/VS 8.1
Recon1 DSN Provided :               RCNDC.RIHCXK81.RECON1
Target IMS Recon Copy1 DSN used :   RCNDC.RIHCXK81.RECON1
Target IMS XRF Feature Status       CAPABLE / SUPPORTED
Target IMS using Shared Queues?     No
MSC Feature Defined?                Yes
Target IMS’s MSC Local SYSID             1
Target IMS Dynamic Dest Creation?    YES-ETO
Virtual Create Option               Do Create Virtual Lterms
Server’s MVSID                      SDBB
Type Buffering used                 Optimum
MAQ User Exit Name                  Not Used
Requeue Rate used                           59
BMC430761  REQUEUE FOR RIHCXK4 (TASK 6) IMS(CDK8) ENDED, RC=04

Requeue input file statistics summary report

The sample report displayed below shows a summary of statistics for a REQUEUE request that specified an input file.

For a description of the fields on this report, see “Report field descriptions” on page 381.

**Figure 217: Requeue Input File Statistics Summary Report**

Message Advisor for IMS V1.0.02 - SERVER ID RMABMAQ  09/05/2001.248  7
Requeue Summary Filter Report - IMSID PR7B
--- Statement ---  ------ Destinations ------  ---- Messages ----
If you specify \textit{SCRAP=NO} on the \texttt{REQUEUE} command, Message Advisor will not write records to the scrap file. The \texttt{REQUEUE} Statistics Summary presents the number of messages scrapped or discarded.

### Requeue input file destination report

The sample report displayed below shows the destinations, message types, and number of messages requeued while executing the \texttt{REQUEUE} request that specified an input file.

The following shows the first page of a multipage report. For a description of the fields on this report, see “Report field descriptions” on page 381.

#### Figure 218: Requeue Input File Destination Report

<table>
<thead>
<tr>
<th>Destination Type</th>
<th>Total Selected+Scrapped+Skipped</th>
<th>Changed Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPL0002 SMB</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MASTER SYSTEM</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>MASTERC SYSTEM</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>MSC31 MSNAME</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>MSC32 MSNAME</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>MSC33 MSNAME</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>MSC34 MSNAME</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>PR6F1301 RSMB</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>PR6F1302 RSMB</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>PR6F1303 RSMB</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
Requeue after a cold start

The sample report displayed below shows messages indicating that the REQUEUE request has been accepted and is in progress. These messages are generated by executing the REQUEUE request after a cold start. Message Advisor has selected the checkpoint automatically from the Message Advisor Checkpoint Tracking data set.

Figure 219: Requeue Cold Start Report

| PR6F1304 | SMB  | 6   | 6   |
| PR783101 | SMB  | 2   | 2   |
| PR783102 | SMB  | 2   | 2   |
| PR783103 | SMB  | 2   | 2   |
| PR783104 | SMB  | 2   | 2   |

Requeue Environment Report

Message Advisor for IMS V1.2.02 - SERVER ID CDKP 11/10/2004.315 12.22
Requeue Environment Report - IMSID CDK8
Requeue Type - Cold
Type Input for Requeue Request - SLOS
Requeue Input File DSN (first file) - RIHCXK.CKB.XRF.DFSLP00.D04315.T120914
Checkpoint on Requeue Command - Not Specified
Type Checkpoint used for Requeue - DUMPQ
Checkpoint Used for Requeue - 2004315/1211557-06:00
Target IMS Level - IMS/VS 8.1
Recon Access for this Requeue? - Yes
Target IMS Recon Level - IMS/VS 8.1
RECON_DSN Provided: - RCNDRC.RIHCXK81.RECON1
Target IMS Recon Copy1 DSN used: - RCNDRC.RIHCXK81.RECON1
Target IMS XRF Feature Status - CAPABLE / SUPPORTED
Target IMS using Shared Queues? - No
MSC Feature Defined? - Yes
Target IMS's MSC Local SYSID - 1
Target IMS Dynamic Dest Creation? - YES-ETO
Virtual Create Option - Do Create Virtual Lterms
Server's MVSID - SDBB
Type Buffering used - Optimum
MAQ User Exit Name - Not Used
Requeue Rate used - 555
Requeue cold start statistics summary report

The sample report displayed below shows a summary of statistics for a REQUEUE request after a cold start.

The following shows the first page of a multipage report. For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 220: Requeue Cold Start Statistics Summary Report

| Message Advisor for IMS V1.0.02 - SERVER ID RMAIMAQ 07/10/2001.191 14.24.31 |
| Requeue - Cold - Statistics - IMSID PR6M |
| Total Input Dataset(s) Processed: 1 |
| Total Log Records Read: 1,978 |
| Total 4001 Records Found: 2 |
| Total 4002 Log Records Read: 261 |
| Total 4002 Data Records: 255 |
| Total 4002 QBLK Records: 6 |
| Total 4002 QBLK Records Selected: 6 |
| Total 4002 Input Records: 75 |
| Total 4002 Output Records: 180 |
| Total 4003 Records Read: 5 |
| Total 4003 CNT Entries Processed: 141 |
| Total 4004 Records Read: 7 |
| Total 4004 SMB Entries Processed: 197 |
| Total 4004 SMB Entries Selected: 197 |
| Total 4000 Records Read: 0 |
| Total 4000 Records Read: 2 |
| Total 4000 Entries Selected: 1 |
| Total Active Conversations: 0 |
| Total Conversations Extracted: 0 |
| Total Records Written to EXTRACT File: 0 |
| Total Records Written to SCRAP File: 72 |

--- Statement --- ------- Destinations ------- ---- Messages ----

<table>
<thead>
<tr>
<th>Type</th>
<th>Label</th>
<th>Checked</th>
<th>Rechecked</th>
<th>Matched</th>
<th>Checked</th>
<th>Matched</th>
</tr>
</thead>
<tbody>
<tr>
<td>All filters</td>
<td></td>
<td>203</td>
<td>0</td>
<td>203</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>

--- Code Keyword Description Key Messages Records ---

<table>
<thead>
<tr>
<th>Code</th>
<th>Keyword</th>
<th>Description</th>
<th>Key</th>
<th>Messages</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>NOSOURCE</td>
<td>Origin not defined or created</td>
<td>E S</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>NODEST</td>
<td>Destination not defined or created</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>INSERT</td>
<td>Segment insert failed</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>ENQFAIL</td>
<td>Enqueue failed</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>LENGTH</td>
<td>Message segment too long</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>PREFIX</td>
<td>Message prefix is invalid</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>QSTOP</td>
<td>SMB is QStopped</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>USER</td>
<td>User exit excluded message</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>CONVIN</td>
<td>Conversational input</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0A</td>
<td>CONVOUT</td>
<td>Conversational output</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0B</td>
<td>CHANGE</td>
<td>Change requested not possible</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0C</td>
<td>CANCEL</td>
<td>Message marked as cancelled</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0D</td>
<td>NORECOVER</td>
<td>Nonrecoverable message</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0E</td>
<td>REJECT</td>
<td>Msg rejected by SELECT/REJECT</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0F</td>
<td>INTERVAL</td>
<td>Not within INTERVAL specified</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>REJECT</td>
<td>Destination rejected SELECT/REJECT</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>NOAPPCC</td>
<td>APPC not active on IMS system</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>ZEROTIME</td>
<td>Timestamp in message is missing</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>RECORD</td>
<td>Invalid record chain</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>BADQUEUE</td>
<td>Logical error in destination queue</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>NODATA</td>
<td>Message has no data segments</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>NOSYSID</td>
<td>SYSID Undefined</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>NOOTMA</td>
<td>OTMA not active on IMS system</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1A</td>
<td>BADSYS</td>
<td>SYSID Mismatch</td>
<td>E S</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Total errors: E 36
Total for SCRAP file: S 36
Total scrapped/skipped: E 36

KEY=E Error codes which cause return code 4
KEY=S Scrap codes which are written to the SCRAP file
Note

If you specify \texttt{SCRAP=NO} on the \texttt{REQUEUE} command, Message Advisor will not write records to the scrap file. The \texttt{REQUEUE} Statistics Summary presents the reason for, and the number of, messages scrapped or discarded.

\section*{Requeue cold start conversational report}

The sample report displayed below is the result of a \texttt{REQUEUE} request for conversational messages.

The following shows the first page of a multipage report. For a description of the fields on this report, see “Report field descriptions” on page 381.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{requeue_conversational_report.png}
\caption{Requeue Cold Start Conversational Report}
\end{figure}

\section*{Requeue cold start destination report}

The sample report displayed below shows the destinations, message types, and number of messages requeued while executing the \texttt{REQUEUE} request after a cold start.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{requeue_destination_report.png}
\caption{Requeue Cold Start Destination Report}
\end{figure}

\section*{Appendix A  Message Advisor reports}

369
Requeueing after an /ERE failure

The sample report displayed below shows messages indicating that the REQUEUE request has been accepted and is in progress. These messages are generated by executing the REQUEUE request.

Figure 223: Requeue Report—/ERE Failure

```
BMC43077I REQUEUE IN PROGRESS FOR RIHBDR3 (TASK 3)
>>>REQUEUE IMSID=PR8F,MODE=(VALIDATE),TYPE=EREFAIL
>>> REPORT=(ALL,ERRORDATA),REQ_PROMPT=YES,DISCARD=NO
>>> REJECT DESTINATION=MASTER*
>>>END
BMC43276I SEARCHING FOR COPY1 RECON DATA SET, IMSID=PR8F
BMC43227I USING SCRAP DSN=SYS00026 DSN=TEME.RIP.MAQ.PR8F.SCRAP IMSID=PR8F
BMC43227I USING SPILL2 DSN=SYS00027 DSN=TEME.RIP.MAQ.PR8F.SPILL2 IMSID=PR8F
BMC43227I USING SPILL3 DSN=SYS00028 DSN=TEME.RIP.MAQ.PR8F.SPILL3 IMSID=PR8F
BMC43227I USING SPILL4 DSN=SYS00030 DSN=TEME.RIP.MAQ.PR8F.SPILL4 IMSID=PR8F
BMC43316I SELECTED ABEND TIMESTAMP IS 2005056/1220225, IMSID=PR8F
BMC43302I REQUEUE PROMPTING OPERATOR FOR CHECKPOINT VALIDATION, IMSID=PR8F
BMC43246I SEARCHING FOR CHKPT=2005056/1213329-06:00 IMSID=PR8F
BMC43227I USING RECON DSN=SYS00031 DSN=RCNDC.PR8F.RECON1 IMSID=PR8F
BMC43227I MESSAGE ADVISOR CHECKPOINT TRACKING IS ACTIVE. IMSID=PR8F
BMC43268I MESSAGE ADVISOR PROCESSING LOG RECORDS, IMSID=PR8F
BMC43227I USING SLDS DSN=SYS00032 DSN=TEME.RIP.PR8F.D05055.T1329586 IMSID=PR8F
BMC43210I FOUND CHKPT 2005056/1213329-06:00 **SNAPQ ** (LOG IMSID=PR8F R8.1) IMSID=PR8F
BMC43227I USING SLDS DSN=SYS00033 DSN=TEME.RIP.PR8F.D05056.T1213330 IMSID=PR8F
BMC43227I USING SLDS DSN=SYS00034 DSN=TEME.RIP.PR8F.D05056.T1213490 IMSID=PR8F
BMC43227I USING SLDS DSN=SYS00035 DSN=TEME.RIP.PR8F.D05056.T1213573 IMSID=PR8F
BMC43227I USING SLDS DSN=SYS00036 DSN=TEME.RIP.PR8F.D05056.T1214144 IMSID=PR8F
BMC43271I MESSAGE ADVISOR VALIDATING DESTINATIONS, IMSID=PR8F
```

Requeue EREFAIL statistics summary report

The sample report displayed below shows a summary of statistics for a REQUEUE request after an /ERE failure.
The report identifies the Message Advisor Server ID, the IMSID, the date, the time, and the summary data. The following shows the first page of a multipage report. For a description of the fields on this report, see “Report field descriptions” on page 381.

**Note**

If you specify SCRAP=NO on the REQUEUE command, Message Advisor will not write records to the scrap file. The REQUEUE Statistics Summary shows why, and lists how many messages were scrapped or discarded.

**Figure 224: Requeue EREFAIL Statistics Summary Report**

<table>
<thead>
<tr>
<th>Message Advisor for IMS V1.2.02</th>
<th>SERVER ID RMAAMAQ</th>
<th>02/25/2005.056</th>
<th>12.23.03</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requeue - EREFail - Statistics</strong></td>
<td><strong>IMSID PRBF</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Input Dataset(s) Processed</td>
<td>5</td>
<td>Total Log Records Read</td>
<td>32,243</td>
</tr>
<tr>
<td>Total 4001 Records Found</td>
<td>4</td>
<td>Total 4002 Log Records Read</td>
<td>8,095</td>
</tr>
<tr>
<td>Total 4002 Data Records</td>
<td>8,039</td>
<td>Total 4002 QBLK Records</td>
<td>56</td>
</tr>
<tr>
<td>Total 4002 QBLK Records Selected</td>
<td>56</td>
<td>Total 4002 Input Records</td>
<td>4,403</td>
</tr>
<tr>
<td>Total 4002 Output Records</td>
<td>3,659</td>
<td>Total 4004 Records Read</td>
<td>7</td>
</tr>
<tr>
<td>Total 4004 SMB Entries Processed</td>
<td>196</td>
<td>Total 4004 SMB Entries Selected</td>
<td>16</td>
</tr>
<tr>
<td>Total 4022 Records Read</td>
<td>1</td>
<td>Total 4022 Entries Selected</td>
<td>0</td>
</tr>
<tr>
<td>Total 4022 Entries Selected</td>
<td>0</td>
<td>Total Saved Records Read</td>
<td>2</td>
</tr>
<tr>
<td>Total 4024 Records Read</td>
<td>0</td>
<td>Total Q5 Records Read</td>
<td>0</td>
</tr>
<tr>
<td>Total 4024 Entries Selected</td>
<td>0</td>
<td>Total Cancels Issued</td>
<td>0</td>
</tr>
<tr>
<td>Total 4024 Cancel Records Read</td>
<td>0</td>
<td>Total DUMPQ/SNAPQ Records Selected</td>
<td>8,039</td>
</tr>
<tr>
<td>Total 4025 Records Read</td>
<td>0</td>
<td>Total 01 Records Read</td>
<td>0</td>
</tr>
<tr>
<td>Total 4025 SMB Entries Selected</td>
<td>0</td>
<td>Total 03 Records Read</td>
<td>2,787</td>
</tr>
<tr>
<td>Total 4025 GU Records Read</td>
<td>267</td>
<td>Total 31 GU Records Read</td>
<td>26</td>
</tr>
<tr>
<td>Total 4025 QBLK Records Selected</td>
<td>12</td>
<td>Total 33 Free Records Read</td>
<td>266</td>
</tr>
<tr>
<td>Total 4025 Input Records</td>
<td>8,095</td>
<td>Total 34 Cancel Records Read</td>
<td>0</td>
</tr>
<tr>
<td>Total 4025 01 Records</td>
<td>4,380</td>
<td>Total 35 Dequeue Records Read</td>
<td>266</td>
</tr>
<tr>
<td>Total 4025 03 Records</td>
<td>6,445</td>
<td>Total E35 Input Records</td>
<td>14,169</td>
</tr>
<tr>
<td>Total 4025 31 Records</td>
<td>26</td>
<td>Total E35 01 Records</td>
<td>4,380</td>
</tr>
<tr>
<td>Total 4025 33 Records</td>
<td>26</td>
<td>Total E35 03 Records</td>
<td>6,445</td>
</tr>
<tr>
<td>Total 4025 34 Records</td>
<td>0</td>
<td>Total E35 31 Records</td>
<td>26</td>
</tr>
<tr>
<td>Total E35 33 Records</td>
<td>0</td>
<td>Total E35 34 Records</td>
<td>0</td>
</tr>
<tr>
<td>Total E35 35 Records</td>
<td>2,786</td>
<td>Total E35 36 Records</td>
<td>266</td>
</tr>
<tr>
<td>Total E35 36 Records</td>
<td>266</td>
<td>Total E35 Messages Kept</td>
<td>10,559</td>
</tr>
<tr>
<td>Total E35 37 Records</td>
<td>266</td>
<td>Total E35 Messages Deleted</td>
<td>266</td>
</tr>
<tr>
<td>Total E35 OIC/FIC Records Selected</td>
<td>10,547</td>
<td>Total MIC/LIC Records Selected</td>
<td>12</td>
</tr>
<tr>
<td>Total E35 MIC/LIC Records Selected</td>
<td>12</td>
<td>Total Log Records Compressed</td>
<td>3,347</td>
</tr>
<tr>
<td>Total Checkpoint Data</td>
<td>7,962,984</td>
<td>Total Eligible Checkpoint Data</td>
<td>2,765,328</td>
</tr>
<tr>
<td>Total Compressed Data</td>
<td>2,645,237</td>
<td>Total Active Destinations</td>
<td>104</td>
</tr>
<tr>
<td>Total Segments Inserted</td>
<td>0</td>
<td>Total Messages Enqueued</td>
<td>0</td>
</tr>
<tr>
<td>Total Records Written to EXTRACT File</td>
<td>0</td>
<td>Total Records Written to SPILL1 File</td>
<td>0</td>
</tr>
<tr>
<td>Total Records Written to SPILL1 File</td>
<td>0</td>
<td>Total Records Written to SPILL2 File</td>
<td>14,169</td>
</tr>
<tr>
<td>Total Records Written to SPILL2 File</td>
<td>0</td>
<td>Total Records Written to SPILL3 File</td>
<td>0</td>
</tr>
<tr>
<td>Total Records Written to SPILL3 File</td>
<td>0</td>
<td>Total Records Written to SPILL4 File</td>
<td>0</td>
</tr>
<tr>
<td>Total Records Written to SPILL4 File</td>
<td>0</td>
<td>Total Records Written to SCRAP File</td>
<td>0</td>
</tr>
</tbody>
</table>
Requeue EREFAIL destination report

This sample report displayed below shows the destinations, message types, and number of messages requeued while executing the REQUEUE request.

The following shows the first page of a multipage report. For a description of the fields on this report, see "Report field descriptions" on page 381.

Figure 225: Requeue EREFAIL Destination Report

<table>
<thead>
<tr>
<th>Destination Type</th>
<th>Total</th>
<th>Selected+Scrapped+Skipped</th>
<th>Changed Errors Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPL0003 SMB</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>ATOU0001 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0002 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0003 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0004 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0005 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0006 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0007 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0008 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0009 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0010 LTERM</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATOU0011 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0012 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0013 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0014 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0015 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0016 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0017 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0018 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0019 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0020 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0021 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0022 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>ATOU0023 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>DELT0001 CNT-E</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>DELT0002 CNT-E</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>DELT0003 CNT-E</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>DELT0004 CNT-E</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>DELT0005 CNT-E</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>DELT0006 CNT-E</td>
<td>22</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>DER10001 CNT-E</td>
<td>23</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>DER10002 CNT-E</td>
<td>23</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>DER10003 CNT-E</td>
<td>23</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>DER30001 CNT-E</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>DER30002 CNT-E</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>DER30003 CNT-E</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>DVSD0001 CNT-E</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>DVSD0002 CNT-E</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>DVSD0003 CNT-E</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>LARG0001 CNT-E</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LARG0002 CNT-E</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LARG0003 CNT-E</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LARG0004 CNT-E</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LARGTRAN SMB</td>
<td>4000</td>
<td>4000</td>
<td></td>
</tr>
</tbody>
</table>

Figure 226: Requeue EREFAIL Destination Report (continued)

<table>
<thead>
<tr>
<th>Destination Type</th>
<th>Total</th>
<th>Selected+Scrapped+Skipped</th>
<th>Changed Errors Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLDR0001 CNT-E</td>
<td>63</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>OLDR0002 CNT-E</td>
<td>63</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>OLDR0003 CNT-E</td>
<td>63</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>PR8FMSTR LTERM</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PR8K9701 RSMB</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>PR8K9702 RSMB</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>PR8K9703 RSMB</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>PR8K9704 RSMB</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>RTOU0001 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>RTOU0002 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>RTOU0003 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>RTOU0004 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>RTOU0005 CNT-E</td>
<td>120</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

372 Message Advisor for IMS User Guide
UNLOAD reports

This section describes and shows sample reports created by the following types of UNLOAD requests:

- UNLOAD a destination
- UNLOAD a queue

Unload messages from a destination

The sample report displayed below is the result of an UNLOAD request to unload all messages from a specified destination.
For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 227: Unload Statistics Summary Report (specified destination)

BMC43077I UNLOAD IN PROGRESS FOR RIHBDR3 (TASK 2)
>>>UNLOAD IMSID=PR7B
>>> Select DESTINATION=PR6F1303,DESTTYPE=ALL
>>>END
BMC43227I USING UNLOAD DDN=SYS00010 DSN=TME.RIP.MAQ.PR7B.UNLOAD IMSID=PR7B

Unload  Statistics Summary for IMSID PR7B

Total Number of Destinations Selected             1
Total Number of Messages Unloaded....            21
Total Number of Destinations in Error             0

BMC43076I UNLOAD FOR RIHBDR3 (TASK 2) IMSID(PR7B) ENDED, RC=00

Unload messages from a queue

The sample report displayed below is the result of an UNLOAD request for all messages from a specified queue.

Figure 228 on page 374 shows that the CNT destinations that are not stopped will not be unloaded unless the FORCE=YES keyword is used. For a description of the fields on this report, see “Report field descriptions” on page 381.

Figure 228: Unload Statistics Summary Report (specified queue)

BMC43077I UNLOAD IN PROGRESS FOR RIHBDR3 (TASK 2)
>>>UNLOAD IMSID=PR7B
>>> OUTPUT DSNAME=TME.RIP.MAQ.%IMSID.UNL0302,DISP=NEW,CYLS_PRIM=2
>>> CYLS_SEC=2,MGMTCLAS=DEVS90
>>> Select QUEUE=1
>>>END
BMC43227I USING UNLOAD DDN=SYS00012 DSN=TME.RIP.MAQ.PR7B.UNL0302 IMSID=PR7B

Unload  Statistics Summary for IMSID PR7B

Total Number of Destinations Selected            70
Total Number of Messages Unloaded....           204
Total Number of Destinations in Error             0

BMC43076I UNLOAD FOR RIHBDR3 (TASK 2) IMSID(PR7B) ENDED, RC=00
Message Advisor QPF reports

This section describes and shows examples of reports created by the Message Advisor Queue Protection Facility (QPF) requests.

This section contains the following sample QPF reports:

- QPF List Options Report
- QPF Problem List Detail Report
- QPF Problem List Summary Report

QPF List Options report

The sample report displayed below is the result of a QPF_LIST TYPE=OPTIONS command set.

This report shows how the active QPF_OPTIONS command set is specified.

Figure 229: Message Advisor List Options Output Report

BMC43077I QPF_LIST IN PROGRESS FOR RIHBDR3 (TASK 2) IMS(IBM) ENDED, RC=00

| QPFT0001 | SMB | 42   | 1   | 08000036/08000DA0 | 00-UNLOAD OK |
| QPFT0002 | SMB | 6    | 1   | 080000C2/080008D0 | 00-UNLOAD OK |
| APPL0001 | SMB | 10   | 1   | 08000088/08000BB3 | 00-UNLOAD OK |
| PR6F1303 | RSMB| 21   | 1   | 0800002C/08000BB6 | 00-UNLOAD OK |
| PR7B3104 | SMB | 12   | 1   | 0800002C/08000BB6 | 00-UNLOAD OK |
| APPL0002 | SMB | 6    | 1   | 08000029/08000B3D | 00-UNLOAD OK |
| PR6F1304 | RSMB| 21   | 1   | 0800002D/08000BB7 | 00-UNLOAD OK |
| PR7B3101 | SMB | 12   | 1   | 0800002A/08000B3D | 00-UNLOAD OK |
| PR6F1302 | RSMB| 21   | 1   | 0800002B/08000BB6 | 00-UNLOAD OK |
| PR7B3102 | SMB | 12   | 1   | 0800001B/08000B3F | 00-UNLOAD OK |
| PR6F1301 | RSMB| 21   | 1   | 0800001A/08000B39 | 00-UNLOAD OK |
| USER7B1  | CNT-E| 8    | 1   | 080020CA/08004168 | 00-UNLOAD OK |

BMC43076I UNLOAD FOR RIHBDR3 (TASK 2) IMS(PR7B) ENDED, RC=00
Log code . . . . . . : EF  
Notify . . . . . . . : WTO  

QPF Options - Phases  

<table>
<thead>
<tr>
<th>Threshold% - phase starts at</th>
<th>0%</th>
<th>3%</th>
<th>98%</th>
<th>Monitor</th>
<th>Protect</th>
<th>Overflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset% - phase stops at</td>
<td>0%</td>
<td>2%</td>
<td>96%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reset time - delay in minutes</td>
<td>15</td>
<td>5</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ITASKS started for this phase . . . . . : 2 1 0  
WTOR . . . . . . . . . . . . . . . . . . : YES YES YES  
WTO descriptors . . . . . . . . . . . . : X'0200' X'0200' X'0200'  
WTO routing codes . . . . . . . . . . : X'4200' X'4200' X'4200'  

Notify% - %change for next message . . : 10% 5% 2%  
Notify interval - in minutes . . . . . : 5 1  
Notify recipients . . . . . . . . . . : WTO RIHBDR3 WTO MTO RIHBDR6 RIHBDR6 MTO  

Mode (protect) . . . : LOG,WARN,PROCESS,REPEAT  
Actions (overflow) . : IWAIT  
System wait . . . . : AT_SHUTDOWN  
Monitor auto command :  
Protect auto command :  
Overflow auto command :  

QPF Options - Enforce  

<table>
<thead>
<tr>
<th>Number</th>
<th>Type</th>
<th>Job/Name</th>
<th>PSB/Node Trans.</th>
<th>Notify</th>
<th>Actn. Tempq</th>
<th>#Recs</th>
<th>#Msgs</th>
<th>%Used</th>
<th>Thres</th>
<th>Segno</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ALL</td>
<td>ALL</td>
<td>A*</td>
<td></td>
<td>WARN</td>
<td>IWAIT</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ALL</td>
<td>ALL</td>
<td>C*</td>
<td></td>
<td>WARN</td>
<td>IWAIT</td>
<td>5</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. BMP</td>
<td>BMP</td>
<td></td>
<td></td>
<td>WARN</td>
<td>IWAIT</td>
<td>1650</td>
<td>1%</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. ALL</td>
<td>ALL</td>
<td>RIP*</td>
<td></td>
<td>WARN</td>
<td>IWAIT</td>
<td>10</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. MPP</td>
<td>MPP</td>
<td></td>
<td></td>
<td>WARN</td>
<td>IWAIT</td>
<td>11</td>
<td>0%</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. MPP</td>
<td>MPP</td>
<td></td>
<td></td>
<td>WARN</td>
<td>IWAIT</td>
<td>11</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. MPP</td>
<td>MPP</td>
<td></td>
<td></td>
<td>WARN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

QPF Options - Process  

<table>
<thead>
<tr>
<th>Number</th>
<th>Destype</th>
<th>Destination</th>
<th>Queue</th>
<th>Msgs</th>
<th>Records</th>
<th>%Used</th>
<th>Thres.</th>
<th>Last</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. OTMA</td>
<td>RIPITCON</td>
<td>ALL</td>
<td>30</td>
<td>0%</td>
<td>0</td>
<td>WARN</td>
<td>STOP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. OTMA</td>
<td>RIPITCON</td>
<td>ALL</td>
<td>10</td>
<td>0%</td>
<td>0</td>
<td>WARN</td>
<td>DEQUEUE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. ALL</td>
<td>ALL</td>
<td>3</td>
<td>300</td>
<td>0%</td>
<td>0</td>
<td>WARN</td>
<td>DEQUEUE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. ALL</td>
<td>ALL</td>
<td>3</td>
<td>200</td>
<td>0%</td>
<td>0</td>
<td>WARN</td>
<td>DEQUEUE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. ALL</td>
<td>ALL</td>
<td>ALL</td>
<td>210</td>
<td>0%</td>
<td>0</td>
<td>WARN</td>
<td>DEQUEUE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. ALL</td>
<td>ALL</td>
<td>ALL</td>
<td>20</td>
<td>0%</td>
<td>0</td>
<td>WARN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

QPF Options - Unload  

<table>
<thead>
<tr>
<th>Data set name</th>
<th>QPF.UNLOAD.%DEST.%DATE.%TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposition</td>
<td>MOD</td>
</tr>
<tr>
<td>Volume serial</td>
<td>SYSDA</td>
</tr>
<tr>
<td>Unit</td>
<td>SYSDA</td>
</tr>
<tr>
<td>Primary cylinders</td>
<td>1</td>
</tr>
<tr>
<td>Secondary cylinders</td>
<td>1</td>
</tr>
<tr>
<td>Block size</td>
<td></td>
</tr>
<tr>
<td>Storage class</td>
<td></td>
</tr>
<tr>
<td>Management class</td>
<td></td>
</tr>
<tr>
<td>Data class</td>
<td></td>
</tr>
<tr>
<td>Maximum data sets</td>
<td>999999</td>
</tr>
<tr>
<td>Retry</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>SYNCH_BLK</td>
</tr>
<tr>
<td>Model data set</td>
<td></td>
</tr>
</tbody>
</table>
## QPF Problem List Detail report

The sample report displayed below is the result of a QPF_LIST TYPE=DETAIL command set.

This report provides a detailed report of message queue utilization for the specified IMSID.

### Figure 230: Message Advisor Problem List Detail Report

<table>
<thead>
<tr>
<th>TYPE</th>
<th>NAME</th>
<th>MESSAGES</th>
<th>SHMSG%</th>
<th>LGMSG%</th>
<th>LAST ACT STATEMENT</th>
<th>NETID</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT-E</td>
<td>RJPJ0020</td>
<td>1404</td>
<td>0.00%</td>
<td>4.78%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>LUNAME</td>
<td>RHW640AA</td>
<td>1242</td>
<td>0.00%</td>
<td>4.23%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>SYSTEM</td>
<td>MASTER</td>
<td>812</td>
<td>0.00%</td>
<td>2.76%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>SECMAST</td>
<td>682</td>
<td>0.00%</td>
<td>2.32%</td>
<td>DEQUEUE</td>
<td>3P</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0032</td>
<td>468</td>
<td>0.00%</td>
<td>1.59%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0026</td>
<td>468</td>
<td>0.00%</td>
<td>1.59%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>LUNAME</td>
<td>RHW0453D</td>
<td>241</td>
<td>0.00%</td>
<td>0.82%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0034</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0031</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0030</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>WARN</td>
<td>6P</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0027</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0025</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0022</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0021</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0019</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0017</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0016</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0015</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0012</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0011</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0010</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0007</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0006</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>WARN</td>
<td>6P</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0005</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0002</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0001</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0003</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0004</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0008</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0009</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0013</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0014</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ00018</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>WARN</td>
<td>6P</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0024</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0028</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>WARN</td>
<td>6P</td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0029</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>DEQUEUE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RJPJ0033</td>
<td>234</td>
<td>0.00%</td>
<td>0.79%</td>
<td>WARN</td>
<td>6P</td>
</tr>
<tr>
<td>CNT-E</td>
<td>USER7B1</td>
<td>148</td>
<td>0.00%</td>
<td>0.50%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT-E</td>
<td>RIPS0002</td>
<td>120</td>
<td>0.00%</td>
<td>0.40%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>SYSTEM</td>
<td>MASTERC</td>
<td>120</td>
<td>0.00%</td>
<td>0.38%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT</td>
<td>D71BTRM2</td>
<td>100</td>
<td>0.00%</td>
<td>0.34%</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>CNT</td>
<td>D71BTRM1</td>
<td>100</td>
<td>0.00%</td>
<td>0.34%</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>
QPF Problem List Summary report

The sample report displayed below is the result of a QPF_LIST TYPE=PROBLEMS command set.

This report provides a summary report of message queue utilization for the specified IMSID.

Figure 231: Message Advisor Problem List Summary Report
QPF Problem List Statistics report

The sample report displayed below is the result of a QPF_LIST TYPE=STAT command set.

This report provides a summary of message queue utilization statistics for the specified IMSID.

Figure 232: Message Advisor Problem List Statistics Report

BMC430771_QPF_LIST_IN PROGRESS FOR ROHPXM (TASK 3)
>>>>QPF_LIST IMSID=R61P,TYPE=STATISTICS
>>>>END
Message Advisor for IMS V1.0.02 - Server ID QJER 09/25/2001.268 15.47
QPF Command Execution Report For IMSID R61P

QPF Statistics

<table>
<thead>
<tr>
<th>IMSID</th>
<th>Current 24-bit storage used</th>
<th>Maximum 24-bit storage used</th>
</tr>
</thead>
<tbody>
<tr>
<td>R61P</td>
<td>28,616</td>
<td>320,728</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMSID</th>
<th>Current 31-bit storage used</th>
<th>Maximum 31-bit storage used</th>
<th>Maximum storage usage allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,131,475</td>
<td>3,553,867</td>
<td>9,437,184</td>
</tr>
</tbody>
</table>

Hiperassist statistics

| QBLKS read hit ratio (%) | 35 |
| QBLKS write hit ratio (%) | 70 |
| SHMSG read hit ratio (%) | 39 |
| SHMSG write hit ratio (%) | 1  |
| LGMSG read hit ratio (%) | 26 |
| LGMSG write hit ratio (%) | 0  |

Maximum hiperpages allowed: 1,048,576
Buffers allocated: 63
Message queue blocksize: 9,128
Total read/write errors: 51,021

QBLKS reads bypassed: 15
QBLKS reads total: 42
QBLKS writes bypassed: 28
QBLKS writes total: 40
QBLKS initial records in use: 177
QBLKS maximum records: 12,225
QBLKS maximum blocks: 75
QBLKS initial hiperpages: 225
QBLKS current hiperpages: 225
QBLKS maximum hiperpages: 225
QBLKS hiperpages expansions: 0
QBLKS highest drrn read: 00000001

SHMSG reads bypassed: 12,459
SHMSG reads total: 31,365
SHMSG writes bypassed: 142
SHMSG writes total: 8,682
SHMSG initial records in use: 180,417
SHMSG maximum records: 540,000
SHMSG maximum blocks: 30,000

Appendix A  Message Advisor reports 379
Figure 233: Message Advisor Problem List Statistics Report (continued)

Message Advisor for IMS V1.0.02 - Server ID QJER
QPF Command Execution Report For IMSID R61P

Overflow protection statistics:
Unload tasks started .................. 1
Unload tasks waiting ................. 0
Enforce actions active ............... 0
Process actions active ............... 0
Operator actions active ............. 0
Operator actions pending ............ 0
MAQ command sets active ............. 1
Destinations/regions tracked ........ 375
Estimated dest/regions tracked ...... 16,384
Record count changes pending ....... 0
Counts active ....................... 0
Maximum counts ..................... 50
ITASKs started ...................... 1
ITASKs active ........................ 0
Maximum ITASKS allowed ............. 2
Maximum processing ITASKS ......... 0

IMS save area shortages solved by:
Bypasses ................................ 0
Extensions ............................. 0
Getmains ................................ 0

Contention - threshold check .......... 0
Contention - phase change ............ 0
Contention - counting ................. 4
Contention - storage .................. 0
Contention - recounts ................ 0

Total in-doubt after analyzed ......... 89
Total times counting restarted ...... 0
Total recounts required .............. 0
Total storage steals .................. 0
Total storage steals failed .......... 0
Total MAQ command sets .............. 31
Total scheduled services ............. 866,901
Total ITASKs started .................. 11
Total unload tasks started .......... 0
Total unload data set allocations .... 2
Total posts .......................... 22,741
Total post errors ..................... 0
Last post error code .................. 0
## Report field descriptions

The following table describes the fields on Message Advisor reports. The fields are listed alphabetically.

### Table 34: Report field descriptions

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCB#</td>
<td>Communications control block (CCB) number assigned to the conversation</td>
</tr>
<tr>
<td>DESTINATION</td>
<td>Name of the destination being processed</td>
</tr>
<tr>
<td>DRRN</td>
<td>First device relative record number for the message</td>
</tr>
<tr>
<td>FIRST/LAST DRRN</td>
<td>First and last DRRN numbers of the messages being dequeued</td>
</tr>
<tr>
<td>FORMAT</td>
<td>Message format service (MFS) format name</td>
</tr>
<tr>
<td>LU6</td>
<td>Indicates whether there is an LU 6 prefix</td>
</tr>
<tr>
<td>LTERM</td>
<td>Destination name</td>
</tr>
<tr>
<td>LUNAME</td>
<td>Logical unit name</td>
</tr>
<tr>
<td>MEDIAN SIZE OF ALL SEGMENTS INSERTED</td>
<td>Median segment size for your system rounded up to the nearest multiple of the QBLKS record length (zero will be displayed until at least 100 segments have been inserted)</td>
</tr>
<tr>
<td></td>
<td>You should add this value to the MAXIMUM LENGTH OF MESSAGE PREFIX field to find the SHMSG record length that will put half the records on the SHMSG data set and half on the LGMSG data set. You can wish to set the SHMSG LRECL somewhat larger than this sum to put some more records on the SHMSG data set.</td>
</tr>
<tr>
<td>MESSAGE CHAIN POSITION</td>
<td>Location of the message in the chain</td>
</tr>
<tr>
<td></td>
<td>Location is one of the following: first in chain (FIC), middle in chain (MIC), last in chain (LIC), and only in chain (OIC).</td>
</tr>
<tr>
<td>MESSAGE#/SEGMENT#</td>
<td>Number of messages and text segments from the input data set</td>
</tr>
<tr>
<td>MSC</td>
<td>Indicates whether there is an MSC prefix</td>
</tr>
<tr>
<td>MSG/SEG#</td>
<td>Number of messages and text segments after Message Advisor processes the REQUEUE request</td>
</tr>
<tr>
<td>MSG#</td>
<td>Sequence number assigned to the message by Message Advisor</td>
</tr>
<tr>
<td>MSG DRRN</td>
<td>Device relative record number assigned to the message</td>
</tr>
<tr>
<td>#MSGS</td>
<td>Number of messages being displayed</td>
</tr>
<tr>
<td>#MSG DEQ.</td>
<td>Number of messages being dequeued from the destination</td>
</tr>
<tr>
<td>#MSG (unld)</td>
<td>Number of messages being unloaded</td>
</tr>
<tr>
<td>NODE</td>
<td>LTERM node name</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ORIGIN</td>
<td>Destination (LTERM) from which the message originated</td>
</tr>
<tr>
<td>PGMNAME</td>
<td>Application name for the SMB destination</td>
</tr>
<tr>
<td>Q#</td>
<td>Number of the IMS message queue being processed (queue numbers are 1 through 4 and S for Suspend)</td>
</tr>
<tr>
<td>RACF</td>
<td>Indicates whether there is an RACF prefix</td>
</tr>
<tr>
<td>REC#</td>
<td>Sequence number assigned to the record by Message Advisor</td>
</tr>
</tbody>
</table>
| RECORDS EXTRACTED    | Number of records that were processed from the SCRAP file and written to the EXTRACT file  
This field reports only valid scrap codes that were selected for extraction.                                                                                                                                                                                                     |
| REGID                | IMS-assigned identifier for a dependent region                                                                                                                                                                                                                                                                                              |
| REQ/EXT.             | Number of messages extracted for a REQUEUE request                                                                                                                                                                                                                                                                                          |
| #RECS                | Number of records belonging to the destination                                                                                                                                                                                                                                                                                               |
| SCRAP CODE (01) - NOSOURCE | Number of records scrapped because the source of the message does not exist on the IMS system and cannot be created. Message Advisor will try to create the source if your system supports dynamic or virtual terminals. You can control whether this check is made by using the VALIDATE_SRC keyword.  
Note: While these messages could be requeued without checking, an abend could occur for input messages if the transaction which processes the message tries to return a response message when requeuing the message. You could consider using a CHANGE subcommand to requeue these messages with a different origin. |
| SCRAP CODE (02) - NODEST | Number of records scrapped because the destination for the message does not exist on the IMS system and cannot be created. Message Advisor will try to create the destination if your system supports dynamic or virtual terminals.  
The message cannot be requeued and all messages for this destination will receive this scrap code. You could consider using a CHANGE subcommand to requeue these messages to a different destination. |
<p>| SCRAP CODE (03) - INSERT | Number of records scrapped because the insert call failed. Message Advisor requeues a message by first making an insert call to IMS for each segment of the message. This scrap code indicates that the insert call failed. This error should rarely occur.                                                                                                                      |
| SCRAP CODE (04) - ENQFAIL | Number of records scrapped because the enqueue failed. Message Advisor requeues a message by making an enqueue call to IMS once all message segments have been inserted. This scrap code indicates that the enqueue call failed. This error should rarely occur.                                                                                                                     |</p>
<table>
<thead>
<tr>
<th><strong>Field name</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SCRAP CODE (05) - LENGTH</td>
<td>Number of records scrapped because the message exceeded the maximum IMS buffer size. Messages must fit in IMS buffers to be successfully requeued. This scrap code indicates the message would not fit. This error should not occur if you are requeueing to the same IMS system with no changes. Obviously, this error could occur if you change the IMS buffer size (the blocksize of the LGMSG data set), but it can occur for less obvious reasons. Messages must include a prefix which is of variable size depending on features of the message and your IMS system. If any of these items change, messages can no longer fit in a buffer. Also, if you use a CHANGE subcommand to change the data in a message, this error could occur.</td>
</tr>
<tr>
<td>SCRAP CODE (06) - PREFIX</td>
<td>Number of records scrapped because of an error in the message prefix. The IMS message prefix was in error or could not be created correctly on the IMS system. This error should rarely occur.</td>
</tr>
<tr>
<td>SCRAP CODE (07) - QSTOP</td>
<td>Number of records scrapped because the destination for the message is a transaction which is QSTOPped. By definition, messages cannot be queued to a QSTOPped transaction and all messages for this destination receive this scrap code. You should determine why the transaction is QSTOPped.</td>
</tr>
<tr>
<td>SCRAP CODE (08) - USER</td>
<td>Number of records scrapped because a user exit (specified by the EXIT keyword) indicated that this message should be scrapped.</td>
</tr>
<tr>
<td>SCRAP CODE (09) - CONVIN</td>
<td>Number of input conversation records scrapped because you have elected not to requeue conversational messages (CONVERSATIONS=NONE was specified). For more information about the CONVERSATIONS keyword, see the Message Advisor for IMS Reference Manual.</td>
</tr>
<tr>
<td>SCRAP CODE (0A) - CONVOUT</td>
<td>Number of output conversation records scrapped because you have elected not to requeue conversational messages (CONVERSATIONS=NONE was specified). For more information about the CONVERSATIONS keyword, see the Message Advisor for IMS Reference Manual.</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| SCRAP CODE (0B) - CHANGE | Number of system message records scrapped because you have included a CHANGE statement which selected this message, but the message could not be changed. This scrap code might occur for the following reasons:  
- NEWDESTINATION specified but the new destination does not exist and cannot be created.  
- NEWNODENAME specified but the message is not a VTAM message.  
- NEWUSERID specified but the message does not contain a security segment.  
- NEWMFSNAME specified but the message does not contain an MFS name.  
- NEWORIGIN specified but the message does not have a simple LTERM as the origin (APPC, OTMA, and system origins cannot be changed).  
- NEWPIMS specified but the message does not contain a processing IMS.  
- NEWOIMS specified but the message does not contain an origin IMS.  
- NEWSYSID was specified with a SYSID greater than 255 but the message contains a 1-byte SYSID.  
- NEWSYSID was specified with a SYSID that is not assigned on the IMS system.  
- REPLACE was specified on multiple CHANGE statements and the data to be replaced overlapped. |
<p>| SCRAP CODE (0C) - CANCEL | Number of records scrapped because the message indicated that it had been canceled before enqueue. |
| SCRAP CODE (0D) - NORECOVER | Number of records scrapped because the message is a non-recoverable message and you have elected not to requeue non-recoverable messages. See the Message Advisor for IMS Reference Manual for more information about the DISCARD keyword. |
| SCRAP CODE (0E) - REJECT | Number of records scrapped because of criteria specified with the SELECT/REJECT subcommands. The message does not match any SELECT statement or matches a REJECT statement on the REQUEUE command which means you have elected not to requeue the message. |</p>
<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCRAP CODE (0F) - INTERVAL</td>
<td>Number of records scrapped because of criteria specified with the INTERVAL subcommand. The timestamp of the message does not match any INTERVAL statement on the REQUEUE command which means you have elected not to requeue the message.</td>
</tr>
<tr>
<td>SCRAP CODE (10) - REJDEST</td>
<td>Number of records scrapped because the original destination or destination type does not match any SELECT statement or matches a REJECT statement on the REQUEUE command which means you have elected not to requeue the message. All messages for this destination receive this scrap code.</td>
</tr>
<tr>
<td>SCRAP CODE (11) - CONVCCB</td>
<td>Number of conversational records scrapped because the message is conversational, but a conversation could not be created.</td>
</tr>
<tr>
<td>SCRAP CODE (12) - RESTRICT</td>
<td>Number of destinations scrapped because the destination is restricted. Some messages with system destinations (mainly those containing input IMS commands) will always receive this scrap code. You can select other restricted destinations (such as those starting DFS, WTOR, and the primary and secondary master terminals) by naming them in a SELECT statement. You must include the specific name, not a pattern containing wild-cards. If you do not include the name in a SELECT statement, all messages for those destinations will receive this scrap code.</td>
</tr>
<tr>
<td>SCRAP CODE (13) - NOAPPC</td>
<td>Number of records scrapped because the message contains an APPC segment, indicating that the origin or destination is APPC, but APPC is not active on the IMS system.</td>
</tr>
<tr>
<td>SCRAP CODE (14) - ZEROTIME</td>
<td>Number of records scrapped because the timestamp in the message is zero, and you have elected not to requeue such messages. For more information about the ZERO_TIME keyword, see the <em>Message Advisor for IMS Reference Manual</em>.</td>
</tr>
<tr>
<td>SCRAP CODE (15) - RECORD</td>
<td>Number of records scrapped because the original message was composed of multiple records, and one or more records are missing from the IMS log. This error should rarely occur.</td>
</tr>
<tr>
<td>SCRAP CODE (16) - BADQUEUE</td>
<td>Number of records scrapped because Message Advisor experienced a logical error trying to recreate a message queue for a destination. All messages for the destination will receive this scrap code. This error should rarely occur, and usually means that an IMS checkpoint was invalid or corrupted, for example:</td>
</tr>
<tr>
<td></td>
<td>- An IMS checkpoint contained two transactions with the same name.</td>
</tr>
<tr>
<td></td>
<td>- Messages on an IMS checkpoint are chained together incorrectly.</td>
</tr>
<tr>
<td></td>
<td>- Messages for different destinations are on the same queue in an IMS checkpoint.</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SCRAP CODE (17) - NODATA</td>
<td>Number of records scrapped because the message contains no data segments and cannot be requeued. Some non-recoverable messages are logged without data segments. They will receive this scrap code if you elect to requeue non-recoverable messages (for more information about the DISCARD keyword, see the 0D NORECOVER scrap code and the Message Advisor for IMS Reference Manual ).</td>
</tr>
<tr>
<td>SCRAP CODE (18) - NOSYSID</td>
<td>Number of records scrapped because a SYSID in the message does not exist on the IMS system. While these messages could be requeued without checking, processing the message could cause an abend. You could consider using a CHANGE subcommand to requeue these messages with a different SYSID.</td>
</tr>
<tr>
<td>SCRAP CODE (19) - NOOTMA</td>
<td>Number of records scrapped because the message contains an OTMA segment, indicating that the origin or destination is OTMA, but OTMA is not active on the IMS system.</td>
</tr>
<tr>
<td>SCRAP CODE (1A) - BADSYS</td>
<td>Number of records scrapped because both SYSIDs in the message are for remote systems. While these messages could be requeued without checking, processing the message could cause an abend. You could consider using a CHANGE subcommand to requeue these messages with a different SYSID.</td>
</tr>
<tr>
<td>SCRAP CODE (1B) - ERECAN</td>
<td>Number of records scrapped because a message was encountered which was later cancelled during the processing of logged messages after an ERE failure. This is not an error, but since such messages were not processed originally, they should not be requeued and are given this scrap code.</td>
</tr>
<tr>
<td>SCRAP CODE (1C) - ERENOENQ</td>
<td>Number of records scrapped because a message was encountered which had been inserted but not yet enqeueued at the time of the abend during the processing of logged messages after an ERE failure. This is not an error, but since such messages were not processed originally, they should not be requeued and are given this scrap code.</td>
</tr>
<tr>
<td>SCRAP CODE (1D) - EREDEQ</td>
<td>Number of messages scrapped because a message was encountered which was later dequeued during the processing of logged messages after an ERE failure. This is not an error, but since such messages were already processed before the abend, they should not be requeued and are given this scrap code.</td>
</tr>
<tr>
<td>SCRAP CODE (1E) - EREGU</td>
<td>Number of messages scrapped because a message was encountered which was later the object of a GU (Get Unique) call from an IMS application during the processing of logged messages after an ERE failure. This is not an error, but since such messages were already processed before the abend, they should not be requeued and are given this scrap code.</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SCRAP CODE (1F) - EREFREE</td>
<td>Number of messages scrapped because a message was encountered which was later freed during the processing of logged messages after an ERE failure. This is not an error, but since such messages were already processed before the abend, they should not be requeued and are given this scrap code.</td>
</tr>
<tr>
<td>SCRAP CODE (??) - UNKNOWN</td>
<td>Number of records scrapped because of an error in scrap file processing</td>
</tr>
<tr>
<td>SIZE</td>
<td>Size of the record</td>
</tr>
<tr>
<td>SIZE OF LARGEST SEGMENT INSERTED</td>
<td>Add this value to the <code>MAXIMUM LENGTH OF MESSAGE PREFIX</code> field to find the minimum acceptable LGMSG record length for your system</td>
</tr>
<tr>
<td>STATE</td>
<td>Status of the destination, message, or conversation being processed. Conversation status types are Held, Sched, Pend1, and Pend2.</td>
</tr>
<tr>
<td></td>
<td>■ A Held conversation has a /HOLD command issued against it.</td>
</tr>
<tr>
<td></td>
<td>■ A Sched conversation has messages queued to transactions.</td>
</tr>
<tr>
<td></td>
<td>■ A Pend1 conversation has transaction output queued to Queue 1.</td>
</tr>
<tr>
<td></td>
<td>■ A Pend2 conversation has transaction output queued to Queue 5.</td>
</tr>
<tr>
<td>STATUS</td>
<td>Return code and short message text. For an explanation about each return code, see the BMC Documentation Center.</td>
</tr>
<tr>
<td>SYS</td>
<td>System identification of the IMS system; not to be confused with the IMSID</td>
</tr>
<tr>
<td>TEXT-#SEGS</td>
<td>Number of text segments belonging to the destination</td>
</tr>
<tr>
<td>TIME QUEUED</td>
<td>Time stamp showing when the message was queued to IMS</td>
</tr>
<tr>
<td>TOTAL 01 RECORDS READ</td>
<td>Total input records read for <code>TYPE=ERE</code>, <code>REPROCESS</code>, and <code>FILE</code></td>
</tr>
<tr>
<td>TOTAL 03 RECORDS READ</td>
<td>Total output records read for <code>TYPE=ERE</code>, <code>REPROCESS</code>, and <code>FILE</code></td>
</tr>
<tr>
<td>TOTAL 31 GU RECORDS READ</td>
<td>Total get unique (GU) records read</td>
</tr>
<tr>
<td>TOTAL 33 FREE RECORDS READ</td>
<td>Total free DRRN records read</td>
</tr>
<tr>
<td>TOTAL 34 CANCEL RECORDS READ</td>
<td>Total canceled records read</td>
</tr>
<tr>
<td>TOTAL 35 ENQUEUE RECORDS READ</td>
<td>Total enqueue records read</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>TOTAL 36 DEQUEUE RECORDS READ</td>
<td>Total dequeue records read</td>
</tr>
<tr>
<td>TOTAL 4001 RECORDS FOUND</td>
<td>Total begin checkpoint records read</td>
</tr>
<tr>
<td>TOTAL 4002 DATA RECORDS</td>
<td>Total short and long queue records read for this checkpoint</td>
</tr>
<tr>
<td>TOTAL 4002 LOG RECORDS READ</td>
<td>Total data and queue block records read for this checkpoint</td>
</tr>
<tr>
<td>TOTAL 4002 INPUT RECORDS</td>
<td>Total short and long data set records having an 01 log code</td>
</tr>
<tr>
<td>TOTAL 4002 OUTPUT RECORDS</td>
<td>Total short and long data set records having an 03 log code</td>
</tr>
<tr>
<td>TOTAL 4002 QBLK RECORDS</td>
<td>Total queue block records read for this checkpoint</td>
</tr>
<tr>
<td>TOTAL 4002 QBLK RECORDS SELECTED</td>
<td>Total queue block records not in error</td>
</tr>
<tr>
<td>TOTAL 4003 CNT ENTRIES PROCESSED</td>
<td>Total destination entries processed within all 4,003 records read</td>
</tr>
<tr>
<td>TOTAL 4003 RECORDS READ</td>
<td>Total 4003 records read within the checkpoint</td>
</tr>
<tr>
<td>TOTAL 4004 RECORDS READ</td>
<td>Total SMB (transaction) checkpoint records read</td>
</tr>
<tr>
<td>TOTAL 4004 SMB ENTRIES PROCESSED</td>
<td>Total SMB entries in the 4,004 records</td>
</tr>
<tr>
<td>TOTAL 4004 SMB ENTRIES SELECTED</td>
<td>Total SMBs having messages queued</td>
</tr>
<tr>
<td>TOTAL 400D RECORDS READ</td>
<td>Total conversation control blocks read</td>
</tr>
<tr>
<td>TOTAL 400E SPA RECORDS READ</td>
<td>Total scratch pad area (SPA) records read</td>
</tr>
<tr>
<td>TOTAL E35 INPUT RECORDS</td>
<td>Total records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 MESSAGES KEPT</td>
<td>Total messages kept after sort processing</td>
</tr>
<tr>
<td>TOTAL E35 MESSAGES DELETED</td>
<td>Total messages deleted after sort processing</td>
</tr>
<tr>
<td>TOTAL E35 01 RECORDS</td>
<td>Total 01 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 03 RECORDS</td>
<td>Total 03 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 31 RECORDS</td>
<td>Total 31 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 33 RECORDS</td>
<td>Total 33 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 34 RECORDS</td>
<td>Total 34 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 35 RECORDS</td>
<td>Total 35 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>TOTAL E35 36 RECORDS</td>
<td>Total 36 records for TYPE=ERE processed by the sort exit</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| TOTAL ACTIVE CONVERSATIONS               | Total active conversations found on the checkpoint  
An active conversation is scheduled or active.                                                                                           |
| TOTAL ACTIVE DESTINATIONS                | Total destinations (SMB and CNTs) with data queued                                                                                           |
| TOTAL INPUT DATA SETS PROCESSED          | Total SLDS, OLDS, or input file (TYPE=FILE and INPUT DSN=\textit{data set name}) data sets processed                                         |
| TOTAL CANCELS ISSUED                     | Total Message Advisor cancel messages issued because of incomplete message record chains                                                      |
| TOTAL CHECKPOINT DATA                    | Total amount of data found on the checkpoint including message prefixes                                                                     |
| TOTAL COMPRESSED DATA SIZE               | Compressed size of total eligible checkpoint data                                                                                           |
| TOTAL CONVERSATIONS                      | Total number of conversations in progress                                                                                                   |
| TOTAL CONVERSATIONS EXTRACTED            | Total conversations written to the EXTRACT file                                                                                             |
| TOTAL DUMPQ/SNAPQ RECORDS SELECTED       | Total 01 and 03 records selected from the checkpoint                                                                                       |
| TOTAL ELIGIBLE CHECKPOINT DATA           | Total amount of data found on the checkpoint that Message Advisor considers eligible for data compression                                     |
| TOTAL HELD CONVERSATIONS                 | Total held conversations found on the checkpoint  
A held conversation has a /HOLD command issued against it.                                                                                    |
| TOTAL LOG RECORDS COMPRESSED             | Total data records compressed                                                                                                                |
| TOTAL LOG RECORDS READ                   | Total records read from the beginning of the input file until the end of logical input                                                       |
| TOTAL MESSAGES ENQUEUED                  | Total messages put back on the message queues for all destinations                                                                          |
| TOTAL MIC/LIC RECORDS SELECTED           | Total middle-in-chain and last-in-chain records selected                                                                                        |
| TOTAL OIC/FIC RECORDS SELECTED           | Total only-in-chain and first-in-chain records selected                                                                                      |
| TOTAL Q5 RECORDS READ                    | Total conversational backup queue records read  
These records have been sent to an LTERM; but because a /HOLD might be issued, a copy is retained by IMS on Q5.                     |
| TOTAL RECORDS WRITTEN TO EXTRACT FILE    | Total number of records written to the EXTRACT data set  
For information about the extract data set, see the \textit{System Administration Products for IMS Customization Guide}. |

Appendix A Message Advisor reports 389
<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL RECORDS WRITTEN TO SPILL1 FILE</td>
<td>Total number of records written to the SPILL1 data set For information about spill data sets, see the <em>System Administration Products for IMS Customization Guide</em>.</td>
</tr>
<tr>
<td>TOTAL RECORDS WRITTEN TO SPILL2 FILE</td>
<td>Total number of records written to the SPILL2 data set For information about spill data sets, see the <em>System Administration Products for IMS Customization Guide</em>.</td>
</tr>
<tr>
<td>TOTAL RECORDS WRITTEN TO SPILL3 FILE</td>
<td>Total number of records written to the SPILL3 data set For information about spill data sets, see the <em>System Administration Products for IMS Customization Guide</em>.</td>
</tr>
<tr>
<td>TOTAL RECORDS WRITTEN TO SPILL4 FILE</td>
<td>Total number of records written to the SPILL4 data set For information about spill data sets, see the <em>System Administration Products for IMS Customization Guide</em>.</td>
</tr>
<tr>
<td>TOTAL RECORDS WRITTEN TO SCRAP FILE</td>
<td>Total number of records written to the SCRAP data set For information about the scrap data set, see “Message Advisor utilities” on page 405.</td>
</tr>
<tr>
<td>TOTAL SAVED RECORDS READ</td>
<td>Total Held conversational records read A held conversation has a /HOLD command issued against it.</td>
</tr>
<tr>
<td>TOTAL SCHEDULED-IN CONVERSATIONS</td>
<td>Total scheduled conversations found on the checkpoint A scheduled conversation has messages queued to transactions.</td>
</tr>
<tr>
<td>TOTAL SCHEDULED-OUT CONVERSATIONS</td>
<td>Total number of conversational output records pending delivery to a terminal</td>
</tr>
<tr>
<td>TOTAL SEGMENTS INSERTED</td>
<td>Total message segments put back on the message queues for all destinations</td>
</tr>
<tr>
<td>TOTAL UNLOAD RECORDS NOT DEQUEUED</td>
<td>Total count of records found on Extract input file(s) that represent messages that were written to the extract file, but were not dequeued by Message Advisor; these records are not eligible for requeueing</td>
</tr>
<tr>
<td>TRANS.</td>
<td>Transaction name</td>
</tr>
<tr>
<td>TRAN/REG</td>
<td>Transaction (for MPPs) or dependent region (for BMPs) It is displayed only when the REGID column is not blank, which implies a temporary queue.</td>
</tr>
<tr>
<td>TYPE</td>
<td>type of destination, such as CNT, SMB, or VSPCNT, being processed If a REQUEUE request specifies MODE=EXTRACT, the Requeue Destination report always displays TYPE as CNT when the destination can be VSPCNT. A REQUEUE request with MODE=REQUEUE or VALIDATE generates a report showing VSPCNT for VTAM subpool LTERMs. For Requeue Destination reports only, the TPIPEs that have the SYNCD attribute will display TYPE as SYNCTP. The TPIPEs that do not have the SYNCD attribute will continue to display TYPE as TPIPE.</td>
</tr>
<tr>
<td>USERID</td>
<td>identification of the user in the RACF prefix</td>
</tr>
<tr>
<td>Field name</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>VCNT</td>
<td>Indicates whether the LTERM is virtual</td>
</tr>
</tbody>
</table>
Message Advisor test applications

This appendix describes Message Advisor Test Applications. Each MPP and BMP input parameter is described. Information is also provided about how to define the input fields to simulate a variety of message queue usage problems.

Overview

Message Advisor Test Applications can be used to test Message Advisor base command sets and QPF_OPTIONS command sets of the Queue Protection Facility.

Testing Message Advisor base commands

Message Advisor Test Applications can be very useful in learning how Message Advisor is used to display, unload, dequeue and requeue messages.

They can insert large messages to a single or multiple destinations. By using Message Advisor, the messages can be displayed showing that large messages will have multiple records, thereby occupying more queue space.

If several messages are inserted, Message Advisor can be used to dequeue any one message from the destination or all the messages quickly and easily. Before performing the dequeue, you can unload the messages if they will be needed at a later time. The requeue function can then be tested by requeueing the messages previously unloaded.

The test applications can insert messages in a variety of ways with the MPP or the BMP. Also the BMP can be waited to allow the displaying of messages that would be on the temporary queue, as if the BMP was running and not issuing checkpoints. This type of display is not possible with normal IMS commands.
Test QPF_OPTIONS command sets

Message Advisor Test Applications are designed to help you

- Understand how QPF works
- Test the QPF sample scenario command set
- Test QPF command sets that you build to protect your IMS systems

Message Advisor Test Applications are distributed as a BMP and an MPP program. The basic function of inserting messages to the IMS message queues is the same in the MPP and the BMP.

MPP program

The BMP and the MPP perform the following tasks:

- Insert one or more messages to one destination.
- Insert one or more messages to many destination.
- Insert multiple segment messages.
- Insert a message with a long length.

Additionally, the MPP can be used to resubmit itself under one or more transaction codes, creating a recursive loop.

MPP screen input

The figure below shows the MPP Test Application input screen.

Figure 234: Message Advisor Test Application Input Screen

<table>
<thead>
<tr>
<th>Message Advisor TEST APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANNAME</td>
</tr>
<tr>
<td>DESTINATION -OR- (DEST MASK)</td>
</tr>
<tr>
<td>NUMBER OF MESSAGES</td>
</tr>
<tr>
<td>NUMBER OF SEGMENTS</td>
</tr>
<tr>
<td>SEGMENT LENGTH</td>
</tr>
<tr>
<td>MESSAGE TEXT:</td>
</tr>
<tr>
<td>RE-INSERT DATA TO OUTPUT DESTINATION(S) Y/N</td>
</tr>
</tbody>
</table>
This input screen contains the following fields:

**TRANNAME**

Any transaction name that is SYSGENed to execute the Message Advisor MPP Test Application (this program).

**DESTINATION**

Use this field to send any number of messages to a single destination (an LTERM name or a transaction name). This field is mutually exclusive with the **DEST MASK** field. If a transaction name is specified and the **RE-INSERT DATA TO OUTPUT DESTINATION** field is set to N, the **MESSAGE TEXT** field must match the input message format of the specified transaction.

If a transaction name is specified, and the **RE-INSERT DATA TO OUTPUT DESTINATION** field is set to Y, the transaction name must be defined in the IMS associated with the Message Advisor MPP Test Application (this program).

**DEST MASK**

Use this field to send a message to multiple destinations. The mask must contain four alphanumeric characters and will be used to build multiple destinations.

The destination name(s) will be 8-bytes long. Each name consists of a 4-byte DEST mask and a 4-byte suffix. The suffix will begin with 0001 and each destination name will increment by 1, depending on the number specified in the **NUMBER OF DEST** field.

For example, specifying a mask of ABCD and the number of destinations as 100 will send messages to ABCD0001 through ABCD0100.

**NUMBER OF DEST**

Use this field to send a message to multiple destinations. The value must be

\[ 1 \leq \text{NUMBER OF DEST} \leq 9999. \]
This field is used in conjunction with the **DEST MASK** field to build multiple destinations. If a destination mask is not specified, this field is ignored. The default is 1.

**NUMBER OF MESSAGES**

Use this field to send the desired number of messages to each destination. The value must be:

\[
1 \leq \text{NUMBER OF MESSAGES} \leq 99999
\]

The default is 1.

**NUMBER OF SEGMENTS**

Use this field to send the desired number of segments per message. The value must be:

\[
1 \leq \text{NUMBER OF SEGMENTS} \leq 99999
\]

The default is 1.

**SEGMENT LENGTH**

Use this field to send the segment within the message with specific segment length. If the segment length is longer than provided data, the segment text will be padded with a fill pattern. The value must be:

\[
82 \leq \text{NUMBER of SEGMENTS} \leq 9999
\]

If the **RE-INSERT DATA** field is set to Y, the segment length will be 278 (other values will be ignored).

**MESSAGE TEXT**

Use this field to send user data to a destination. If this field contains data, the **RE-INSERT DATA** field must be set to N. The default is a blank field.

**RE-INSERT DATA TO OUTPUT DESTINATION(S)**

Use this field to send the same input data to output destination(s). The default is N. If this field is set to Y, the **MESSAGE TEXT** field must be blank.

**MPP usage**

The MPP can simulate a wide variety of message queue problems in your IMS system. This section will describe how to define the fields on the MPP screen input to simulate the following conditions:
Terminal message build-up to one destination

Terminal message build-up to multiple destinations

Looping MPP inserting several messages to one or more destinations

Looping MPP doing message switches to other transactions causing a recursive effect

Regardless of the condition you are simulating, the **TRANNAME** field will always contain the QPF transaction name generated at installation time.

### Terminal message build-up to one destination

Define the fields on the MPP screen input in the following manner:

**DESTINATION**

If the IBM product EXTENDED TERMINAL OPTION (ETO) or the BMC Software product DELTA IMS VIRTUAL TERMINAL is installed, the destination does not need to be defined. If these products are not installed, the destination must be defined.

**NUMBER OF MESSAGES**

The number of messages should be a value that is large enough to make QPF attain the threshold you want to reach. The easiest way to determine this value is the following calculation:

Multiply the threshold percent of the phase you want to reach by the maximum number of messages allowed for the SHMSGQ or the LGMSGQ.

**NUMBER OF SEGMENTS**

The number of segments can be whatever value you feel is appropriate; however, 1 is recommended for ease of use.

**SEGMENT LENGTH**

The segment length can be any value from 82 to 9999. If you are trying to reach a specific threshold, a number that is larger than the SHMSGQ length should be used to ensure messages are put on the LGMSG. IMS will insert a message to the LGMSGQ or the SHMSGQ if the value is less than the SHMSGQ length.

**MESSAGE TEXT**

The text can be whatever is desired.
Terminal message buildup to multiple destinations

Define the fields on the MPP screen input in the following manner:

**DEST MASK**

The mask is a four-character prefix for the QPF application transactions that you would like to use. If ETO or DELTA IMS VIRTUAL TERMINAL is installed, the destinations do not need to be defined. If these products are not installed, the destinations must be defined.

**NUMBER OF DEST**

The number of destinations to which you would like to insert messages.

*Note*

If you enter 100 destinations and the number of messages is 100, each destination will be sent 100 messages. Thus, 10,000 messages will be inserted to your IMS system.

**NUMBER OF MESSAGES**

The number of messages should be a value that is large enough to make QPF attain the threshold you want to reach. The easiest way to determine this value is the following calculation:

Multiply the threshold percent of the phase you want to reach by the maximum number of messages allowed for the SHMSGQ or the LGMSGQ. Divide the resulting value by the number of destinations.

**NUMBER OF SEGMENTS**

The number of segments can be whatever value you feel is appropriate; however 1 is recommended for ease of use.

**SEGMENT LENGTH**

The segment length can be any value from 82 to 9999. If you are trying to reach a threshold a number larger than the SHMSGQ length should be used to ensure messages are put on the LGMSG. IMS will insert a message to the LGMSGQ or the SHMSGQ if the value is less than the SHMSGQ length.

**MESSAGE TEXT**

The text can be whatever is desired.
Looping MPP inserting several message to one or more destinations

With the exception of the NUMBER OF MESSAGES field, you can use the same settings as described in the previous MPP examples.

NUMBER OF MESSAGES

Change the number of messages to a very large value (99999 is maximum). If you have defined any actions for the Protect Phase or Overflow Phase, setting a high number of messages will ensure that IMS does not abend while running the test.

Looping MPP doing message switches to other transactions causing a recursive effect

Define the fields on the MPP screen input in the following manner:

DEST MASK

The mask is a four character prefix for the QPF application transactions you would like to use. The default is QPFT.

NUMBER OF DEST

The number of transactions for which you would like to cause a recursive effect.

For example, if you insert to four transactions, each transaction will insert to four more transactions, and each one of those 16 transactions will insert to four more transactions, etc.

NUMBER OF MESSAGES

BMC suggests that you specify one message. However, the larger the message number, the larger the recursive effect will be.

NUMBER OF SEGMENTS

The number of segments can be whatever value you feel is appropriate; however 1 is recommended for ease of use.

SEGMENT LENGTH

Specify a value of 278.

MESSAGE TEXT

Leave this field blank.
RE-INSERT DATA TO OUTPUT DESTINATION

Set this field to Y.

BMP program

Both the BMP and the MPP perform the following functions:

- Insert one or more messages to one destination
- Insert one or more messages to many destination
- Insert multiple segment messages
- Insert a message with a long length

Additionally, the following functions are unique to the BMP:

- Optionally issue checkpoints to cause TEMPQ build up
- Wait on a WTOR reply before issuing checkpoints

Sample BMP SYSIN

The BMP SYSIN input request consists of parameters and an END card. It can contain more than one set of input requests. If any set of input requests has an error, the BMP region will automatically terminate.

Figure 235 on page 400 shows how the SYSIN input should look.

Figure 235: Sample BMP SYSIN input

```plaintext
* //SYSIN DD *
* +-------->COL 1  +-------->COL 5 DEFAULT: VALID VALUES:
*  DEST=XXXXXXXX   BLANKS     ALPHANUMERIC
*  DMSK=XXXXX      BLANKS     ALPHANUMERIC
*  DNUM=9999       0001       0001-9999
*  MNUM=99999      00001      00001-99999
*  SNUM=99999      00001      00001-99999
*  SLTH=9999       00088      0088-9999
*  TEXT=UP TO 75 CHARACTERS  BLANKS
*  CHK=99999      000000     000000-99999
*  WAIT=?         N          Y/N
*  END
```
The BMP SYSIN contains the following parameters:

**CHKP**

Checkpoint message count. This parameter specifies the number of messages to insert before issuing a checkpoint. If CHK=0 is specified, no checkpoint will be taken. The default is 0.

**DEST**

Destination name. This parameter will send messages to a single destination. It must be a valid IMS destination name. This field can not be used with DMSK; they are mutually exclusive.

**DMSK**

Destination mask. This parameter will send messages to multiple destinations. The destination names will be created by combining DMSK and DNUM. In this sample, messages will be sent to five destinations named ABCD0001 through ABCD0005.

**DNUM**

Destination number. Messages will be sent to this number of destinations. DNUM is used with DMSK to build the destination names. Valid values are 0001 through 9999. The default is 1.

**END**

END is used to indicate the end of a set of input parameters. It is required.

**MNUM**

Message number. This parameter specifies the number of messages to be sent to each destination. Valid values are 00001 through 99999. The default is 1.

**SNUM**

Segment number. This parameter specifies the number of segments to be included in each message. Valid values are 00001 through 99999. The default is 1.

**SLTH**

Segment length. This parameter specifies the length of each segment sent. A segment consists of 75 bytes of text data plus padding data that reflects the length of the segment. The default is 88.
TEXT

Text data. This data makes up the first portion of the segment. If SLTH is greater than 88, the text data of the segment will be extended with padding data.

WAIT

If \texttt{CHKP=0} is specified, the program will wait after all messages are sent. It calls the Assembler subprogram QPFWTOR to issue a WTOR to the MVS console. Reply \texttt{Y} to the console WTOR to continue the program execution.

If \texttt{CHKP} is specified with a value greater than zero, the program will wait before the checkpoint call is issued. It calls the Assembler subprogram QPFWTOR to issue a WTOR to the MVS console. Reply \texttt{Y} to the console WTOR to continue the program execution. The default is \texttt{N}.

\section*{BMP usage}

The BMP can simulate a wide variety of message queue problems in your IMS system. This section will describe how to define the fields on the BMP SYSIN to simulate the following conditions:

- Terminal message build-up to one destination
- Terminal message build-up to multiple destinations
- Looping MPP inserting several messages to one or more destinations

\subsection*{Terminal message buildup to one destination}

Define the fields on the BMP SYSIN in the following manner:

\textbf{DEST}

If ETO or DELTA IMS VIRTUAL TERMINAL is installed, the destination does not need to be currently defined. If these products are not installed, the destination needs to be defined.

\textbf{MNUM}

The number of messages should be a value that is large enough to make QPF attain the threshold you want to reach. The easiest way to determine this value is the following calculation:

Multiply the threshold percent of the phase you want to reach by the maximum number of messages allowed for the SHMSGQ or the LGMSGQ.
SNUM

The number of segments can be whatever value you feel is appropriate; however 1 is recommended for ease of use.

SLTH

The segment length can be any value from 82 to 9999. If you are trying to reach a specific threshold, a number that is larger than the SHMSGQ length should be used to ensure messages are put on the LGMSG. IMS will insert messages to the LGMSGQ or the SHMSGQ if the value is less than the SHMSGQ length.

TEXT

The text can be whatever is desired.

CHKP

Specify a value between 0 and 99999 to represent the number of messages to create between checkpoints. Messages will not be enqueued until a checkpoint is issued. To cause TEMPQ buildup, specify CHKP=0. To cause message queues build, specify a high CHKP value.

WAIT

Specify YES or NO. If you want the BMP to wait for your response before issuing the checkpoint, specify WAIT=YES.

END

This is a required field. It marks the end of this input parameter.

Terminal message buildup to multiple destinations

Define the fields on the BMP SYSIN in the following manner:

DMSK

The mask is a four-character prefix for the QPF application transactions that you would like to use. If ETO or DELTA IMS VIRTUAL TERMINAL is installed, the destinations do not need to be currently defined. If these products are not installed, the destinations need to be defined.

DNUM

The number of destinations to which you would like to insert messages.
Note
If you enter 100 destinations and the number of messages is 100, each destination will be sent 100 messages. Thus, 10,000 messages will be inserted to your IMS system.

MNUM
The number of messages should be a value that is large enough to make QPF attain the threshold you want to reach. The easiest way to determine this value is the following calculation:

Multiply the threshold percent of the phase you want to reach by the maximum number of messages allowed for the SHMSGQ or the LGMSGQ. Divide the resulting value by the number of destinations.

SNUM
The number of segments can be whatever value you feel is appropriate; however 1 is recommended for ease of use.

SLTH
The segment length can be any value from 82 to 9999. If you are trying to reach a threshold a number larger than the SHMSGQ length should be used to ensure messages are put on the LGMSG. IMS will insert a message to the LGMSGQ or the SHMSGQ if the value is less than the SHMSGQ length.

TEXT
The text can be whatever is desired.

Looping BMP inserting several message to one or more destinations
With the exception of the MNUM field, you can use the same settings as described in the previous BMP examples.

MNUM
Change the number of messages to a very large value (99999 is maximum). If you have defined any actions for the Protect Phase or Overflow Phase, setting a high number of messages will ensure that IMS does not abend while running the test.
Message Advisor utilities

This appendix describes the LOGCOPY utility in Message Advisor.

LOGCOPY utility (QMR#COPY)

The LOGCOPY utility is used to copy OLDS or SLDS data sets if these data sets need to be sent to BMC Software for message queue error diagnostics.

This utility is used to overwrite the message text portion of the log records on the copied OLDS or SLDS to ensure confidentiality. The report generated by this utility will identify the checkpoint IDs on the input log and provide output log content information.

Figure 236 on page 405 shows an example of the LOGCOPY utility JCL. This JCL is in MAQCNTL member QMR#COPY.

Figure 236: JCL for LOGCOPY utility

```batch
//QMRCOPY JOB ACCT,'QMRCOPY0'
/* $BMCCHG P165215,CNTL CHG DEFAULT TO REQALL
$BMCCHG P254473,CNTL CORRECT SPELLING ERRORS @254473
$BMCCHG P313245,CNTL CORRECT CNTL LIB MEMBERS @313245
$BMCCHG F170827,CNTL CHANGE DEFAULT PARMS #170827
-------------------------------------------------------------------
USE THIS JOB TO COPY MESSAGE QUEUE DATA FROM THE OLDS OR SLDS
TO SEND TO BMC FOR MESSAGE QUEUE ERROR DIAGNOSTICS.
TO SEND TO BMC FOR MESSAGE QUEUE ERROR DIAGNOSTICS.

THE DEFAULT PARM 'REQALL,COPY,CLEAR' IS SUGGESTED.
FOLLOWING PARAMETERS CAN BE COMBINED, E.G., PARM='CLEAR,ERE'

PARM='REQALL' (DEFAULT) COPIES ALL RECORDS EXCLUDING X'5X'
DATABASE UPDATE RECORDS
PARM='CLEAR' (DEFAULT) WILL OVERLAY SENSITIVE DATA IN THE
MESSAGE TEXT ON X'01', X'03' AND X'4002' LOG RECORDS
SEE COMMENTS IN PGM SOURCE FOR CLEARING SPA DATA
IN X'13' AND X'400E' LOG RECORDS.
PARM='COPY' (DEFAULT) WILL SCAN INPUT AND PROVIDE A CHECKPOINT
REPORT, OUTPUT IS CREATED.
PARM='COLD' COPIES LOG RECORDS USED FOR DUMPQ/PURGE
RECOVERY - 4001, 4002, 4003, 4004, 400D, 400E,
4021, 4093, 4099. IF DELTA IMS/VT IS PRESENT THE
DE40, DE4C AND DE58 RECORDS.
PARM='ERE' WILL COPY 01, 03, 3X RECORDS USED IN ERE RECOVERY
```
IN ADDITION TO THE RECORDS FOR 'COLD'.

** PARM='REQIBM' WILL COPY THE LOG RECORDS FOR 'COLD', ERE AND 
** ADDITIONAL 40XX RECORDS USED BY IBM MESSAGE 
** REQUEUER PROGRAMS.

** PARM='NOCOPY' WILL SCAN INPUT AND PROVIDE A CHECKPOINT REPORT.

** NO OUTPUT IS CREATED.

** PARM='CHKPT=YYDDD/HHMMSSST' THE T IS OPTIONAL.

** THIS CHECKPOINT WILL BE COPIED. CHKPT MUST BE

** SNAPQ/DUMPO/PURGE. BY DEFAULT ALL RECORDS WILL

** BE SELECTED. YOU CAN SPECIFY: COLD, ERE OR

** REQIBM TO GET SPECIFIC RECORD SETS COPIED

** THE REPORT WILL IDENTIFY THE CHECKPOINT ID'S ON THE INPUT LOG

** AND PROVIDE OUTPUT LOG CONTENT INFORMATION.

QMRCOPY EXEC PGM=QMRCOPY0 PARM='REQALL,COPY,CLEAR' IS THE DEFAULT

STEPLIB DD DSN=MAQLIB,DISP=SHR                <==MODIFY

SYSPRINT DD SYSOUT=*                           

IMSLOG DD DISP=SHR, DSN=IMS.OLDS.OR.SLDS       <==MODIFY

QMRCOPY DD DISP=(NEW,CATLG), DSN=QMRCOPY, UNIT=CART <==MODIFY

Table 35 on page 406 shows the information in the JCL that you might need to add or change for your site.

Table 35: LOGCOPY JCL

<table>
<thead>
<tr>
<th>Item</th>
<th>You should type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Card</td>
<td>Job card information valid for your site.</td>
</tr>
<tr>
<td>PARM=</td>
<td>A list of optional parameters that you can define. For a description of each parameter, see MAQCNTL member QMR#COPY.</td>
</tr>
<tr>
<td>Message Advisor LOAD Library</td>
<td>The location of your Message Advisor LOAD library. The default is MAQLIB.</td>
</tr>
<tr>
<td>IMSLOG Data Set</td>
<td>The name of the input OLDS data set.</td>
</tr>
<tr>
<td>QMRCOPY Data Set</td>
<td>The name of the output QMRCOPY data set.</td>
</tr>
</tbody>
</table>
Glossary

This glossary contains terms relating to the following BMC Software products:

A

action menu

The submenu that is accessible from the Action menu on the menu bar. Action menu commands differ based on the node that you select in the console tree. Action menu items can also be accessed by right-clicking on tree nodes.

active entry

A main entry that has a program start time but no program termination time in the PDX directory. This condition indicates that the job has failed or is still running.

active instances node

Node used to issue commands—such as display settings, set temporary journal and trace options, dynamically reload options and exits, reset security and statistics, and switch journals. Only Energizer and IMS Connect address spaces have commands.

administrator authority

The authorization an ETA user must have in order to create, modify, and delete user access profiles.

affinities

Messages that have unique processing characteristics. Affinities are used by the Affinity Manager to select the datastores that can process the message.

Affinity Manager
One of the DataStore Router managers. Determines whether incoming transaction's attributes match any predefined Energizer affinity definitions. If there is a match, the Affinity Manager compiles a list of datastores that can process the message. If there is no match, the Affinity Manager compiles a list of all active datastores that have been defined to Energizer and IMS Connect.

ALOT

See autologoff interval on page 408.

ASOT

See autosignoff interval on page 408.

authorization profile

A method to limit access to, and use of, specific BMC product functions and components. See also user authorization profile on page 417.

authorized CPU ID

The identification number associated with a specific CPU. CPU ID passwords enable you to use a specific BMC Software product on that CPU.

autologoff interval

A user-specified interval that determines when inactive terminals and printers will be automatically logged off IMS.

autosignoff interval

A user-specified interval that determines when inactive terminals and printers will be automatically signed off IMS.

Autosignon

An MAQ feature that allows terminals and printers to bypass the ETO requirement that all devices sign on to IMS.
BMCLINK

An inter-region control facility provided with DELTA IMS products that allows the DELTA IMS user to communicate with an IMS control region.

BMCRESLB

A DD name for the IMS RESLIB data set used in the IMS control region if IMS RESLIB is a LINKLIST data set.

BMCXLINK

An inter-region control facility provided with the DELTA PLUS and ETA products that allows DELTA PLUS and ETA users to communicate with an IMS control region.

command

An order for an action to take place or a statement used to request a function. A command consists of the command name and its parameters.

command set

A Message Advisor command consisting of a primary command, subcommand(s), keywords, parameters, and an END command. Some subcommands can be repeated multiple times within a command set.

configuration

This node is used to customize Energizer by adding eLinks, eGroups, IMS Connects, datastores, DataStore Router definitions, and Exit Services definitions (exits).

console

A Windows application that is used to manage BMC Software products through one interface.
CPU ID authorization

The process of authorizing a BMC Software product so that it will run on a CPU for which you have a license and a valid CPU ID password.

CPU ID password

A unique string of characters that lets you run a specific BMC Software product on a specific CPU.

customer exit

Message exits that were written outside of Energizer (in assembler language) and are maintained by you. The exits cannot use the full capabilities of Energizer and must be defined to Energizer to use DataStore Routing.

DataStore Router

Directs a transaction to the datastore that is best equipped to process a transaction.

DEADQ

A value that selects or rejects messages that are on the IMS dead letter queue (with ETO). DEADQ is accepted by all Message Advisor commands that use the DESTYPE= keyword.

descriptor

A skeleton from which an IMS control block is dynamically built. There are four types of descriptors: LOGON, USER, MFS device, and MSC.

descriptor list

Information created and stored through a product that allows for the dynamic addition or deletion of descriptors on an IMS system.

DYNAMIC
A value that selects or rejects messages destined to ETO or VTF LTERMs. DYNAMIC is accepted by all Message Advisor commands that use the DESTYPE= keyword.

**dynamic LTERM**

Any LTERM in your IMS network not defined to IMS in the IMSGEN, but rather by DELTA PLUS VIRTUAL TERMINAL or ETA. If an LTERM assigned to a dynamic terminal is not found among IMSGEN-defined LTERMs or existing dynamic LTERMs, IMS creates a new dynamic LTERM with the name it requires.

**dynamic printer**

Any printer not defined in an IMSGEN, but rather defined to IMS by DELTA PLUS VIRTUAL TERMINAL or ETA. Dynamic terminal node names and LTERM names can be contained in a TSS table. The table allows possible dynamic printer LTERM names to be validated and, when needed, translated into the dynamic printer node names.

**dynamic terminal**

Any terminal not defined in an IMSGEN, but rather created at logon time by DELTA PLUS VIRTUAL TERMINAL or ETA. Dynamic terminal control blocks reside in the IMS control region only while that dynamic terminal is logged on to IMS. Dynamic terminal control blocks are deleted when dynamic terminals are logged off, thereby freeing virtual storage for another dynamic terminal user.

**E**

**eGroup**

A logical grouping of IMS Connects that use the same routing method. Because the eGroup name will be used as an XCF group name, the eGroup name must be unique. It must not match any existing XCF group name.

**eLink**

Energizer address space that provides the communications link between the UIM server and the IMS Connects. The eLink is used to change the environment and obtain system-related information.

**EXER Subroutine**
IMS Connect term. When IMS Connect detects an error in the output buffer after execution of the previous READ subroutine completes, control is passed to the EXER subroutine in the same user exit where the READ subroutine is executed. For more information, see the IMS Connect Guide and Reference manual.

Exit Services

Energizer for IMS Connect component that expands the basic functionality of IMS Connect—such as dynamic reload capabilities, virtual exits, and security exits.

G

global options

Options that govern how DELTA PLUS operates on all IMS systems that use DELTA PLUS. DELTA PLUS consists of various elements associated through VTAM and/or normal IMS inter-region communication. The information you specify in the DELTA PLUS global options keep these elements operating according to standards that you establish. These global options apply to all IMS systems that use DELTA PLUS.

Group options

Options that enable a user-defined group of IMS systems to be treated as one IMS system. A group of IMS systems would typically be an IMS Datasharing Group, IMS Shared Queues Group, or a group of logically related or duplicated IMS systems.

I

IMSID options

Options that specify customization information for each IMS system that uses DELTA PLUS.

INIT Subroutine

IMS Connect term. After a message exit has been successfully loaded, the INIT subroutine for that message exit is called. For more information, see the IBM IMS Connect Guide and Reference manual.
K

keyword

A name or symbol that identifies an option associated with a Message Advisor command or subcommand. Message Advisor keywords are followed by an equal (=) sign and are separated by a comma (,).

L

Load Balancer

Routing method that is used by the DataStore Router. Determines where to route the message based upon one of the routing methods: Workload Manager (WLM) Sysplex Routing Services or Statistical.

M

message exits

Exits that can be created in assembler language and are defined to Energizer (Customer Exits), or exits that are created and maintained in Energizer (Virtual Exits). See also user message exit on page 417.

Message Advisor Server

A functional unit that provides a shared interface to IMS control regions. The Message Advisor Server provides a method by which the content of IMS message queues can be managed. It can run as a started task or in batch mode.

messages pane

The bottom pane in the console. It displays system status and warnings. Message information includes: severity, status, message source, message ID, and message.

middleware tier

Tier that resides on the mainframe and contains the UIM server. The UIM server handles the communication between the client and the product.
**N**

**navigation pane**

The left pane of the console. It displays the hierarchical organization of your enterprise environment. The hierarchical structure lets you drill down through the components. The components in the navigation pane have right-click menus.

**node**

(1) An IMS resource that represents a physical VTAM terminal. The node is represented by a VTCB control block. (2) For Energizer, a location on the tree that represents a component. Each node on the tree has a corresponding icon.

**O**

**override options**

Options set at the entry or PSB level.

**P**

**parameter**

A keyword variable used with a command or subcommand to affect its result.

**pop-up menu**

Menu items that can be accessed by right-clicking on tree nodes. Pop-up menu commands differ based on the node that you select in the console tree.

**processing options**

Data that is stored in the options library. By using the console Save button translates field values into the proper format to store in the options library.

**product license**
An agreement between your organization and BMC Software stating the extent of your legal right to use a specific product and the system and CPU on which you will run the product.

**product tier**

The product tier resides on the mainframe and contains BMC Software products.

**R**

**request**

A unit of work that contains one or more command sets. Requests are stored as members in the Message Advisor request library.

**S**

**session**

Series of commands that come from the same client and belong to the same logical sequence.

**spare element pool**

A group of unused terminal, LTERM, and subpool control blocks used by DELTA IMS DC and DELTA IMS DB/DC to add terminals, LTERMs, and subpools between IMSGENs.

**T**

**task pane**

The right pane in the console. It is your work area. When you select an action from a menu in the console, the window that corresponds to the selected action displays in the task pane. Depending on the selected action, tabs display reports or data entry fields.

**TERM Subroutine**

IMS Connect term. When IMS Connect is shutting down, control is passed, in turn, to the TERM subroutine in each message exit that is active. For more information, see the *IMS Connect Guide and Reference* manual.
Translate Subsystem Services

A DELTA PLUS VIRTUAL TERMINAL and ETA generalized table lookup feature that is used to create and use tables of data to specify IMS customization options.

tree

A representation of the hierarchical organization of your enterprise environment. The tree is used to drill down through the hierarchy to access nodes.

tree node

A location on the tree that represents a component. Each node on the tree has a corresponding icon.

U

UIM server

User Interface Middleware server. The UIM server is common to a family of BMC Software IMS products. The UIM server is a TCP/IP application that facilitates communication between client workstations and the mainframe.

UIMx

Common component for all products that use the UIM server. The term is used during the installation process.

undock

Action that reattaches a window to the task pane (contents of the window are the same in dock and undock modes).

unknown destination

A destination to which output has been queued, but which does not exist on the IMS system because the LTERM was not IMSGEN-defined or has not been dynamically created. The DELTA PLUS VIRTUAL TERMINAL and ETA products allow you to control the creation of unknown destinations.
Unsolicited Output feature

A DELTA PLUS VIRTUAL TERMINAL and ETA feature that is used to specify whether unknown destinations should be created on an IMS system. This feature can also be used to specify options for unknown destinations (if you allow them to be created) and for dynamic printer LTERM S and the associated SPQB and VCNT control block structures.

UPDS

See user profile data set on page 417.

USER

In documentation, this term denotes the IMS user element.

user access profile

Information used by the internal security feature of DELTA PLUS and ETA. User access profiles specify the product features that a user (specified by user ID) can utilize on a specified IMS system.

user authorization profile

A method of limiting access to, and use of, specific BMC Software product functions and components.

user message exit

IMS Connect term. A message exit that is created and maintained by using assembler language. These exits process the requests that IMS Connect receives from the client or datastore.

user profile data set

For the ETA and DELTA PLUS products, a partitioned data set used to store the ETA and DELTA PLUS user access profiles. The user access profiles control access to ETA and DELTA PLUS functions.

user/SPQB

In DELTA IMS documentation, denotes the IMS user element.
virtual exit

Message exit that was created in Energizer, but without using assembler language. The exits are maintained and updated by using the console.

virtual LTERM

In an IMS network, any LTERM that is not defined to IMS in the IMMSGEN but is instead created when needed. If an LTERM assigned to a virtual terminal does not exist among IMMSGEN-defined LTERMs or virtual LTERMs, a new virtual LTERM with the required name can be created.

virtual printer

Any SLU 1- or 328x-type printer that is not defined in an IMMSGEN but is instead created when needed and later deleted. A possible virtual printer LTERM name can be validated and, when needed, translated into the virtual printer node name. Virtual printer LTERMs are created when needed, and additional elements are created shortly after output is ready to be sent to the printer.

virtual terminal

Any 3270- or SLU 2-type terminal that is not defined in an IMMSGEN but is instead created at logon time and deleted after the user logs off IMS. Installations can specify that the IMS terminal control block for a virtual terminal resides in the IMS control region.

virtual terminal control block

A control block created at logon exit time that consists of a prefix and copies of the appropriate model control blocks. A suffix of one word is added to each virtual communications line block. This suffix contains a code that identifies the control block as virtual.

VSPCNT

A value that selects or rejects messages destined to ISC destinations. VSPCNT is accepted by all Message Advisor commands that use the DESTYPE= keyword.
WorkLoad Governor

An Energizer feature that protects the availability of datastores by limiting the number of transactions passing through IMS Connect.
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