

MQSeries®



# Programmable System Management



MQSeries®



# Programmable System Management

**Note!**

Before using this information and the product it supports, be sure to read the general information under Appendix D, "Notices" on page 575.

**Eighth edition (January 1999)**

This edition applies to the following products:

- MQSeries for AIX® Version 5 Release 1
- MQSeries for AS/400® Version 4 Release 2.1
- MQSeries for AT&T GIS UNIX® Version 2 Release 2
- MQSeries for Digital OpenVMS Version 2 Release 2
- MQSeries for HP-UX Version 5 Release 1
- MQSeries for OS/2® Warp Version 5 Release 1
- MQSeries for OS/390® Version 2 Release 1
- MQSeries for SINIX and DC/OSx Version 2 Release 2
- MQSeries for Sun Solaris Version 5 Release 1
- MQSeries for Tandem NonStop Kernel Version 2 Release 2
- MQSeries for Windows NT® Version 5 Release 1
- MQSeries for Windows® Version 2 Release 1

and to any subsequent releases and modifications until otherwise indicated in new editions.

Order publications through your IBM® representative or the IBM branch office serving your locality. Publications are not stocked at the address given below.

At the back of this publication is a page titled "Sending your comments to IBM". If you want to make comments, but the methods described are not available to you, please address them to:

IBM United Kingdom Laboratories,  
Information Development,  
Mail Point 095,  
Hursley Park,  
Winchester,  
Hampshire,  
England,  
SO21 2JN

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

© **Copyright International Business Machines Corporation 1994,1999. All rights reserved.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

---

# Contents

<b>About this book</b> .....	vii
Who this book is for .....	viii
What you need to know .....	viii
How to use this book .....	viii
Event monitoring .....	ix
Programmable Command Formats .....	ix
Installable services .....	ix
Appendixes .....	ix
MQSeries publications .....	x
MQSeries cross-platform publications .....	x
MQSeries platform-specific publications .....	xiii
MQSeries Level 1 product publications .....	xiv
Softcopy books .....	xiv
MQSeries information available on the Internet .....	xvi
<b>Summary of changes</b> .....	xvii
Changes to this edition, SC33-1482-07 .....	xvii
MQSeries for OS/390 V2.1 .....	xvii
MQSeries V5.1 .....	xviii
MQSeries for AS/400 V4R2M1 .....	xxi
Changes to the seventh edition, SC33-1482-06 .....	xxi
Changes to the sixth edition, SC33-1482-05 .....	xxii

---

<b>Part 1. Event monitoring</b> .....	1
<b>Chapter 1. Using instrumentation events to monitor queue managers</b> .. .	3
<b>Chapter 2. Queue manager and channel events</b> .....	11
<b>Chapter 3. Understanding performance events</b> .....	17
<b>Chapter 4. Event message reference</b> .....	37
<b>Chapter 5. Example of using instrumentation events</b> .....	115
<b>Part 2. Programmable Command Formats</b> .....	125
<b>Chapter 6. Introduction to Programmable Command Formats</b> .....	127
<b>Chapter 7. Using Programmable Command Formats</b> .....	131
<b>Chapter 8. Definitions of the Programmable Command Formats</b> .....	139
<b>Chapter 9. Structures used for commands and responses</b> .....	387
<b>Chapter 10. Example of using PCFs</b> .....	409

---

<b>Part 3. Installable services</b> . . . . .	421
<b>Chapter 11. Installable services and components</b> . . . . .	423
<b>Chapter 12. Authorization service</b> . . . . .	433
<b>Chapter 13. Name service</b> . . . . .	441
<b>Chapter 14. User identifier service</b> . . . . .	447
<b>Chapter 15. Installable services interface</b> . . . . .	453

---

<b>Part 4. Appendixes</b> . . . . .	533
<b>Appendix A. Error codes</b> . . . . .	535
<b>Appendix B. Constants</b> . . . . .	555
<b>Appendix C. Header, COPY, and INCLUDE files</b> . . . . .	571
<b>Appendix D. Notices</b> . . . . .	575

---

<b>Part 5. Glossary and Index</b> . . . . .	579
<b>Glossary of terms and abbreviations</b> . . . . .	581
<b>Index</b> . . . . .	593

---

## Figures

1. Monitoring queue managers across different platforms, on a single node . . . . .	4
2. Understanding instrumentation events . . . . .	5
3. Understanding queue service interval events . . . . .	19
4. Queue service interval events - example 1 . . . . .	23
5. Queue service interval events - example 2 . . . . .	25
6. Queue service interval events - example 3 . . . . .	27
7. Definition of MYQUEUE1 . . . . .	30
8. Queue depth events (1) . . . . .	31
9. Queue depth events(2) . . . . .	33
10. Understanding services, components, and entry points . . . . .	425
11. Authorization service stanzas in qm.ini . . . . .	435
12. Authorization service stanzas in qm.ini (OS/2) . . . . .	437
13. Authorization service stanzas (Digital OpenVMS) . . . . .	437
14. Authorization service stanzas (Tandem NSK) . . . . .	438
15. Name service stanzas in qm.ini (for Digital OpenVMS) . . . . .	443
16. Name service stanzas in qm.ini (for OS/2) . . . . .	443
17. Name service stanzas in qm.ini (for UNIX systems) . . . . .	444

---

**Tables**

1.	MQSeries programmable system management . . . . .	vii
2.	Enabling queue manager events using MQSC commands . . . . .	14
3.	Enabling queue manager events using PCF commands . . . . .	14
4.	Performance event statistics . . . . .	18
5.	Event statistics summary for example 1 . . . . .	24
6.	Event statistics summary for example 2 . . . . .	26
7.	Event statistics summary for example 3 . . . . .	27
8.	Event statistics summary for queue depth events (example 1) . . . . .	32
9.	Summary showing which events are enabled . . . . .	32
10.	Event statistics summary for queue depth events (example 2) . . . . .	34
11.	Summary showing which events are enabled . . . . .	34
12.	Enabling performance events using MQSC . . . . .	35
13.	Enabling performance events using PCF commands . . . . .	35
14.	Event message structure for queue service interval events . . . . .	39
15.	Event message data summary . . . . .	42
16.	MQSeries for AS/400 - object authorities . . . . .	136
17.	MQSeries for Windows NT, Digital OpenVMS, Tandem NSK, and UNIX systems - object authorities . . . . .	137
18.	Initial values of fields in MQCFH . . . . .	393
19.	Initial values of fields in MQCFIN . . . . .	396
20.	Initial values of fields in MQCFST . . . . .	399
21.	Initial values of fields in MQCFIL . . . . .	402
22.	Initial values of fields in MQCFSL . . . . .	406
23.	Installable services and components summary . . . . .	424
24.	Example of entry-points for an installable service . . . . .	431
25.	Installable services functions . . . . .	453
26.	Fields in MQZED . . . . .	458
27.	C header files . . . . .	571
28.	COBOL COPY files . . . . .	572
29.	PL/I INCLUDE files . . . . .	572
30.	System/390 Assembler COPY files . . . . .	573

## Tables

## About this book

This book describes the facilities available on MQSeries products for:

- Monitoring instrumentation events in a network of connected systems that use IBM MQSeries products in different operating system environments
- Writing programs using the MQSeries Programmable Command Formats (PCFs) to administer IBM MQSeries systems either locally or remotely
- Extending the facilities available to a queue manager, using installable services

This table shows the facilities offered on each MQSeries platform, together with the short name used in this book for the platform.

Platform MQSeries for	Short name	Event monitoring	PCF commands	Installable services
AS/400	OS/400®	√	√	No
Digital OpenVMS	Digital OpenVMS	√	√	√
OS/390	OS/390	√	No	No
OS/2	OS/2	√	√	√
Tandem NonStop	Tandem NonStop Kernel	√	√	√
UNIX® systems <b>see Note below</b>	UNIX systems	√	√	√
VSE/ESA®	VSE/ESA	No	No	No
Windows NT	Windows NT	√	√	√
Windows V2.0	16-bit Windows	No	No	No
Windows V2.1	32-bit Windows	√	√	No

**Note:** In this book references to MQSeries for “UNIX systems” include:

- IBM MQSeries for AIX Version 5.1
- IBM MQSeries for AT&T GIS UNIX Version 2.2<sup>1</sup>
- IBM MQSeries for HP-UX Version 5.1
- IBM MQSeries for SINIX and DC/OSx Version 2.2
- IBM MQSeries for Sun Solaris Version 5.1

The following table lists the MQSeries products available for Windows, and shows the Windows platforms on which each runs.

<sup>1</sup> This platform has become NCR UNIX SVR4 MP-RAS, R3.0

## About this book

MQSeries product	Windows 3.1	Windows 95	Windows 98	Windows NT
MQSeries for Windows Client	✓	✓	✓	✓
MQSeries for Windows NT	No	No	No	✓
MQSeries for Windows V2.0	✓	✓	No	No
MQSeries for Windows V2.1	No	✓	✓	✓

MQSeries for Windows Version 2.1 supports most of the features described in this book. For information on this product, see the *MQSeries for Windows User's Guide*.

---

## Who this book is for

Primarily, this book is intended for system programmers who write programs to monitor and administer MQSeries products. To do this they may need to use the event messages, the Programmable Command Formats, and the installable services that are described in this book.

---

## What you need to know

You should have:

- Experience in writing systems management applications
- An understanding of the Message Queue Interface (MQI)
- Experience of MQSeries programs in general, or familiarity with the content of the other books in the MQSeries library

---

## How to use this book

There are three parts to this book:

- Part 1 – Event monitoring  
This part of the book describes how to monitor significant events in a network of connected systems that use IBM MQSeries products, in different operating system environments.
- Part 2 – Programmable Command Formats (PCFs)  
This part of the book describes the MQSeries (PCFs). PCFs are the formats of command and response messages that are sent between an MQSeries systems management application, or other program, and an MQSeries queue manager.
- Part 3 – Installable services  
This part of the book describes the MQSeries installable services. It includes full reference material for the interface to the installable services.

Go to the part that you are interested in; there is an introduction and discussion of each topic before the reference material.

## Event monitoring

The first three chapters contain a description of the different types of event, and provide guidance on their use.

Chapter 4, “Event message reference” on page 37 contains the reference material for the event messages. Chapter 5, “Example of using instrumentation events” on page 115 contains a fragment of a C program to illustrate the use of events.

## Programmable Command Formats

Chapter 6, “Introduction to Programmable Command Formats” on page 127 and Chapter 7, “Using Programmable Command Formats” on page 131 contain introduction and guidance material. If you are using PCFs, you are advised to read all of this part.

Chapter 8, “Definitions of the Programmable Command Formats” on page 139 and Chapter 9, “Structures used for commands and responses” on page 387 contain the reference material. See Chapter 10, “Example of using PCFs” on page 409 for an example of how PCFs could be used.

## Installable services

Chapter 11, “Installable services and components” on page 423 contains a description of the available installable services. You must read this chapter if you are going to use any of the installable services. Read the subsequent chapters as necessary, according to the services that you are going to install. Three services are described:

- Chapter 12, “Authorization service” on page 433.
- Chapter 13, “Name service” on page 441.
- Chapter 14, “User identifier service” on page 447.

Chapter 15, “Installable services interface” on page 453 describes the interface for each service.

## Appendixes

The error codes that apply to PCF commands and responses are listed in Appendix A, “Error codes” on page 535.

The values of constants for events, commands, responses and installable services are given in Appendix B, “Constants” on page 555.

The various header, COPY, and INCLUDE files that are provided to assist applications with the processing of event messages, PCF commands, and installable services are identified in Appendix C, “Header, COPY, and INCLUDE files” on page 571.

### MQSeries publications

This section describes the documentation available for all current MQSeries products.

### MQSeries cross-platform publications

Most of these publications, which are sometimes referred to as the MQSeries “family” books, apply to all MQSeries Level 2 products. The latest MQSeries Level 2 products are:

- MQSeries for AIX V5.1
- MQSeries for AS/400 V4R2M1
- MQSeries for AT&T GIS UNIX V2.2
- MQSeries for Digital OpenVMS V2.2
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for OS/390 V2.1
- MQSeries for SINIX and DC/OSx V2.2
- MQSeries for Sun Solaris V5.1
- MQSeries for Tandem NonStop Kernel V2.2
- MQSeries for VSE/ESA V2.1
- MQSeries for Windows V2.0
- MQSeries for Windows V2.1
- MQSeries for Windows NT V5.1

Any exceptions to this general rule are indicated. (Publications that support the MQSeries Level 1 products are listed in “MQSeries Level 1 product publications” on page xiv. For a functional comparison of the Level 1 and Level 2 MQSeries products, see the *MQSeries Planning Guide*.)

#### **MQSeries Brochure**

The *MQSeries Brochure*, G511-1908, gives a brief introduction to the benefits of MQSeries. It is intended to support the purchasing decision, and describes some authentic customer use of MQSeries.

#### **MQSeries: An Introduction to Messaging and Queuing**

*MQSeries: An Introduction to Messaging and Queuing*, GC33-0805, describes briefly what MQSeries is, how it works, and how it can solve some classic interoperability problems. This book is intended for a more technical audience than the *MQSeries Brochure*.

#### **MQSeries Planning Guide**

The *MQSeries Planning Guide*, GC33-1349, describes some key MQSeries concepts, identifies items that need to be considered before MQSeries is installed, including storage requirements, backup and recovery, security, and migration from earlier releases, and specifies hardware and software requirements for every MQSeries platform.

#### **MQSeries Intercommunication**

The *MQSeries Intercommunication* book, SC33-1872, defines the concepts of distributed queuing and explains how to set up a distributed queuing network in a variety of MQSeries environments. In particular, it demonstrates how to (1) configure communications to and from a representative sample of MQSeries products, (2) create required MQSeries objects, and (3) create and configure MQSeries channels. The use of channel exits is also described.

**MQSeries Clients**

The *MQSeries Clients* book, GC33-1632, describes how to install, configure, use, and manage MQSeries client systems.

**MQSeries System Administration**

The *MQSeries System Administration* book, SC33-1873, supports day-to-day management of local and remote MQSeries objects. It includes topics such as security, recovery and restart, transactional support, problem determination, and the dead-letter queue handler. It also includes the syntax of the MQSeries control commands.

This book applies to the following MQSeries products only:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

**MQSeries Command Reference**

The *MQSeries Command Reference*, SC33-1369, contains the syntax of the MQSC commands, which are used by MQSeries system operators and administrators to manage MQSeries objects.

**MQSeries Programmable System Management**

The *MQSeries Programmable System Management* book, SC33-1482, provides both reference and guidance information for users of MQSeries events, Programmable Command Format (PCF) messages, and installable services.

**MQSeries Messages**

The *MQSeries Messages* book, GC33-1876, which describes “AMQ” messages issued by MQSeries, applies to these MQSeries products only:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1
- MQSeries for Windows V2.0
- MQSeries for Windows V2.1

This book is available in softcopy only.

**MQSeries Application Programming Guide**

The *MQSeries Application Programming Guide*, SC33-0807, provides guidance information for users of the message queue interface (MQI). It describes how to design, write, and build an MQSeries application. It also includes full descriptions of the sample programs supplied with MQSeries.

**MQSeries Application Programming Reference**

The *MQSeries Application Programming Reference*, SC33-1673, provides comprehensive reference information for users of the MQI. It includes: data-type descriptions; MQI call syntax; attributes of MQSeries objects; return codes; constants; and code-page conversion tables.

**MQSeries Application Programming Reference Summary**

The *MQSeries Application Programming Reference Summary*, SX33-6095, summarizes the information in the *MQSeries Application Programming Reference* manual.

### **MQSeries Using C++**

*MQSeries Using C++*, SC33-1877, provides both guidance and reference information for users of the MQSeries C++ programming-language binding to the MQI. MQSeries C++ is supported by these MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for AS/400 V4R2M1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for OS/390 V2.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

MQSeries C++ is also supported by MQSeries clients supplied with these products and installed in the following environments:

- AIX
- HP-UX
- OS/2
- Sun Solaris
- Windows NT
- Windows 3.1
- Windows 95 and Windows 98

### **MQSeries Using Java™**

*MQSeries Using Java*, SC34-5456, provides both guidance and reference information for users of the MQSeries Bindings for Java and the MQSeries Client for Java. MQSeries Java is supported by these MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

### **MQSeries Administration Interface Programming Guide and Reference**

The *MQSeries Administration Interface Programming Guide and Reference*, SC34-5390, provides information for users of the MQAI. The MQAI is a programming interface that simplifies the way in which applications manipulate Programmable Command Format (PCF) messages and their associated data structures.

This book applies to the following MQSeries products only:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

### **MQSeries Queue Manager Clusters**

*MQSeries Queue Manager Clusters*, SC34-5349, describes MQSeries clustering. It explains the concepts and terminology and shows how you can benefit by taking advantage of clustering. It details changes to the MQI, and summarizes the syntax of new and changed MQSeries commands. It shows a number of examples of tasks you can perform to set up and maintain clusters of queue managers.

This book applies to the following MQSeries products only:

- MQSeries for AIX V5.1

MQSeries for HP-UX V5.1  
 MQSeries for OS/2 Warp V5.1  
 MQSeries for OS/390 V2.1  
 MQSeries for Sun Solaris V5.1  
 MQSeries for Windows NT V5.1

## MQSeries platform-specific publications

Each MQSeries product is documented in at least one platform-specific publication, in addition to the MQSeries family books.

### MQSeries for AIX

*MQSeries for AIX Version 5 Release 1 Quick Beginnings*, GC33-1867

### MQSeries for AS/400

*MQSeries for AS/400 Version 4 Release 2.1 Administration Guide*, GC33-1956

*MQSeries for AS/400 Version 4 Release 2 Application Programming Reference (RPG)*, SC33-1957

### MQSeries for AT&T GIS UNIX

*MQSeries for AT&T GIS UNIX Version 2 Release 2 System Management Guide*, SC33-1642

### MQSeries for Digital OpenVMS

*MQSeries for Digital OpenVMS Version 2 Release 2 System Management Guide*, GC33-1791

### MQSeries for Digital UNIX

*MQSeries for Digital UNIX Version 2 Release 2.1 System Management Guide*, GC34-5483

### MQSeries for HP-UX

*MQSeries for HP-UX Version 5 Release 1 Quick Beginnings*, GC33-1869

### MQSeries for OS/2 Warp

*MQSeries for OS/2 Warp Version 5 Release 1 Quick Beginnings*, GC33-1868

### MQSeries for OS/390

*MQSeries for OS/390 Version 2 Release 1 Licensed Program Specifications*, GC34-5377

*MQSeries for OS/390 Version 2 Release 1 Program Directory*

*MQSeries for OS/390 Version 2 Release 1 System Management Guide*, SC34-5374

*MQSeries for OS/390 Version 2 Release 1 Messages and Codes*, GC34-5375

*MQSeries for OS/390 Version 2 Release 1 Problem Determination Guide*, GC34-5376

### MQSeries link for R/3

*MQSeries link for R/3 Version 1 Release 2 User's Guide*, GC33-1934

### MQSeries for SINIX and DC/OSx

*MQSeries for SINIX and DC/OSx Version 2 Release 2 System Management Guide*, GC33-1768

## MQSeries publications

### MQSeries for Sun Solaris

*MQSeries for Sun Solaris Version 5 Release 1 Quick Beginnings*, GC33-1870

### MQSeries for Tandem NonStop Kernel

*MQSeries for Tandem NonStop Kernel Version 2 Release 2 System Management Guide*, GC33-1893

### MQSeries for VSE/ESA

*MQSeries for VSE/ESA Version 2 Release 1 Licensed Program Specifications*, GC34-5365

*MQSeries for VSE/ESA Version 2 Release 1 System Management Guide*, GC34-5364

### MQSeries for Windows

*MQSeries for Windows Version 2 Release 0 User's Guide*, GC33-1822

*MQSeries for Windows Version 2 Release 1 User's Guide*, GC33-1965

### MQSeries for Windows NT

*MQSeries for Windows NT Version 5 Release 1 Quick Beginnings*, GC34-5389

*MQSeries for Windows NT Using the Component Object Model Interface*, SC34-5387

*MQSeries LotusScript Extension*, SC34-5404

## MQSeries Level 1 product publications

For information about the MQSeries Level 1 products, see the following publications:

*MQSeries: Concepts and Architecture*, GC33-1141

*MQSeries Version 1 Products for UNIX Operating Systems Messages and Codes*, SC33-1754

*MQSeries for UnixWare Version 1 Release 4.1 User's Guide*, SC33-1379

## Softcopy books

Most of the MQSeries books are supplied in both hardcopy and softcopy formats.

### BookManager® format

The MQSeries library is supplied in IBM BookManager format on a variety of online library collection kits, including the *Transaction Processing and Data* collection kit, SK2T-0730. You can view the softcopy books in IBM BookManager format using the following IBM licensed programs:

BookManager READ/2

BookManager READ/6000

BookManager READ/DOS

BookManager READ/MVS

BookManager READ/VM

BookManager READ for Windows

**HTML format**

Relevant MQSeries documentation is provided in HTML format with these MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1 (compiled HTML)
- MQSeries link for R/3 V1.2

The MQSeries books are also available in HTML format from the MQSeries product family Web site at:

<http://www.software.ibm.com/ts/mqseries/>

**Portable Document Format (PDF)**

PDF files can be viewed and printed using the Adobe Acrobat Reader.

If you need to obtain the Adobe Acrobat Reader, or would like up-to-date information about the platforms on which the Acrobat Reader is supported, visit the Adobe Systems Inc. Web site at:

<http://www.adobe.com/>

PDF versions of relevant MQSeries books are supplied with these MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1
- MQSeries link for R/3 V1.2

PDF versions of all current MQSeries books are also available from the MQSeries product family Web site at:

<http://www.software.ibm.com/ts/mqseries/>

**PostScript format**

The MQSeries library is provided in PostScript (.PS) format with many MQSeries Version 2 products. Books in PostScript format can be printed on a PostScript printer or viewed with a suitable viewer.

**Windows Help format**

The *MQSeries for Windows User's Guide* is provided in Windows Help format with MQSeries for Windows Version 2.0 and MQSeries for Windows Version 2.1.

---

## MQSeries information available on the Internet

### MQSeries Web site

The MQSeries product family Web site is at:

<http://www.software.ibm.com/ts/mqseries/>

By following links from this Web site you can:

- Obtain latest information about the MQSeries product family.
- Access the MQSeries books in HTML and PDF formats.
- Download MQSeries SupportPacs.

---

## Summary of changes

This section lists the major revisions to this book for the current edition and the preceding two editions.

---

### Changes to this edition, SC33-1482-07

Changes to the book for this edition are marked by vertical bars in the left margin.

This edition of *MQSeries Programmable System Management* applies to these new versions and releases of MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for AS/400 V4R2M1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for OS/390 V2.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

Major new function supplied with each of these MQSeries products is summarized here.

### MQSeries for OS/390 V2.1

MQSeries for OS/390 V2.1 is a new product for the OS/390 platform that offers functional enhancements over MQSeries for MVS/ESA V1.2. Those functional enhancements specific to MQSeries for OS/390 are summarized here. As a general rule, other function described in this book as supported by MQSeries for OS/390 is also supported by MQSeries for MVS/ESA V1.2.

#### MQSeries queue manager clusters

MQSeries queue managers can be connected to form a *cluster* of queue managers. Within a cluster, queue managers can make the queues they host available to every other queue manager. Any queue manager can send a message to any other queue manager in the same cluster without the need for explicit channel definitions, remote queue definitions, or transmission queues for each destination. The main benefits of MQSeries clusters are:

- Fewer system administration tasks
- Increased availability
- Workload balancing

Clusters are supported by these MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for OS/390 V2.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

See the book *MQSeries Queue Manager Clusters*, SC34-5349, for a complete description of this function.

### **OS/390 Automatic Restart Manager (ARM)**

If an MQSeries queue manager or channel initiator fails, the OS/390 Automatic Restart Manager (ARM) can restart it automatically on the same OS/390 image. If the OS/390 image itself fails, ARM can restart that image's subsystems and applications automatically on another OS/390 image in the sysplex, provided that the LU 6.2 communication protocol is being used. By removing the need for operator intervention, OS/390 ARM improves the availability of your MQSeries subsystems.

### **OS/390 Resource Recovery Services (RRS)**

MQSeries Batch and TSO applications can participate in two-phase commit protocols with other RRS-enabled products, such as DB2®, coordinated by the OS/390 RRS facility.

### **MQSeries Workflow**

MQSeries Workflow allows applications on various network clients to perform business functions through System/390® by driving one or more CICS®, IMS®, or MQSeries applications. This is achieved through format, rule, and table definition, rather than through application programming.

### **Support for C++**

MQSeries for OS/390 V2.1 applications can be written in C++.

### **Euro support**

MQSeries supports new and changed code pages that use the euro currency symbol. Details of code pages that include the euro symbol are provided in the *MQSeries Application Programming Reference* book.

## **MQSeries V5.1**

The MQSeries Version 5 Release 1 products are:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for Sun Solaris V5.1
- MQSeries for Windows NT V5.1

The following new function is provided in all of the V5.1 products:

### **MQSeries queue manager clusters**

MQSeries queue managers can be connected to form a *cluster* of queue managers. Within a cluster, queue managers can make the queues they host available to every other queue manager. Any queue manager can send a message to any other queue manager in the same cluster without the need for explicit channel definitions, remote queue definitions, or transmission queues for each destination. The main benefits of MQSeries clusters are:

- Fewer system administration tasks
- Increased availability
- Workload balancing

Clusters are supported by these MQSeries products:

- MQSeries for AIX V5.1
- MQSeries for HP-UX V5.1
- MQSeries for OS/2 Warp V5.1
- MQSeries for OS/390 V2.1
- MQSeries for Sun Solaris V5.1

- MQSeries for Windows NT V5.1

See the book *MQSeries Queue Manager Clusters*, SC34-5349, for a complete description of this function.

### **MQSeries Administration Interface (MQAI)**

The MQSeries Administration Interface is an MQSeries programming interface that simplifies manipulation of MQSeries PCF messages for administrative tasks. It is described in a new book, *MQSeries Administration Interface Programming Guide and Reference*, SC34-5390.

### **Support for Windows 98 clients**

A Windows 98 client can connect to any MQSeries V5.1 server.

### **Message queue size**

A message queue can be up to 2 GB.

### **Controlled, synchronous shutdown of a queue manager**

A new option has been added to the **endmqm** command to allow controlled, synchronous shutdown of a queue manager.

### **Java support**

The MQSeries Client for Java and MQSeries Bindings for Java are provided with all MQSeries V5.1 products. The client, bindings, and common files have been packaged into .jar files for ease of installation.

### **Euro support**

MQSeries supports new and changed code pages that use the euro currency symbol. Details of code pages that include the euro symbol are provided in the *MQSeries Application Programming Reference* book.

### **Conversion of the EBCDIC new-line character**

You can control the conversion of EBCDIC new-line characters to ensure that data transmitted from EBCDIC systems to ASCII systems and back to EBCDIC is unaltered by the ASCII conversion.

### **Client connections via MQCONN**

A client application can specify the definition of the client-connection channel at run time in the MQCNO structure of the MQCONN call.

### **Additional new function in MQSeries for AIX V5.1**

- The UDP transport protocol is supported.
- Sybase databases can participate in global units of work.
- Multithreaded channels are supported.

### **Additional new function in MQSeries for HP-UX V5.1**

- MQSeries for HP-UX V5.1 runs on both HP-UX V10.20 and HP-UX V11.0.
- Multithreaded channels are supported.
- Both HP-UX kernel threads and DCE threads are supported.

### **Additional new function in MQSeries for OS/2 Warp V5.1**

OS/2 high memory support is provided.

### **Additional new function in MQSeries for Sun Solaris V5.1**

- MQSeries for Sun Solaris V5.1 runs on both Sun Solaris V2.6 and Sun Solaris 7.
- Sybase databases can participate in global units of work.
- Multithreaded channels are supported.

### **Additional new function in MQSeries for Windows NT V5.1**

MQSeries for Windows NT V5.1 is part of the IBM Enterprise Suite for Windows NT. New function in this release includes:

- Close integration with Microsoft® Windows NT Version 4.0, including exploitation of extra function provided by additional Microsoft offerings. The main highlights are:
  - Graphical tools and applications for managing, controlling, and exploring MQSeries:
    - MQSeries Explorer—a snap-in for the Microsoft management console (MMC) that allows you to query, change, and create the local, remote, and cluster objects across an MQSeries network.
    - MQSeries Services—an MMC snap-in that controls the operation of MQSeries components, either locally or remotely within the Windows NT domain. It monitors the operation of MQSeries servers and provides extensive error detection and recovery functions.
    - MQSeries API Exerciser—a graphical application for exploring the messaging and queuing programming functions that MQSeries provides. It can also be used in conjunction with the MQSeries Explorer to gain a deeper understanding of the effects of MQSeries operations on objects and messages.
    - MQSeries Postcard—a sample application that can be used to verify an MQSeries installation, for either local or remote messaging.
  - Support for the following features of Windows NT has been added:
    - Windows NT performance monitor—used to access and display MQSeries information, such as the current depth of a queue and the rate at which message data is put onto and taken off queues.
    - ActiveDirectory—programmable access to MQSeries objects is available through the Active Directory Service Interfaces (ADSI).
    - Windows NT user IDs—previous MQSeries restrictions on the validity of Windows NT user IDs have been removed. All valid Windows NT user IDs are now valid identifiers for MQSeries operations. MQSeries uses the associated Windows NT Security Identifier (SID) and the Security Account Manager (SAM). The SID allows the MQSeries Object Authority Manager (OAM) to identify the specific user for an authorization request.
    - Windows NT registry—now used to hold all configuration and related data. The contents of any configuration (.INI) files from previous MQSeries installations of MQSeries for Windows NT products are migrated into the registry; the .INI files are then deleted.

- A set of Component Object Model (COM) classes, which allow ActiveX applications to access the MQSeries Message Queue Interface (MQI) and the MQSeries Administration Interface (MQAI).
- An online Quick Tour of the product concepts and functions.
- An online Information Center that gives you quick access to task help information, reference information, and Web-based online books and home pages.
- Simplified installation of MQSeries for Windows NT, with default options and automatic configuration.
- Support for web-based administration of an MQSeries network, which provides a simplified way of using the MQSC commands and scripts and allows you to create powerful macros for standard administration tasks.
- Support for MQSeries LotusScript Extension (MQLSX), which allows Lotus Notes applications that are written in LotusScript to communicate with applications that run in non-Notes environments.
- Support for Microsoft Visual Basic for Windows Version 5.0.
- Performance improvements over the MQSeries for Windows NT Version 5.0 product.
- Information and examples on how MQSeries applications can interface with and exploit the lightweight directory access protocol (LDAP) directories.
- Support for Sybase participation in global units of work.

### **MQSeries for AS/400 V4R2M1**

New function in MQSeries for AS/400 V4R2M1 includes:

- Support for the MQSeries dead-letter queue handler
- Improvements to installation and migration procedures

---

### **Changes to the seventh edition, SC33-1482-06**

- New versions of the following products:
  - MQSeries for AS/400
  - MQSeries for Tandem NonStop Kernel

---

### Changes to the sixth edition, SC33-1482-05

- New versions of the following products:
  - MQSeries for AIX
  - MQSeries for HP-UX
  - MQSeries for OS/2
  - MQSeries for Sun Solaris
  - MQSeries for Windows NT
- The changes to the products include additional support for:
  - Distribution lists
  - Direct SPX support
  - Channel heartbeats
  - Fast messages
  - Auto-definition of channels
  - MCA exit chaining

---

## Part 1. Event monitoring

<b>Chapter 1. Using instrumentation events to monitor queue managers</b> . . .	3
Monitoring queue managers . . . . .	3
What instrumentation events are . . . . .	4
Format of event messages . . . . .	9
Monitoring events across different platforms . . . . .	9
Monitoring performance on Windows NT . . . . .	9
<b>Chapter 2. Queue manager and channel events</b> . . . . .	11
Queue manager events . . . . .	11
Enabling queue manager events summary . . . . .	14
Channel events . . . . .	14
<b>Chapter 3. Understanding performance events</b> . . . . .	17
What performance events are . . . . .	17
Understanding queue service interval events . . . . .	19
Queue service interval-events examples . . . . .	22
Understanding queue depth events . . . . .	28
Queue depth events examples . . . . .	30
Enabling performance events summary . . . . .	35
<b>Chapter 4. Event message reference</b> . . . . .	37
Event message formats . . . . .	38
MQMD (Message descriptor) . . . . .	40
MQCFH (PCF header) . . . . .	41
Event message data . . . . .	42
Alias Base Queue Type Error . . . . .	43
Bridge Started . . . . .	45
Bridge Stopped . . . . .	47
Channel Activated . . . . .	49
Channel Auto-definition Error . . . . .	51
Channel Auto-definition OK . . . . .	53
Channel Conversion Error . . . . .	55
Channel Not Activated . . . . .	58
Channel Started . . . . .	60
Channel Stopped . . . . .	62
Channel Stopped By User . . . . .	66
Default Transmission Queue Type Error . . . . .	68
Default Transmission Queue Usage Error . . . . .	70
Get Inhibited . . . . .	72
Not Authorized (type 1) . . . . .	74
Not Authorized (type 2) . . . . .	76
Not Authorized (type 3) . . . . .	78
Not Authorized (type 4) . . . . .	80
Put Inhibited . . . . .	82
Queue Depth High . . . . .	84
Queue Depth Low . . . . .	86
Queue Full . . . . .	88
Queue Manager Active . . . . .	90
Queue Manager Not Active . . . . .	91
Queue Service Interval High . . . . .	92

Queue Service Interval OK	94
Queue Type Error	96
Remote Queue Name Error	98
Transmission Queue Type Error	100
Transmission Queue Usage Error	102
Unknown Alias Base Queue	104
Unknown Default Transmission Queue	106
Unknown Object Name	108
Unknown Remote Queue Manager	110
Unknown Transmission Queue	113
<b>Chapter 5. Example of using instrumentation events</b>	<b>115</b>

---

## Chapter 1. Using instrumentation events to monitor queue managers

This chapter discusses:

- “Monitoring queue managers”
- “What instrumentation events are” on page 4
- “Format of event messages” on page 9
- “Monitoring events across different platforms” on page 9
- “Monitoring performance on Windows NT” on page 9

MQSeries instrumentation events provide information about errors, warnings, and other significant occurrences in a queue manager. You can, therefore, use these events to monitor the operation of queue managers (in conjunction with other methods such as NetView®). This chapter tells you what these events are, and how you use them.

Instrumentation events are supported by:

- MQSeries for AIX
- MQSeries for AS/400
- MQSeries for AT&T GIS UNIX
- MQSeries for Digital OpenVMS
- MQSeries for HP-UX
- MQSeries for OS/2 Warp
- MQSeries for OS/390
- MQSeries for SINIX and DC/OSx
- MQSeries for Sun Solaris
- MQSeries for Tandem NonStop Kernel
- MQSeries for Windows NT
- MQSeries for WindowsV2.1

---

### Monitoring queue managers

Instrumentation events can be generated for queue managers running on Digital OpenVMS, OS/2, OS/390, OS/400, Tandem NonStopKernel, Windows 95, Windows 98, Windows NT, and UNIX platforms. By incorporating these events into your own system management application, you can monitor the activities across many queue managers, across many different nodes, for multiple MQSeries applications. In particular, you can monitor all the nodes in your system from a single node (for those nodes that support MQSeries events) as shown in Figure 1 on page 4.

Instrumentation events can be reported through a user-written reporting mechanism to an administration application that supports the presentation of the events to an operator.

## Instrumentation events

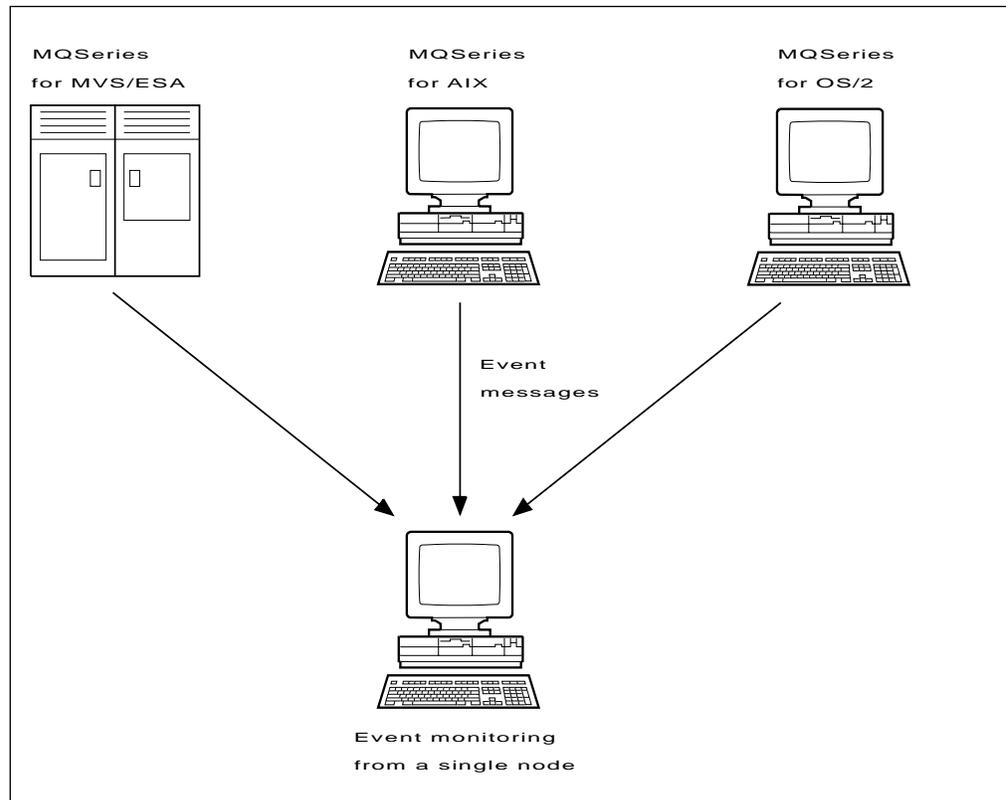


Figure 1. Monitoring queue managers across different platforms, on a single node

Instrumentation events also enable applications acting as agents for other administration networks, for example NetView, to monitor reports and create the appropriate alerts.

---

## What instrumentation events are

In MQSeries, an instrumentation event is a logical combination of conditions that is detected by a queue manager or channel instance. The result of such an event is that the queue manager or channel instance puts a special message, called an *event message*, on an event queue. Event queues are described in “Event notification through event queues” on page 6.

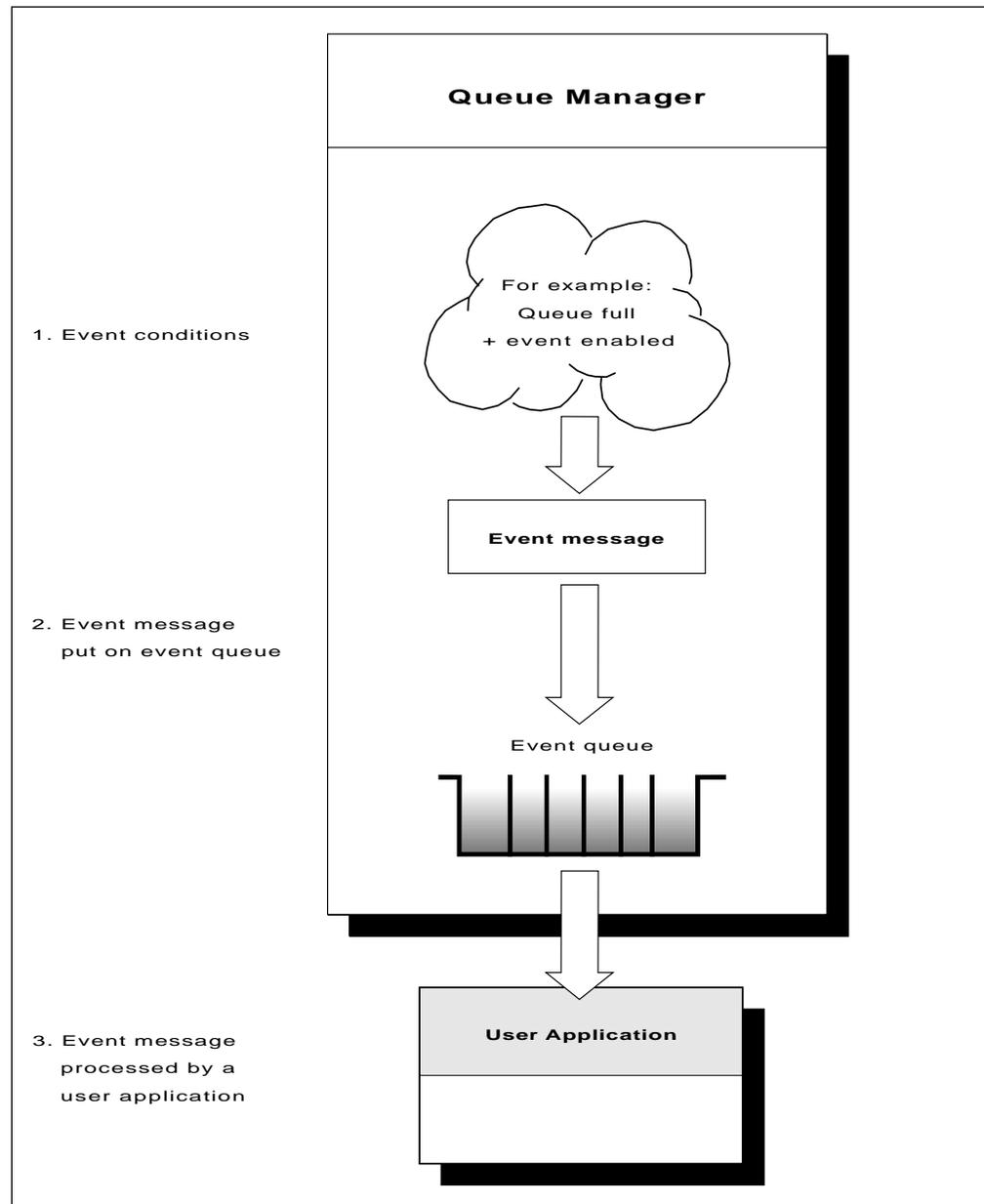


Figure 2. Understanding instrumentation events

For example, the conditions giving rise to a *Queue Full* event are:

- Queue Full events are enabled for a specified queue and
- An application issues an MQPUT request to put a message on that queue, but the request fails because the queue is full.

Other conditions that can give rise to instrumentation events include:

- A threshold limit for the number of messages on a queue is reached.
- A channel instance is started or stopped.
- On the MQSeries products for UNIX systems, MQSeries for Digital OpenVMS, MQSeries for Tandem NonStop Kernel, and on MQSeries for Windows NT, an application attempts to open a queue specifying a user ID that is not authorized.

## Instrumentation events

For the full list of events see Table 15 on page 42.

With the exception of channel events, all instrumentation events must be enabled before they can be generated.

## Types of event

MQSeries instrumentation events may be categorized as follows:

### Queue manager events

These events are related to the definitions of resources within queue managers. For example, an application attempts to put a message to a queue that does not exist.

### Performance events

These events are notifications that a threshold condition has been reached by a resource. For example, a queue depth limit has been reached.

### Channel events

These events are reported by channels as a result of conditions detected during their operation. For example, when a channel instance is stopped.

The event type is returned in the command identifier field in the message data.

### Trigger events

When we discuss triggering in other MQSeries books, we sometimes refer to a *trigger event*. This occurs when a queue manager detects that the conditions for a trigger event have been met. For example, for a queue for which triggers are active, a message of the required priority has been put on a queue so that the trigger depth is reached.

The result of a trigger event is that a trigger message is put onto an initiation queue and an application program is started. No other event messages as described in this book are involved (unless, for example, the initiation queue fills up and generates an instrumentation event).

## Event notification through event queues

When an event occurs the queue manager puts an event message on the appropriate event queue, if defined. The event message contains information about the event that you can retrieve by writing a suitable MQI application program that:

- Gets the message from the queue.
- Processes the message to extract the event data. For an overview of event message formats, see “Format of event messages” on page 9. For detailed descriptions about the format of each event message, see “Event message formats” on page 38.

For each queue manager, each category of event has its own event queue. All events in that category result in an event message being put onto the same queue.

### This event queue:

SYSTEM.ADMIN.QMGR.EVENT  
SYSTEM.ADMIN.PERFM.EVENT  
SYSTEM.ADMIN.CHANNEL.EVENT

### Contains messages from:

Queue manager events  
Performance events  
Channel events

You can define event queues either as local queues, alias queues, or as local definitions of remote queues. If you define all your event queues as local definitions of the same remote queue on one queue manager, you can centralize your monitoring activities.

### Using triggered event queues

You can set up the event queues with triggers so that when an event is generated, the event message being put onto the event queue starts a (user-written) monitoring application. This application can process the event messages and take appropriate action. For example, certain events may require that an operator be informed, other events may start off an application that performs some administration tasks automatically.

### When an event queue is unavailable

If an event occurs when the event queue is not available, the event message is lost. For example, if you do not define an event queue for a category of event, all event messages for that category will be lost. The event messages are *not*, for example, saved on the dead-letter (undelivered-message) queue.

However, the event queue may be defined as a remote queue. Then, if there is a problem on the remote system putting messages to the resolved queue, the event message **will** appear on the remote system's dead-letter queue.

An event queue may be unavailable for many different reasons including:

- The queue has not been defined.
- The queue has been deleted.
- The queue is full.
- The queue has been put-inhibited.

The absence of an event queue does not prevent the event from occurring. For example, after a performance event, the queue manager changes the queue attributes and resets the queue statistics. This happens whether the event message is put on the performance event queue or not. For more information about performance events changing queue attributes, see Chapter 3, "Understanding performance events" on page 17.

## Enabling and disabling events

You can enable and disable events by specifying the appropriate values for queue manager or queue attributes (or both) depending on the type of event. You do this using:

- MQSC (MQSeries) commands. For more information, see Chapter 2, "The MQSeries commands" in the *MQSeries Command Reference* book.
- PCF commands, for queue managers on OS/400, OS/2, Digital OpenVMS, Tandem NonStop Kernel, Windows NT, and UNIX systems. For more information, see Chapter 6, "Introduction to Programmable Command Formats" on page 127.
- Control Language (CL) commands for queue managers on OS/400. For more information, see the *MQSeries for AS/400 Administration Guide*
- The operations and controls panels for queue managers on OS/390. For more information, see the *MQSeries for OS/390 System Management Guide*.

## Instrumentation events

**Note:** Attributes related to events for both queues and queue managers can be set by command only. They are not supported by the MQI call MQSET.

Enabling and disabling an event depends on the category of the event:

- Queue Manager events are enabled by setting attributes on the queue manager. See “Enabling and disabling queue manager events” on page 11 for more information.
- Performance events as a whole must be enabled on the queue manager, otherwise no performance events can occur. You can then enable the specific performance events by setting the appropriate queue attribute. You also have to specify the conditions that give rise to the event. For more information, see “Enabling queue service interval events” on page 21 and “Understanding queue depth events” on page 28.
- Channel events do not require enabling, they occur automatically. Similarly, channel events cannot be disabled. However, channel events can be suppressed by not defining the channel events queue, or by making it put-inhibited. Note that this could cause a queue to fill up if remote event queues point to a put-inhibited channel events queue.

## Hints and tips for using events

Some things to consider about event queues:

- You must not define event queues as transmission queues because event messages have formats that are incompatible with the format of messages required for transmission queues.
- Performance events are not generated for the event queues themselves.
- If a queue manager attempts to put a queue manager or a performance event message on an event queue and an error is detected which would normally create an event, another event is not created and no action is taken.

### Notes:

1. If a channel event is put onto an event queue, an error condition causes the queue manager to create an event as usual.
  2. Putting a message on the dead-letter queue can cause an event to be generated if the event conditions are met.
- Event queues may have trigger actions associated with them and may therefore create trigger messages. However, If these trigger messages, in turn, cause conditions that would normally generate an event, no event is generated. This ensures that looping does not occur.
  - MQGET calls and MQPUT calls within a unit of work can cause performance related events to occur regardless of whether the unit of work is committed or backed out.
  - The putting of the event message and any subsequent actions arising do not affect the reason code to the MQI call that caused the event.

---

## Format of event messages

Event messages contain information about the event and its origin. Typically, these messages are processed by a system management application program tailored to meet the requirements of the enterprise at which it runs. As with all MQSeries messages, an event message has two parts: a message descriptor and the message data. The message descriptor is based on the MQMD structure, which is defined in “MQMD - Message descriptor” in the *MQSeries Application Programming Reference* manual. The message data is also made up of two parts:

- An *event header* containing the reason code that identifies the event type
- The *event data*, which provides further information about the event

“Message descriptors in event messages” on page 38 describes the format of the message descriptor when used with event messages.

---

## Monitoring events across different platforms

If you write an application using events to monitor queue managers, you need to:

1. Set up channels between the queue managers in your network.
2. Implement the required data conversions. The normal rules of data conversion apply. For example, if you are monitoring events on a UNIX system queue manager from an OS/390 queue manager, you must ensure that you perform the EBCDIC to ASCII conversions.

See Chapter 11, “Writing data-conversion exits” in the *MQSeries Application Programming Guide* for more information.

---

## Monitoring performance on Windows NT

On Windows NT, performance data is stored using performance counters that can be accessed using the system registry. Within the registry, the counters are grouped according to the type of object to which they apply. For MQSeries the type of object is MQSeries queues.

For each queue the following performance counters are available:

- The current queue depth
- The queue depth as a percentage of the maximum queue depth
- The number of messages per second being placed on the queue
- The number of messages per second being removed from the queue

For messages sent to a distribution list, the performance monitor counts the number of messages put on to each queue. In the case of large messages, the performance monitor counts the appropriate number of small messages.

See “Monitoring local queues with the Windows NT Performance Monitor” in the *MQSeries System Administration* book, for information on using the Windows NT performance monitor to view performance information. For details of how to access the performance counters in your own application, see the Microsoft Web site at:

<http://msdn.microsoft.com/developer/>

Follow the links from this site to obtain online platform SDK information.

## Monitoring performance

---

## Chapter 2. Queue manager and channel events

This chapter provides a brief overview of both queue manager events and channel events, and includes:

- “Queue manager events”
- “Enabling queue manager events summary” on page 14
- “Channel events” on page 14

---

### Queue manager events

Queue manager events are related to the definitions of resources within queue managers. The event messages for queue manager events are put on the SYSTEM.ADMIN.QMGR.EVENT queue. The following queue manager event types are supported:

- Authority (on OS/400, Windows NT, Digital OpenVMS, Tandem NonStop Kernel, and UNIX systems only)
- Inhibit
- Local
- Remote
- Start and Stop (for OS/390: Start only)

For each event type in this list, there is a queue manager attribute that enables or disables the event type. See Chapter 2, “The MQSeries commands” in the *MQSeries Command Reference* for more information.

The conditions that give rise to the event (when enabled) include:

- An application issues an MQI call, which fails. The reason code from the call is the same as the reason code in the event message.

Note that a similar condition may occur during the internal operation of a queue manager, for example, when generating a report message. The reason code in an event message may match an MQI reason code, even though it is not associated with any application. Therefore you should not assume that, because an event message reason code looks like an MQI reason code, the event was necessarily caused by an unsuccessful MQI call from an application.

- A command is issued to a queue manager and the processing of this command causes an event. For example:
  - A queue manager is stopped or started.
  - A command is issued where the associated user ID is not authorized for that command.

### Enabling and disabling queue manager events

You enable queue manager events by specifying the appropriate attribute on the MQSC command ALTER QMGR, or the appropriate parameters and values on the equivalent PCF command, Change Queue Manager. For example, to enable inhibit events on the default queue manager, use this MQSC command:

```
ALTER QMGR INHIBTEV (ENABLED)
```

## Queue manager and channel events

To disable the event, set the INHIBTEV attribute to DISABLED using this MQSC:

```
ALTER QMGR INHIBTEV (DISABLED)
```

To enable the same event from a PCF command, use this combination of parameters and values:

Command	Command parameter	Parameter value
Change Queue Manager	InhibitEvent	MQEVF_ENABLED

To disable these events, you issue the same command but specify a parameter value of MQEVF\_DISABLED.

## Authority events

### Note to users

1. All authority events are valid on Digital OpenVMS, OS/400, Windows NT, and UNIX systems only.
2. Tandem NSK supports only Not Authorized (type 1).

Authority events indicate that an authorization violation has been detected. For example, an application attempts to open a queue for which it does not have the required authority, or a command is issued from a user ID that does not have the required authority.

You enable authority events using:

- The AUTHOREV attribute on the MQSC command ALTER QMGR
- The *AuthorityEvent* parameter on the Change Queue Manager PCF command

For more information about the event data returned in authority event messages see:

- “Not Authorized (type 1)” on page 74
- “Not Authorized (type 2)” on page 76
- “Not Authorized (type 3)” on page 78
- “Not Authorized (type 4)” on page 80

## Inhibit events

Inhibit events indicate that an MQPUT or MQGET operation has been attempted against a queue, where the queue is inhibited for puts or gets respectively.

You enable inhibit events using:

- The INHIBTEV attribute on the MQSC command ALTER QMGR
- The *InhibitEvent* parameter on the Change Queue Manager PCF command

For more information about the event data returned in inhibit event messages, see:

- “Get Inhibited” on page 72
- “Put Inhibited” on page 82

## Local events

Local events indicate that an application (or the queue manager) has not been able to access a local queue, or other local object. For example, when an application attempts to access an object that has not been defined.

You enable local events using:

- The `LOCALEV` attribute on the MQSC command `ALTER QMGR`
- The `LocalEvent` parameter on the Change Queue Manager PCF command

For more information about the event data returned in local event messages, see:

“Alias Base Queue Type Error” on page 43

“Unknown Alias Base Queue” on page 104

“Unknown Object Name” on page 108

## Remote events

Remote events indicate that an application (or the queue manager) cannot access a (remote) queue on another queue manager. For example, when the transmission queue to be used is not correctly defined.

You enable remote events using:

- The `REMOTEEV` attribute on the MQSC command `ALTER QMGR`
- The `RemoteEvent` parameter on the Change Queue Manager PCF command

For more information about the event data returned in the remote event messages, see:

“Default Transmission Queue Type Error” on page 68

“Default Transmission Queue Usage Error” on page 70

“Queue Type Error” on page 96

“Remote Queue Name Error” on page 98

“Transmission Queue Type Error” on page 100

“Transmission Queue Usage Error” on page 102

“Unknown Default Transmission Queue” on page 106

“Unknown Remote Queue Manager” on page 110

“Unknown Transmission Queue” on page 113

## Start and stop events

Start and stop events (start only for OS/390) indicate that a queue manager has been started or has been requested to stop or quiesce.

You enable start and stop events using:

- The `STRSTPEV` attribute on the MQSC command `ALTER QMGR`
- The `StartStopEvent` parameter on the Change Queue Manager PCF command

Stop events are not recorded unless the default message-persistence of the `SYSTEM.ADMIN.QMGR.EVENT` queue is defined as persistent.

For more information about the event data returned in the start and stop event messages, see:

“Queue Manager Active” on page 90

“Queue Manager Not Active” on page 91

## Enabling queue manager events summary

The following figures summarize how to enable queue manager events:

<i>Table 2. Enabling queue manager events using MQSC commands</i>	
<b>Queue manager events</b>	
<b>Event</b>	<b>Queue manager attribute</b>
Authority	AUTHOREV (ENABLED)
Inhibit	INHIBTEV (ENABLED)
Local	LOCALEV (ENABLED)
Remote	REMOTEEV (ENABLED)
Start and Stop	STRSTPEV (ENABLED)

<i>Table 3. Enabling queue manager events using PCF commands</i>		
<b>Attribute name</b>	<b>Parameter identifier</b>	<b>Value</b>
AuthorityEvent	MQIA_AUTHORITY_EVENT	MQEVR_ENABLED
InhibitEvent	MQIA_INHIBIT_EVENT	MQEVR_ENABLED
LocalEvent	MQIA_LOCAL_EVENT	MQEVR_ENABLED
RemoteEvent	MQIA_REMOTE_EVENT	MQEVR_ENABLED
StartStopEvent	MQIA_START_STOP_EVENT	MQEVR_ENABLED

## Channel events

Channel events are generated:

- By a command to start or stop a channel.
- When an IMS® bridge starts or stops (on OS/390 only).
- When a channel instance starts or stops.
- When a channel receives a conversion error warning when getting a message.
- When an attempt is made to create a channel automatically; the event is generated whether the attempt succeeds or fails.

### Notes:

1. No channel events are generated when using MQSeries for OS/390 with distributed queuing provided by CICS®.
2. Client connections on MQSeries for OS/390 Version 2, MQSeries Version 5, or later products, do not cause Channel Started or Channel Stopped events.

When a command is used to start a channel an event is generated. Another event is generated when the channel instance starts. However, starting a channel by a listener, runmqchl, or by a queue manager trigger message does not generate an event; in this case the only event generated is when the channel instance starts.

A successful start or stop channel command will generate at least two events. The events are generated for both queue managers that are connected by the channel, unless one of the queue managers does not support events, for example versions of MQSeries for AS/400 previous to V3R2. Channel event messages are put onto

the SYSTEM.ADMIN.CHANNEL.EVENT queue, if it is available. Otherwise, they are ignored.

For more information about the event data returned in the channel event messages, see:

- | "Bridge Started" on page 45 (OS/390 only)
- | "Bridge Stopped" on page 47 (OS/390 only)
- "Channel Activated" on page 49
- "Channel Auto-definition Error" on page 51
- "Channel Auto-definition OK" on page 53
- "Channel Conversion Error" on page 55
- "Channel Not Activated" on page 58
- "Channel Started" on page 60
- "Channel Stopped" on page 62

### Enabling channel events

Most channel events are enabled automatically and cannot be enabled or disabled by command. The exceptions are the two automatic channel definition events. The generation of these events is controlled by the *ChannelAutoDefEvent* queue-manager attribute.

Refer to "Attributes for the queue manager" in the *MQSeries Application Programming Reference* manual for further details of this attribute.

If a queue manager does not have a SYSTEM.ADMIN.CHANNEL.EVENT queue, or if this queue is put inhibited, all channel event messages are discarded, unless they are being put by an MCA across a link to a remote queue. In this case they are put on the dead-letter queue.



---

## Chapter 3. Understanding performance events

This chapter describes what performance events are, how they are generated, how they can be enabled, and how they are used. The chapter includes:

- “What performance events are”
- “Understanding queue service interval events” on page 19
- “Queue service interval-events examples” on page 22
- “Understanding queue depth events” on page 28
- “Queue depth events examples” on page 30
- “Enabling performance events summary” on page 35

In this chapter, the examples assume that you set queue attributes by using the appropriate MQSeries commands (MQSC). See Chapter 2, “The MQSeries commands” in the *MQSeries Command Reference* book for more information. You can also set them using:

- The operations and controls panels, for queue managers, on OS/390.
- The corresponding PCF commands, for queue managers, on:
  - Digital OpenVMS
  - OS/2
  - OS/400
  - Tandem NSK
  - Windows NT
  - UNIX systems

See Chapter 6, “Introduction to Programmable Command Formats” on page 127 for more information.

---

### What performance events are

Performance events are related to conditions that can affect the performance of applications that use a specified queue.

There are two types of performance event:

- *Queue depth events*, related to the number of messages on a queue, that is how full, or empty, the queue is.
- *Queue service interval events*, related to whether messages are processed within a user-specified time interval.

The scope of performance events is the queue, so that MQPUT calls and MQGET calls on one queue do not affect the generation of performance events on another queue.

**Note:** A message must be either put on, or removed from, a queue for any performance event to be generated.

### Performance event data

When a performance event is generated, the queue manager puts the associated event message on the SYSTEM.ADMIN.PERFM.EVENT queue.

The event data contains a reason code that identifies the cause of the event, a set of performance event statistics, and other data. For more information about the event data returned in performance event messages, see:

- “Queue Depth High” on page 84
- “Queue Depth Low” on page 86
- “Queue Full” on page 88
- “Queue Service Interval High” on page 92
- “Queue Service Interval OK” on page 94

### Understanding performance event statistics

The event data in the event message contains information about the event for system management programs. For all performance events, the event data contains the names of the queue manager and the queue associated with the event. Also, the event data contains statistics related to the event. You can use these statistics to analyze the behavior of a specified queue. Table 4 summarizes the event statistics. All the statistics refer to what has happened since the last time the statistics were reset.

<b>Parameter</b>	<b>Description</b>
TimeSinceReset	The elapsed time since the statistics were last reset.
HighQDepth	The maximum number of messages on the queue since the statistics were last reset.
MsgEnqCount	The number of messages enqueued (the number of MQPUT calls to the queue), since the statistics were last reset.
MsgDeqCount	The number of messages dequeued (the number of MQGET calls to the queue), since the statistics were last reset.

Performance event statistics are reset when:

- Any performance event occurs.
- The PCF command, Reset Queue Statistics, is issued from a user-written administration program. There is no MQSC equivalent for this command.

## Understanding queue service interval events

Queue service interval events indicate whether a queue was 'serviced' within a user-defined time interval called the *service interval*. Depending on the circumstances at your installation, you can use queue service interval events to monitor whether messages are being taken off queues quickly enough.

### What queue service interval events are

There are two types of queue service interval event:

- A **Queue Service Interval OK** event, which indicates that following an MQPUT call or an MQGET call that leaves a non-empty queue, an MQPUT call or an MQGET call was performed within a user-defined time period, known as the *service interval*.

In this section, Queue Service Interval OK events are referred to as OK events.

- A **Queue Service Interval High** event, which indicates that following an MQGET or MQPUT call that leaves a non-empty queue, an MQGET call was not performed within the user-defined service interval.

This event message can be caused by an MQPUT call or an MQGET call.

In this section, Queue Service Interval High events are referred to as high events.

These events are mutually exclusive, which means that if one is enabled the other is disabled. However, both events can be simultaneously disabled.

Figure 3 shows a graph of queue depth against time. At P1, an application issues an MQPUT, to put a message on the queue. At G1, another application issues an MQGET to remove the message from the queue.

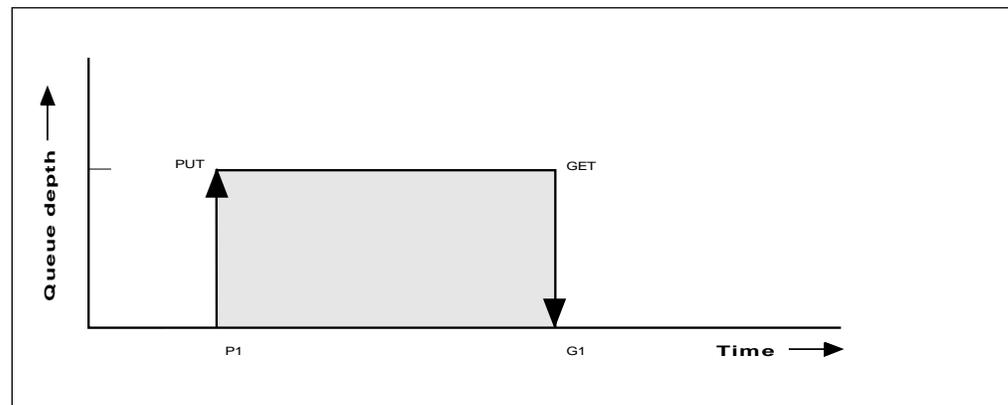


Figure 3. Understanding queue service interval events

In terms of queue service interval events, these are the possible outcomes:

- If the elapsed time between the put and get is less than or equal to the service interval:
  - If OK events are enabled, a *Queue Service Interval OK* event is generated at G1.
  - If high events are enabled, no event is generated at G1.
  - If neither event is enabled, no queue service interval event is generated.

## Queue-service-interval-events

- If the elapsed time between the put and get is greater than the service interval:
  - If high events are enabled, a *Queue Service Interval High* event is generated at G1.
  - If OK events are enabled, no event is generated at G1.
  - If neither event is enabled, no queue service interval event is generated.

The actual algorithm for starting the service timer and generating events is described in “Queue service-interval-events algorithm” on page 21.

## Understanding the service timer

Queue service interval events use an internal timer, called the *service timer*, which is controlled by the queue manager. The service timer is only used if one or other of the queue service interval events are enabled.

### What precisely does the service timer measure?

The service timer measures the elapsed time between an MQPUT call to an empty queue or an MQGET call and the next put or get, provided the queue depth is nonzero between these two operations.

### When is the service timer active?

The service timer is always active (running), if the queue has messages on it (depth is nonzero) and a queue service interval event is enabled. If the queue becomes empty (queue depth zero), the timer is put into an OFF state, to be restarted on the next put.

### When is the service timer reset?

The service timer is always reset after an MQGET call. It is also reset by an MQPUT call to an empty queue. However, it is not necessarily reset on a queue service interval event.

### How is the service timer used?

Following an MQGET call or an MQPUT call, the queue manager compares the elapsed time as measured by the service timer, with the user-defined service interval. The result of this comparison is that:

- An OK event is generated if the operation is an MQGET call and the elapsed time is less than or equal to the service interval, AND this event is enabled.
- A high event is generated if the elapsed time is greater than the service interval, AND this event is enabled.

### Can applications read the service timer?

No, the service timer is an internal timer that is not available to applications.

### What about the *TimeSinceReset* parameter?

The *TimeSinceReset* parameter is returned as part of the event statistics in the event data. It specifies the time between successive queue service interval events, unless the event statistics are reset. The reset can be caused by a queue depth event or you can reset them yourself explicitly using the PCF command Reset Queue Statistics.

## Enabling queue service interval events

To configure a queue for queue service interval events you must:

1. Enable performance events on the queue manager, using the queue manager attribute *PerformanceEvent* (PERFMEV in MQSC).
2. Set the control attribute, *QServiceIntervalEvent*, for a Queue Service Interval High or OK event on the queue, as required (QSVCIEV in MQSC).
3. Specify the service interval time by setting the *QServiceInterval* attribute for the queue to the appropriate length of time (QSVCINT in MQSC).

For example, to enable Queue Service Interval High events with a service interval time of 10 seconds (10 000 milliseconds) use the following MQSC commands:

```
ALTER QMGR +
PERFMEV(ENABLED)

ALTER QLOCAL('MYQUEUE') +
  QSVCINT(10000) +
  QSVCIEV(HIGH)
```

**Note:** When enabled, a queue service interval event can only be generated on an MQPUT call or an MQGET call. The event is **not** generated when the elapsed time becomes equal to the service interval time.

### Automatic enabling of queue service interval events

The high and OK events are mutually exclusive, that is, when one is enabled, the other is automatically disabled.

When a high event is generated on a queue, the queue manager automatically disables high events and enables OK events for that queue.

Similarly, when an OK event is generated on a queue, the queue manager automatically disables OK events and enables high events for that queue.

## Queue service-interval-events algorithm

This section gives the formal rules associated with the timer, and the queue service interval events.

### Service timer

The service timer is reset to zero and restarted:

- Following an MQPUT call to an empty queue.
- Following an MQGET call, if the queue is not empty after the MQGET call.

The resetting of the timer does not depend on whether an event has been generated.

At queue manager startup the service timer is set to startup time if the queue depth is greater than zero.

If the queue is empty following an MQGET call, the timer is put into an OFF state.

### Queue Service Interval OK events

- The Queue Service Interval OK event must be enabled.
- If the service time (elapsed time) is less than or equal to the service interval, an event is generated on the next MQGET call.

### Queue Service Interval High events

- The Queue Service Interval High event must be enabled.
- If the service time is greater than the service interval, an event is generated on the next MQPUT or MQGET call.

---

## Queue service interval-events examples

This section provides progressively more complex examples to illustrate the use of queue service interval events.

The figures accompanying the examples have the same structure:

- The top section is a graph of queue depth against time, showing individual MQGET calls and MQPUT calls.
- The middle section shows a comparison of the time constraints. There are three time periods that you must consider:
  - The user-defined service interval.
  - The time measured by the service timer.
  - The time since event statistics were last reset (TimeSinceReset in the event data).
- The bottom section of each figure shows which events are enabled at any instant and what events are generated.

The following examples illustrate:

- How the queue depth varies over time.
- How the elapsed time as measured by the service timer compares with the service interval.
- Which event is enabled.
- What events are generated.

### Example 1 (queue service interval events)

This example shows a simple sequence of MQGET calls and MQPUT calls, where the queue depth is always one or zero.

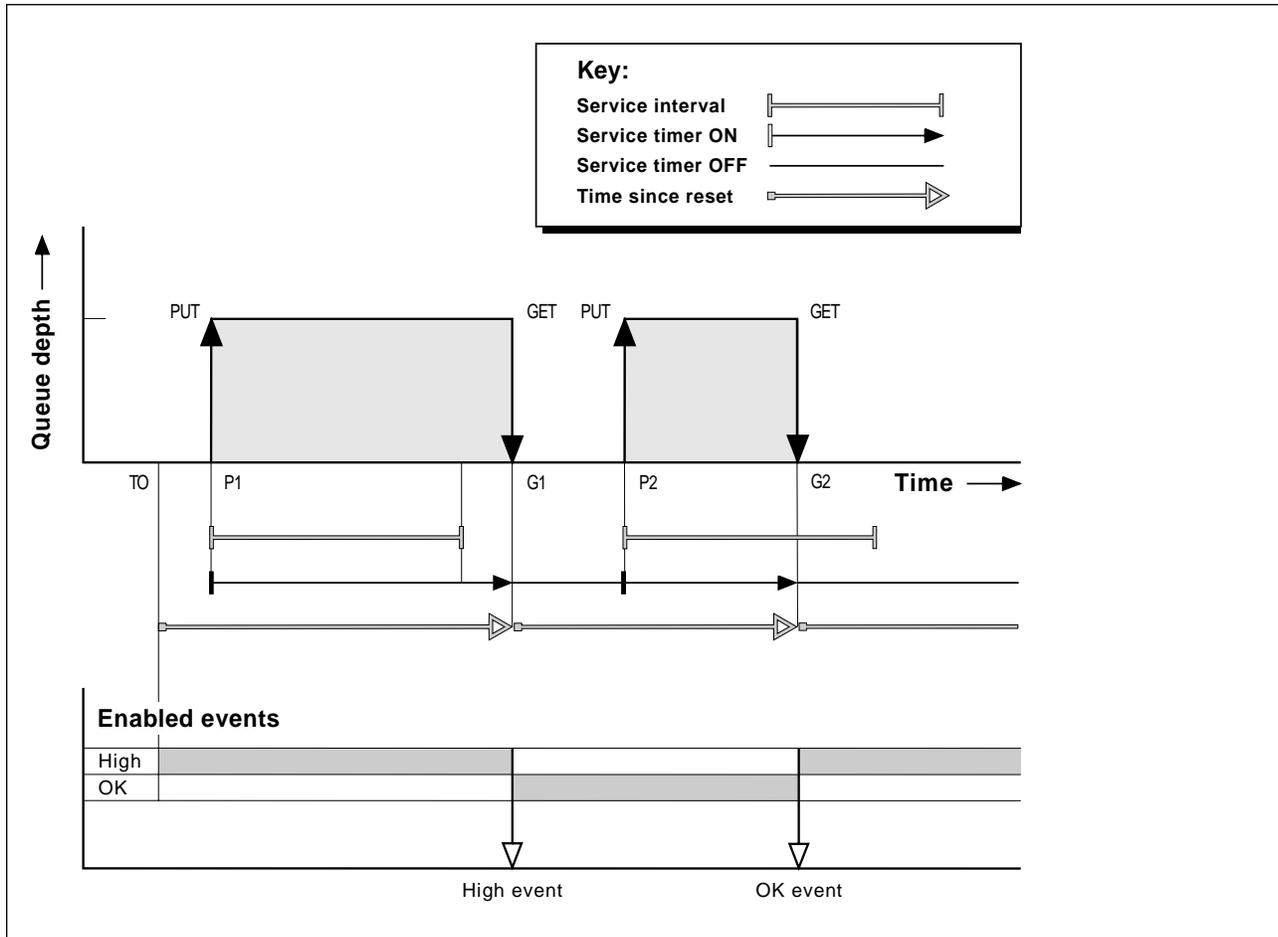


Figure 4. Queue service interval events - example 1

### Commentary

1. At  $P_1$ , an application puts a message onto an empty queue. This starts the service timer.

Note that  $T_0$  may be queue manager startup time.

2. At  $G_1$ , another application gets the message from the queue. Because the elapsed time between  $P_1$  and  $G_1$  is greater than the service interval, a Queue Service Interval High event is generated on the MQGET call at  $G_1$ . When the high event is generated, the queue manager resets the event control attribute so that:
  - a. The OK event is automatically enabled.
  - b. The high event is disabled.

Because the queue is now empty, the service timer is switched to an OFF state.

3. At  $P_2$ , a second message is put onto the queue. This restarts the service timer.

## Queue service interval events

4. At G2, the message is removed from the queue. However, because the elapsed time between P2 and G2 is less than the service interval, a Queue Service Interval OK event is generated on the MQGET call at G2. When the OK event is generated, the queue manager resets the control attribute so that:
  - a. The high event is automatically enabled.
  - b. The OK event is disabled.

Because the queue is empty, the service timer is again switched to an OFF state.

### Event statistics summary for example 1

Table 5 summarizes the event statistics for this example.

	Event 1	Event 2
Time of event	$T_{G1}$	$T_{G2}$
Type of event	High	OK
TimeSinceReset	$T_{G1} - T_0$	$T_{G2} - T_{P2}$
HighQDepth	1	1
MsgEnqCount	1	1
MsgDeqCount	1	1

The middle part of Figure 4 on page 23 shows the elapsed time as measured by the service timer compared to the service interval for that queue. To see whether a queue service interval event will occur, compare the length of the horizontal line representing the service timer (with arrow) to that of the line representing the service interval. If the service timer line is longer, and the Queue Service Interval High event is enabled, a Queue Service Interval High event will occur on the next get. If the timer line is shorter, and the Queue Service Interval OK event is enabled, a Queue Service Interval OK event will occur on the next get.

### Example 2 (queue service interval events)

This example illustrates a sequence of MQPUT calls and MQGET calls, where the queue depth is not always one or zero. It also shows instances of the timer being reset without events being generated, for example, at  $T_{P2}$ .

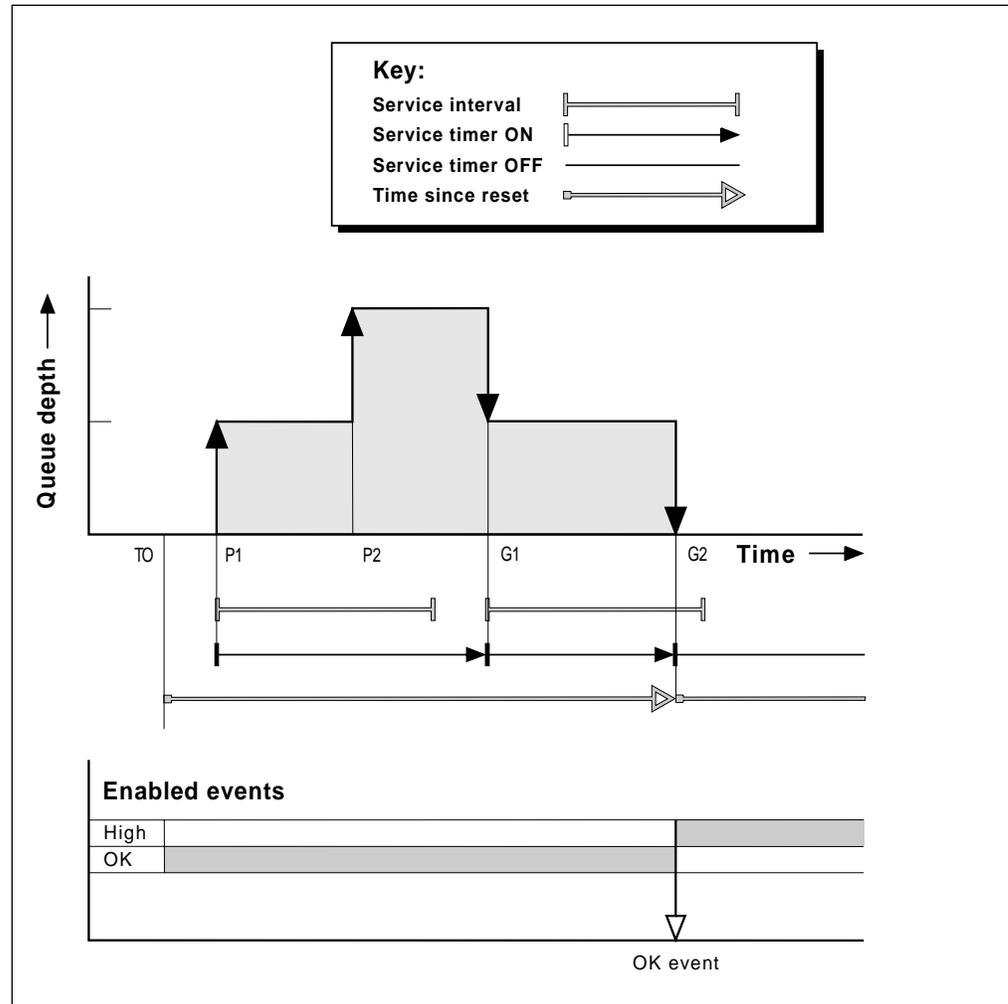


Figure 5. Queue service interval events - example 2

### Commentary

In this example, **OK events are enabled** initially and queue statistics were reset at  $T_0$ .

1. At  $P_1$ , the first put starts the service timer.
2. At  $P_2$ , the second put does not generate an event because a put cannot cause an OK event.
3. At  $G_1$ , the service interval has now been exceeded and therefore an OK event is not generated. However, the MQGET call causes the service timer to be reset.
4. At  $G_2$ , the second get occurs within the service interval and this time an OK event is generated. The queue manager resets the event control attribute so that:
  - a. The high event is automatically enabled.
  - b. The OK event is disabled.

Because the queue is now empty, the service timer is switched to an OFF state.

### Event statistics summary for example 2

Table 6 summarizes the event statistics for this example.

<i>Table 6. Event statistics summary for example 2</i>	
Time of event	$T_{G2}$
Type of event	OK
TimeSinceReset	$T_{G2} - T_0$
HighQDepth	2
MsgEnqCount	2
MsgDeqCount	2

### Example 3 (queue service interval events)

This example shows a sequence of MQGET calls and MQPUT calls that is more sporadic than the previous examples.

#### Commentary

1. At time  $T_0$ , the queue statistics are reset and Queue Service Interval High events are enabled.
2. At P1, the first put starts the service timer.
3. At P2, the second put increases the queue depth to two. A high event is not generated here because the service interval time has not been exceeded.
4. At P3, the third put causes a high event to be generated. (The timer has exceeded the service interval.) The timer is not reset because the queue depth was not zero before the put. However, OK events are enabled.
5. At G1, the MQGET call does not generate an event because the service interval has been exceeded and OK events are enabled. The MQGET call does, however, reset the service timer.
6. At G2, the MQGET call does not generate an event because the service interval has been exceeded and OK events are enabled. Again, the MQGET call resets the service timer.
7. At G3, the third get empties the queue and the service timer is *equal* to the service interval. Therefore an OK event is generated. The service timer is reset and high events are enabled. The MQGET call empties the queue, and this puts the timer in the OFF state.

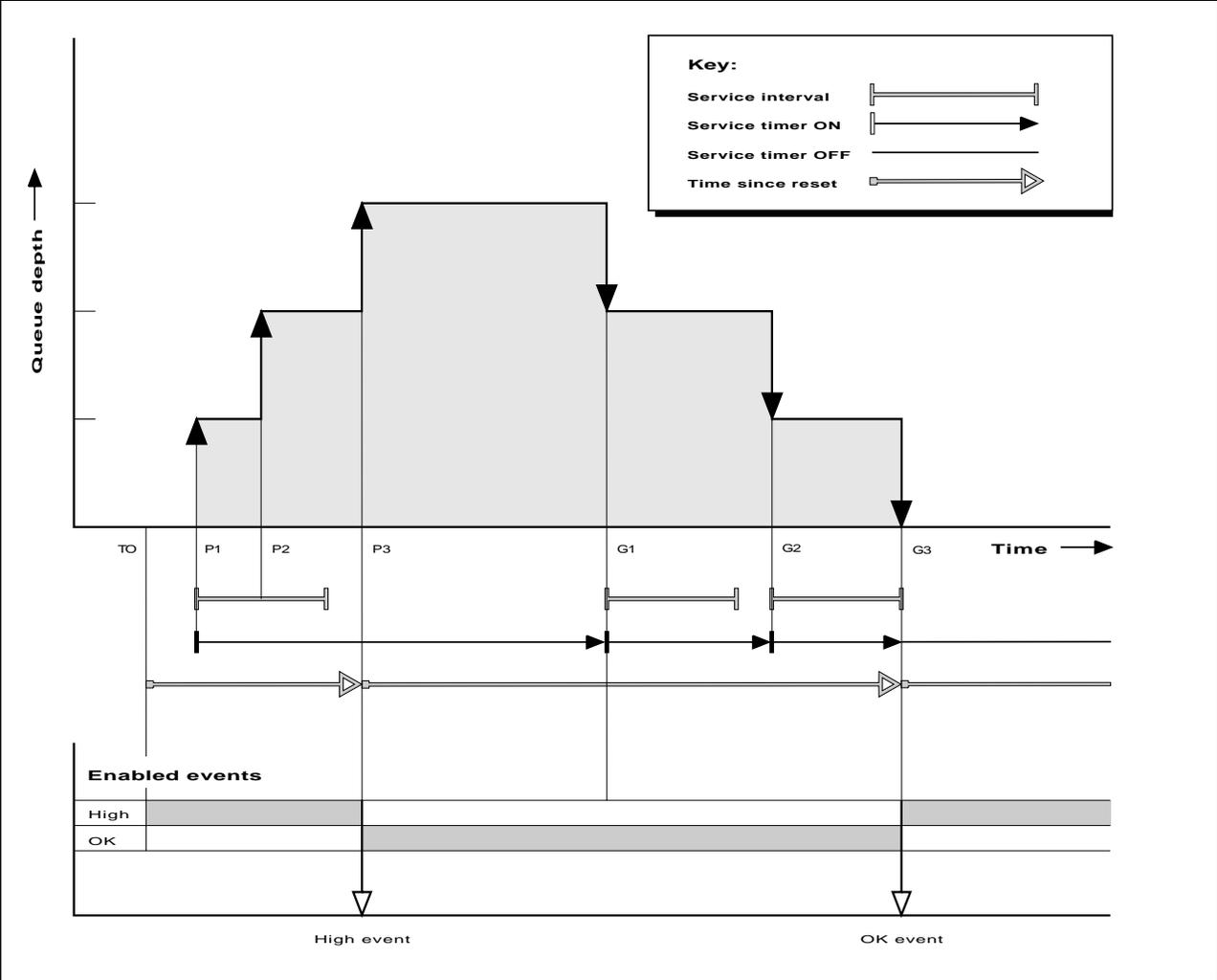


Figure 6. Queue service interval events - example 3

**Event statistics summary for example 3**

The following table summarizes the statistics returned in the event message data, for each event in this example.

Table 7. Event statistics summary for example 3		
	Event 1	Event 2
Time of event	$T_{P3}$	$T_{G3}$
Type of event	High	OK
TimeSinceReset	$T_{P3} - T_0$	$T_{G3} - T_{P3}$
HighQDepth	3	3
MsgEnqCount	3	0
MsgDeqCount	0	3

### What queue service interval events tell you

You must exercise some caution when you look at queue statistics. Figure 4 on page 23 shows a simple case where the messages are intermittent and each message is removed from the queue before the next one arrives. From the event data, you know that the maximum number of messages on the queue was one. You can, therefore, work out how long each message was on the queue.

However, in the general case, where there is more than one message on the queue and the sequence of MQGET calls and MQPUT calls is not predictable, you cannot use queue service interval events to calculate how long an individual message remains on a queue. The TimeSinceReset parameter, which is returned in the event data, can include a proportion of time when there are no messages on the queue. Therefore any results you derive from these statistics are implicitly averaged to include these times.

---

### Understanding queue depth events

In MQSeries applications it is most important that queues do not become full. If they do, applications can no longer put messages on the queue that they specify. Although the message is not lost if this occurs, it can be a considerable inconvenience. The number of messages can build up on a queue if the messages are being put onto the queue faster than the applications that process them can take them off.

The solution to this problem depends on the particular circumstances, but may involve:

- Diverting some messages to another queue.
- Starting new applications to take more messages off the queue.
- Stopping non-essential message traffic.
- Increasing the queue depth to overcome a transient maximum.

Clearly, having advanced warning that problems may be on their way makes it easier to take preventive action. For this purpose, queue depth events are provided.

### What queue depth events are

Queue depth events are related to the queue depth, that is, the number of messages on the queue. The types of queue depth events are:

- **Queue Depth High events**, which indicate that the queue depth has increased to a predefined threshold called the Queue Depth High limit.
- **Queue Depth Low events**, which indicate that the queue depth has decreased to a predefined threshold called the Queue Depth Low limit.
- **Queue Full events**, which indicate that the queue has reached its maximum depth, that is, the queue is full.

A Queue Full Event is generated when an application attempts to put a message on a queue that has reached its maximum depth. Queue Depth High events give advance warning that a queue is filling up. This means that having received this event, the system administrator should take some preventive action. If this action is successful and the queue depth drops to a 'safe' level, the queue manager can be configured to generate a Queue Depth Low event indicating an 'all clear' state.

Figure 8 on page 31 shows a graph of queue depth against time in such a case. The preventive action was (presumably) taken between  $T_2$  and  $T_3$  and continues to have effect until  $T_4$  when the queue depth is well inside the 'safe' zone.

## Enabling queue depth events

By default, all queue depth events are disabled. To configure a queue for any of the queue depth events you must:

1. Enable performance events on the queue manager, using the queue manager attribute *PerformanceEvent* (PERFMEV in MQSC).
2. Enable the event on the required queue by setting the following as required:
  - *QDepthHighEvent*(QDPHIEV in MQSC)
  - *QDepthLowEvent*(QDPLOEV in MQSC)
  - *QDepthMaxEvent*(QDPMAXEV in MQSC)
3. Set the limits, if required, to the appropriate levels, expressed as a percentage of the maximum queue depth, by setting either:
  - *QDepthHighLimit*(QDEPTHHI in MQSC), and
  - *QDepthLowLimit*(QDEPTHLO in MQSC).

### Enabling Queue Depth High events

When enabled, a Queue Depth High event is generated when a message is put on the queue, causing the queue depth to be greater than or equal to the value determined by the Queue Depth High limit.

To enable Queue Depth High events on the queue MYQUEUE with a limit set at 80%, use the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('MYQUEUE') QDEPTHHI(80) QDPHIEV(ENABLED)
```

**Automatically enabling Queue Depth High events:** A Queue Depth High event is automatically enabled by a Queue Depth Low event on the same queue.

A Queue Depth High event automatically enables both a Queue Depth Low and a Queue Full event on the same queue.

### Enabling Queue Depth Low events

When enabled, a Queue Depth Low event is generated when a message is removed from a queue by an MQGET call operation causing the queue depth to be less than or equal to the value determined by the Queue Depth Low limit.

To enable Queue Depth Low events on the queue MYQUEUE with a limit set at 20%, use the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('MYQUEUE') QDEPTHLO(20) QDPLOEV(ENABLED)
```

## Queue depth events

**Automatically enabling Queue Depth Low events:** A Queue Depth Low event is automatically enabled by a Queue Depth High event or a Queue Full event on the same queue.

A Queue Depth Low event automatically enables both a Queue Depth High and a Queue Full event on the same queue.

### Enabling Queue Full events

When enabled, a Queue Full event is generated when an application is unable to put a message onto a queue because the queue is full.

To enable Queue Full events on the queue MYQUEUE, use the following MQSC commands:

```
ALTER QMGR PERFMEV(ENABLED)
ALTER QLOCAL('MYQUEUE') QDPMAXEV(ENABLED)
```

**Automatically enabling Queue Full events:** A Queue Full event is automatically enabled by a Queue Depth High or a Queue Depth Low event on the same queue.

A Queue Full event automatically enables a Queue Depth Low event on the same queue.

---

## Queue depth events examples

This section contains some examples of queue depth events. The following examples illustrate how queue depth varies over time.

### Example 1 (queue depth events)

The queue, MYQUEUE1, has a maximum depth of 1000 messages, and the high and low queue depth limits are 80% and 20% respectively. Initially, Queue Depth High events are enabled, while the other queue depth events are disabled.

The MQSeries commands (MQSC) to configure this queue are:

```
ALTER QMGR PERFMEV(ENABLED)

DEFINE QLOCAL('MYQUEUE1') +
  MAXDEPTH(1000) +
  QDPMAXEV(DISABLED) +
  QDEPTHHI(80) +
  QDPHIEV(ENABLED) +
  QDEPTHLO(20) +
  QDPLOEV(DISABLED)
```

Figure 7. Definition of MYQUEUE1

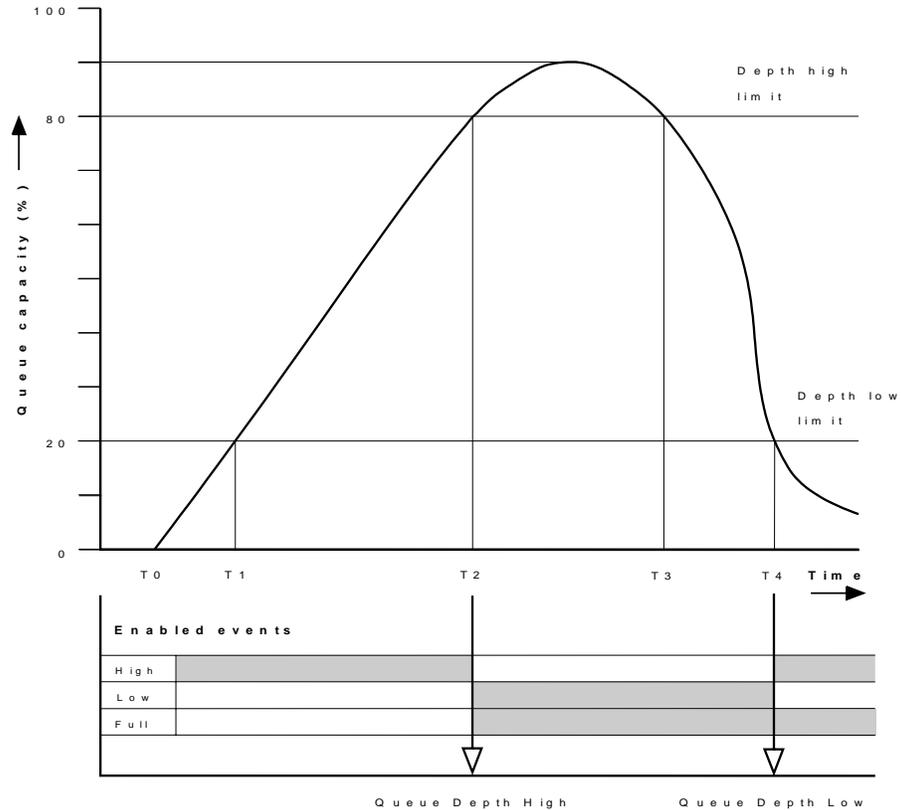


Figure 8. Queue depth events (1)

**Commentary**

Figure 8 shows how the queue depth changes over time:

- At  $T_1$ , the queue depth is increasing (more MQPUT calls than MQGET calls) and crosses the Queue Depth Low limit. No event is generated at this time.
- The queue depth continues to increase until  $T_2$ , when the depth high limit (80%) is reached and a Queue Depth High event is generated.  
This enables both Queue Full and Queue Depth Low events.
- The (presumed) preventive actions instigated by the event prevent the queue from becoming full. By time  $T_3$ , the Queue Depth High limit has been reached again, this time from above. No event is generated at this time.
- The queue depth continues to fall until  $T_4$ , when it reaches the depth low limit (20%) and a Queue Depth Low event is generated.  
This enables both Queue Full and Queue Depth High events.

Table 8 on page 32 summarizes the queue event statistics and Table 9 on page 32 summarizes which events are enabled at different times for this example.

## Queue depth events

<i>Table 8. Event statistics summary for queue depth events (example 1)</i>		
	<b>Event 2</b>	<b>Event 4</b>
Time of event	$T_2$	$T_4$
Type of event	Queue Depth High	Queue Depth Low
TimeSinceReset	$T_2 - T_0$	$T_4 - T_2$
HighQDepth (Maximum queue depth since reset)	800	900
MsgEnqCount	1157	1220
MsgDeqCount	357	1820

<i>Table 9. Summary showing which events are enabled</i>			
<b>Time period</b>	<b>Queue Depth High event</b>	<b>Queue Depth Low event</b>	<b>Queue Full event</b>
Before $T_1$	ENABLED	-	-
$T_1$ to $T_2$	ENABLED	-	-
$T_2$ to $T_3$	-	ENABLED	ENABLED
$T_3$ to $T_4$	-	ENABLED	ENABLED
After $T_4$	ENABLED	-	ENABLED

### Example 2 (queue depth events)

This is a more extensive example. However, the principles remain the same. This example assumes the use of the same queue MYQUEUE1 as defined in Figure 7 on page 30.

Table 10 on page 34 summarizes the queue event statistics and Table 11 on page 34 summarizes which events are enabled at different times for this example.

Figure 9 on page 33 shows the variation of queue depth over time.

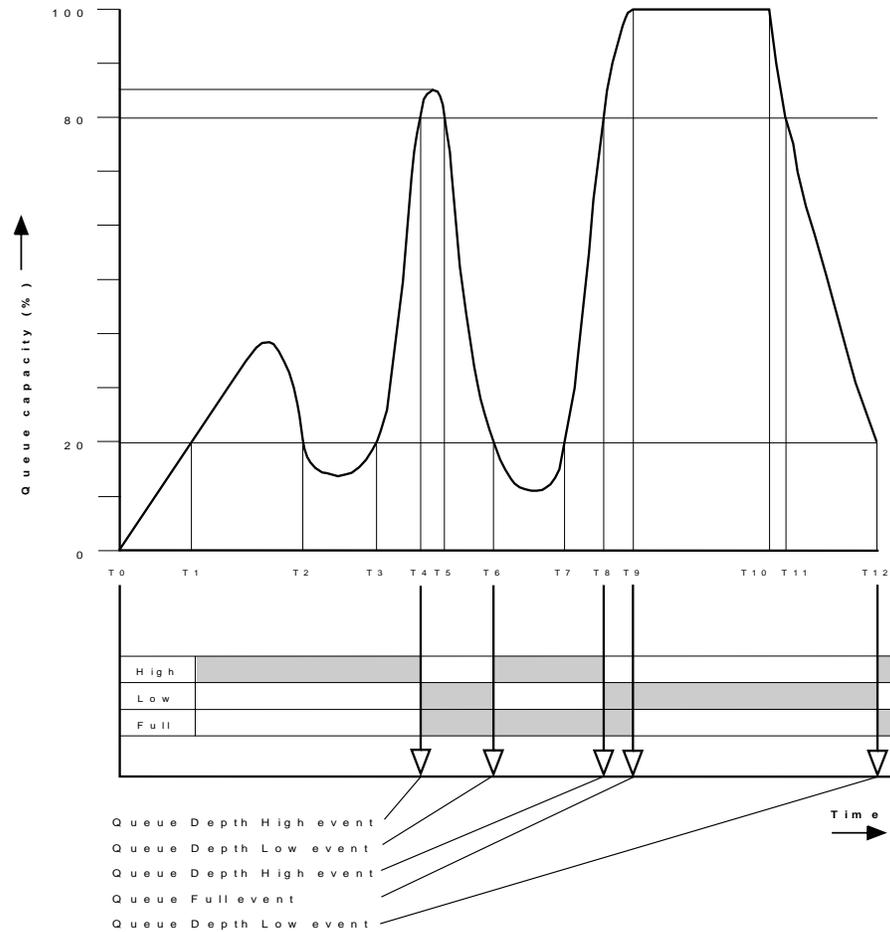


Figure 9. Queue depth events(2)

### Commentary

Some points to note are:

1. No Queue Depth Low event is generated at:
  - T<sub>1</sub> (Queue depth increasing, and not enabled)
  - T<sub>2</sub> (Not enabled)
  - T<sub>3</sub> (Queue depth increasing, and not enabled)
2. At T<sub>4</sub> a Queue Depth High event occurs. This enables both Queue Full and Queue Depth Low events.
3. At T<sub>9</sub> a Queue Full event occurs **after** the first message that cannot be put on the queue because the queue is full.
4. At T<sub>12</sub> a Queue Depth Low event occurs.

### Event statistics summary (example 2)

*Table 10. Event statistics summary for queue depth events (example 2)*

	Event 4	Event 6	Event 8	Event 9	Event 12
Time of event	$T_4$	$T_6$	$T_8$	$T_9$	$T_{12}$
Type of event	Queue Depth High	Queue Depth Low	Queue Depth High	Queue Full	Queue Depth Low
TimeSinceReset	$T_4 - T_0$	$T_6 - T_4$	$T_8 - T_6$	$T_9 - T_8$	$T_{12} - T_9$
HighQDepth	800	855	800	1000	1000
MsgEnqCount	1645	311	1377	324	221
MsgDeqCount	845	911	777	124	1021

*Table 11. Summary showing which events are enabled*

Time period	Queue Depth High event	Queue Depth Low event	Queue Full event
$T_0$ to $T_4$	ENABLED	-	-
$T_4$ to $T_6$	-	ENABLED	ENABLED
$T_6$ to $T_8$	ENABLED	-	ENABLED
$T_8$ to $T_9$	-	ENABLED	ENABLED
$T_9$ to $T_{12}$	-	ENABLED	-
After $T_{12}$	ENABLED	-	ENABLED

**Note:** Events are out of syncpoint, therefore you could have an empty queue, then fill it up causing an event, then roll back all of the messages under the control of a syncpoint manager. However, event enabling has been automatically set, so that the next time the queue fills up, no event is generated.

## Enabling performance events summary

<i>Table 12. Enabling performance events using MQSC</i>	
<b>Queue depth event</b>	<b>Queue attributes</b>
Queue depth high	QDPHIEV (ENABLED) QDEPTHHI ( <i>hh</i> )
Queue depth low	QDPLOEV (ENABLED) QDEPTHLO ( <i>ll</i> )
Queue full	QDPMAXEV (ENABLED)
<b>Queue service interval event</b>	<b>Queue attributes</b>
Queue Service Interval High Queue Service Interval OK No queue service interval events	QSVCI EV (HIGH) QSVCI EV (OK) QSVCI EV (NONE)
Service interval	QSVCI NT ( <i>tt</i> )
<p><b>Notes:</b></p> <p>All performance events must be enabled using the queue manager attribute PERFMEV.</p> <p><b>Numeric values</b></p> <p><i>hh</i> Queue depth high limit. <i>ll</i> Queue depth low limit. (Both values are expressed as a percentage of the maximum queue depth, which is specified by the queue attribute MAXDEPTH.)</p> <p><i>tt</i> Service interval time in milliseconds.</p>	

<i>Table 13. Enabling performance events using PCF commands</i>		
<b>Attribute</b>	<b>Parameter</b>	<b>Value</b>
QDepthHighEvent QDepthHighLimit	MQIA_Q_DEPTH_HIGH_EVENT MQIA_Q_DEPTH_HIGH_LIMIT	MQEV R_ENABLED <i>hh</i>
QDepthLowEvent QDepthLowLimit	MQIA_Q_DEPTH_LOW_EVENT MQIA_Q_DEPTH_LOW_LIMIT	MQEV R_ENABLED <i>ll</i>
QDepthMaxEvent	MQIA_Q_DEPTH_MAX_EVENT	MQEV R_ENABLED
QServiceIntervalEvent	MQIA_Q_SERVICE_INTERVAL_EVENT	MQQSIE_HIGH MQQSIE_OK MQQSIE_NONE
QServiceInterval	MQIA_Q_SERVICE_INTERVAL	<i>tt</i>
<p><b>Notes:</b></p> <p>All performance events must be enabled using the queue manager attribute <i>PerformanceEvent</i>.</p> <p><b>Numeric values</b></p> <p><i>hh</i> Queue depth high limit. <i>ll</i> Queue depth low limit. (Both values are expressed as a percentage of the maximum queue depth, which is specified by the queue attribute <i>MaxQDepth</i>)</p> <p><i>tt</i> Service interval time in milliseconds.</p>		

## Summary

---

## Chapter 4. Event message reference

This chapter describes the information returned in the event message for each instrumentation event.

It provides an overview of the event message format and descriptions of the parameters returned in the event messages for each event.

The chapter includes:

- “Event message formats” on page 38
- “MQMD (Message descriptor)” on page 40
- “MQCFH (PCF header)” on page 41
- “Event message data” on page 42
- “Alias Base Queue Type Error” on page 43
- “Bridge Started” on page 45
- “Bridge Stopped” on page 47
- “Channel Activated” on page 49
- “Channel Auto-definition Error” on page 51
- “Channel Auto-definition OK” on page 53
- “Channel Conversion Error” on page 55
- “Channel Started” on page 60
- “Channel Stopped” on page 62
- “Channel Stopped By User” on page 66
- “Default Transmission Queue Type Error” on page 68
- “Default Transmission Queue Usage Error” on page 70
- “Get Inhibited” on page 72
- “Not Authorized (type 1)” on page 74
- “Not Authorized (type 2)” on page 76
- “Not Authorized (type 3)” on page 78
- “Not Authorized (type 4)” on page 80
- “Put Inhibited” on page 82
- “Queue Depth High” on page 84
- “Queue Depth Low” on page 86
- “Queue Full” on page 88
- “Queue Manager Active” on page 90
- “Queue Manager Not Active” on page 91
- “Queue Service Interval High” on page 92
- “Queue Service Interval OK” on page 94
- “Queue Type Error” on page 96
- “Remote Queue Name Error” on page 98
- “Transmission Queue Type Error” on page 100
- “Transmission Queue Usage Error” on page 102
- “Unknown Alias Base Queue” on page 104
- “Unknown Default Transmission Queue” on page 106
- “Unknown Object Name” on page 108
- “Unknown Remote Queue Manager” on page 110
- “Unknown Transmission Queue” on page 113

### Event message formats

Event messages are standard MQSeries messages containing a message descriptor and message data.

Table 14 on page 39 shows the basic structure of these messages, and the names of the fields in an event message for queue service interval events.

In general, you need only a subset of this information for any system management programs that you write. For example, your application might need the following data:

- The name of the application causing the event
- The name of the queue manager on which the event occurred
- The queue on which the event was generated
- The event statistics

### Message descriptors in event messages

The format of the message descriptor is defined by the MQSeries MQMD data structure, which is found in all MQSeries messages and is described in “MQMD - Message descriptor” in the *MQSeries Application Programming Reference* manual. The message descriptor contains information that can be used by a user-written system monitoring application. For example:

- The message type
- The format type
- The date and time that the message was put on the event queue

In particular, the information in the descriptor informs a system management application that the message type is MQMT\_DATAGRAM, and the message format is MQFMT\_EVENT.

In an event message, many of these fields contain fixed data, which is supplied by the queue manager that generated the message. The fields that make up the MQMD structure are described in “MQMD (Message descriptor)” on page 40, and also “Message descriptor for a PCF command” on page 131. The MQMD also specifies the name of the queue manager (truncated to 28 characters) that put the message, and the date and time that the event message was put on the event queue.

Table 14. Event message structure for queue service interval events		
Message descriptor	Message data	
MQMD structure <sup>1</sup>	Event header MQCFH structure <sup>2</sup>	Event data <sup>3</sup>
Structure identifier Structure version Report options Message type Expiration time Feedback code Encoding Coded character set ID Message format Message priority Persistence Message identifier Correlation identifier Backout count Reply-to queue Reply-to queue manager User identifier Accounting token Application identity data Application type Application name Put date Put time Application origin data Group identifier Message sequence number Offset Message flags Original length	Structure type Structure length Structure version number Command identifier (event type) Message sequence number Control options Completion code Reason code (MQRC_*) Parameter count	Queue manager name Queue name Time since last reset Maximum number of messages on the queue Number of messages put on the queue Number of messages taken off the queue
<b>Notes:</b> <ol style="list-style-type: none"> <li>1. MQMD is the standard structure for MQSeries message headers.</li> <li>2. MQCFH is the standard structure for an event header. This is the same as the PCF header structure.</li> <li>3. The parameters shown are those returned for a queue service interval event. The actual event data depends on the specific event.</li> </ol>		

## Message data in event messages

The event message data is based on the programmable command format (PCF) that is used in PCF command inquiries and responses. If you do not know about PCF commands, see Chapter 6, "Introduction to Programmable Command Formats" on page 127 for information.

The event message consists of two parts: the event header and the event data (see Table 14). The event header structure, MQCFH, is described in "MQCFH (PCF header)" on page 41 and "MQCFH - PCF header" on page 388.

## Message descriptor

### Event header

The information in MQCFH specifies:

- If the message is an event message.
- The category of event, that is, whether the event is a queue manager, performance, or channel event.
- A reason code specifying the cause of the event. For events caused by MQI calls, this reason code is the same as the reason code for the MQI call.

Reason codes have names that begin with the characters MQRC\_. For example, the reason code MQRC\_PUT\_INHIBITED is generated when an application attempts to put a message on a queue that is not enabled for puts.

### Event message data

The event message data contains information specific to the event. This includes the name of the queue manager and, where appropriate, the name of the queue.

The data structures returned depend on which particular event was generated. In addition, for some events, certain of the structures are optional, and are returned only if they contain information that is relevant to the circumstances giving rise to the event. The values in the data structures depend on the circumstances that caused the event to be generated.

**Note:** The event structures in the event data are not returned in a defined order. They must be identified from the parameter identifiers shown in the description.

---

## MQMD (Message descriptor)

The MQMD structure describes the information that accompanies the message data of an event message. In this list, the strings in parentheses next to the parameter name are the data types of each parameter. These are described in Chapter 1, “Data type descriptions - elementary” in the *MQSeries Application Programming Reference* manual.

For an event, the MQMD structure contains these values:

Parameter	Value
<i>StrucId</i> (MQCHAR4)	MQMD_STRUC_ID
<i>Version</i> (MQLONG)	MQMD_VERSION_1 or MQMD_VERSION_2
<i>Report</i> (MQLONG)	MQRO_NONE
<i>MsgType</i> (MQLONG)	MQMT_DATAGRAM
<i>Expiry</i> (MQLONG)	MQEI_UNLIMITED
<i>Feedback</i> (MQLONG)	MQFB_NONE
<i>Encoding</i> (MQLONG)	Encoding of the queue manager generating the event.
<i>CodedCharSetId</i> (MQLONG)	Coded character set ID (CCSID) of the queue manager generating the event.
<i>Format</i> (MQCHAR8)	MQFMT_EVENT
<i>Priority</i> (MQLONG)	Default priority of the event queue, if it is a local queue, or its local definition at the queue manager generating the event.
<i>Persistence</i> (MQLONG)	Default persistence of the event queue, if it is a local queue, or its local definition at the queue manager generating the event.
<i>MsgId</i> (MQBYTE24)	The value is uniquely generated by the queue manager.
<i>CorrelId</i> (MQBYTE24)	MQCI_NONE
<i>BackoutCount</i> (MQLONG)	Always 0.
<i>ReplyToQ</i> (MQCHAR48)	Always blank.

<i>ReplyToQMgr</i> (MQCHAR48)	The queue manager name at the originating system.
<i>UserIdentifier</i> (MQCHAR12)	Always blank.
<i>AccountingToken</i> (MQBYTE32)	MQACT_NONE
<i>ApplIdentityData</i> (MQCHAR32)	Always blank.
<i>PutApplType</i> (MQLONG)	Type of application that put the message: MQAT_QMGR for a local event queue.
<i>PutApplName</i> (MQCHAR28)	Name of application that put the message.
<i>PutDate</i> (MQCHAR8)	Date when message was put, generated by the queue manager.
<i>PutTime</i> (MQCHAR8)	Time when message was put, generated by the queue manager.
<i>ApplOriginData</i> (MQCHAR4)	Always blank.

If *Version* is MQMD\_VERSION\_2, the following additional fields are present:

Parameter	Value
<i>GroupId</i> (MQBYTE24)	MQGI_NONE
<i>MsgSeqNumber</i> (MQLONG)	Always 1.
<i>Offset</i> (MQLONG)	Always 0.
<i>MsgFlags</i> (MQLONG)	MQMF_NONE
<i>OriginalLength</i> (MQLONG)	MQOL_UNDEFINED

---

## MQCFH (PCF header)

The MQCFH structure is the event header, which has the same format as all PCF headers. In this list, the strings in parentheses next to the parameter name are the structure types of each parameter. These are described in Chapter 1, “Data type descriptions - elementary” in the *MQSeries Application Programming Reference* manual.

For an event, the MQCFH structure contains these values:

Parameter	Value
<i>Type</i> (MQLONG)	MQCFT_EVENT
<i>StrucLength</i> (MQLONG)	MQCFH_STRUC_LENGTH
	Length of command format header structure.
<i>Version</i> (MQLONG)	MQCFH_VERSION_1
<i>Command</i> (MQLONG)	Command identifier, identifies the category of event as one of:
	MQCMD_Q_MGR_EVENT (Queue manager event)
	MQCMD_PERFM_EVENT (Performance event)
	MQCMD_CHANNEL_EVENT (Channel event)
<i>MsgSeqNumber</i> (MQLONG)	Always 1.
<i>Control</i> (MQLONG)	MQCFC_LAST
	Last message in the group.
<i>CompCode</i> (MQLONG)	Completion code, one of:
	MQCC_OK (Event reporting OK condition)
	MQCC_WARNING (Event reporting warning condition) all events have this completion code, unless otherwise specified.
<i>Reason</i> (MQLONG)	Reason code identifying event. Depends on the event being reported.
	<b>Note:</b> Events with the same reason code are further identified by the <i>ReasonQualifier</i> parameter in the event data.
<i>ParameterCount</i> (MQLONG)	The number of parameter structures that follow the MQCFH structure.

## Event message data

### Notes to users

1. The events described in the reference section are available on all platforms, unless specific limitations are shown at the start of an event.
2. In the event message reference that follows, the strings in parentheses next to the parameter name are the structure types of each parameter. These are described in Chapter 9, "Structures used for commands and responses" on page 387.
3. Version 2.0 of MQSeries for Windows does not generate MQSeries events.

Use the following table to locate information about a particular event message:

<i>Table 15. Event message data summary</i>		
<b>Event type</b>	<b>Event name</b>	<b>page</b>
<b>Authority events</b>	Not Authorized (type 1)	74
	Not Authorized (type 2)	76
	Not Authorized (type 3)	78
	Not Authorized (type 4)	80
<b>Channel events</b>	Channel Activated	49
	Channel Auto-Definition Error	51
	Channel Auto-Definition OK	53
	Channel Conversion Error	55
	Channel Not Activated	58
	Channel Started	60
	Channel Stopped	62
	Channel Stopped By User	66
<b>IMS Bridge events</b>	Bridge Started	45
	Bridge Stopped	47
<b>Inhibit events</b>	Get Inhibited	72
	Put Inhibited	82
<b>Local events</b>	Alias Base Queue Type Error	43
	Unknown Alias Base Queue	104
	Unknown Object Name	108
<b>Performance events</b>	Queue Depth High	84
	Queue Depth Low	86
	Queue Full	88
	Queue Service Interval High	92
	Queue Service Interval OK	94
<b>Remote events</b>	Default Transmission Queue Type Error	68
	Default Transmission Queue Usage Error	70
	Queue Type Error	96
	Remote Queue Name Error	98
	Transmission Queue Type Error	100
	Transmission Queue Usage Error	102
	Unknown Default Transmission Queue	106
	Unknown Remote Queue Manager	110
Unknown Transmission Queue	113	
<b>Start and stop events</b>	Queue Manager Active	90
	Queue Manager Not Active	91

## Alias Base Queue Type Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_ALIAS\_BASE\_Q\_TYPE\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, BaseQName, QType, ApplType, ApplName*

**Returned optionally:**

*ObjectQMGrName*

#### Event header

*Reason* (MQLONG)

Reason code identifying the event.

The value is:

MQRC\_ALIAS\_BASE\_Q\_TYPE\_ERROR

(2001, X'7D1') Alias base queue not a valid type.

An MQOPEN or MQPUT1 call was issued specifying an alias queue as the destination, but the *BaseQName* in the alias queue definition resolves to a queue that is not a local queue, or local definition of a remote queue.

#### Event data

*QMGrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is

MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*BaseQName* (MQCFST)

Queue name to which the alias resolves (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

## Alias Base Queue Type Error

### *QType* (MQCFIN)

Type of queue to which the alias resolves (parameter identifier: MQIA\_Q\_TYPE).

The value can be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_MODEL

Model queue definition.

### *AppType* (MQCFIN)

Type of the application making the call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

### *AppName* (MQCFST)

Name of the application making the call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than the client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

## Bridge Started

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is produced on MQSeries for OS/390 only.

## Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_BRIDGE\_STARTED
- Event data

## Event data summary

### **Always returned:**

*QMgrName, BridgeType, BridgeName*

### **Returned optionally:**

None

### **Event header**

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_BRIDGE\_STARTED

(2125, X'84D') Bridge started.

The IMS bridge has been started.

### **Event data**

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*BridgeType* (MQCFIN)

Bridge type (parameter identifier: MQIACF\_BRIDGE\_TYPE).

The value is:

MQBT\_OTMA

OTMA bridge.

*BridgeName* (MQCFST)

Bridge name (parameter identifier: MQCACF\_BRIDGE\_NAME).

For bridges of type MQBT\_OTMA, the name is of the form XCFgroupXCFmember, where XCFgroup is the XCF group name to which both IMS and MQSeries belong. XCFmember is the XCF

## Bridge Started

member name of the IMS system. The maximum length of the string is MQ\_BRIDGE\_NAME\_LENGTH.

## Bridge Stopped

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is produced on MQSeries for OS/390 only.

## Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_BRIDGE\_STOPPED
- Event data

## Event data summary

### **Always returned:**

*QMgrName*, *ReasonQualifier*, *BridgeType*, *BridgeName*

### **Returned optionally:**

*ErrorIdentifier*,

### **Event header**

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_BRIDGE\_STOPPED

(2126, X'84E ') Bridge stopped.

The IMS bridge has been stopped.

### **Event data**

*QMgrName* (MQCFST)

The name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier that qualifies the reason code (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value is one of the following:

MQRQ\_BRIDGE\_STOPPED\_OK

Bridge has been stopped with either a zero return code or a warning return code.

For MQBT\_OTMA bridges, one side or the other issued a normal IXCLEAVE request.

MQRQ\_BRIDGE\_STOPPED\_ERROR

Bridge has been stopped but there is an error reported.

## Bridge Stopped

### *BridgeType* (MQCFIN)

Bridge type (parameter identifier: MQIACF\_BRIDGE\_TYPE).

The value is:

MQBT\_OTMA  
OTMA bridge.

### *BridgeName* (MQCFST)

Bridge name (parameter identifier: MQCACF\_BRIDGE\_NAME).

For bridges of type MQBT\_OTMA, the name is of the form XCFgroupXCFmember, where XCFgroup is the XCF group name to which both IMS and MQSeries belong. XCFmember is the XCF member name of the IMS system. The maximum length of the string is MQ\_BRIDGE\_NAME\_LENGTH.

### *ErrorIdentifier* (MQCFIN)

Identifier of the cause of the error (parameter identifier: MQIACF\_ERROR\_IDENTIFIER).

When a bridge is stopped due to an error, this is the code that identifies the error. If the event message is because of a bridge stop failure, the following fields are set:

- The IMS sense code.

---

## Channel Activated

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using CICS for distributed queue management in MQSeries for OS/390.

## Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_ACTIVATED
- Event data

## Event data summary

### **Always returned:**

*QMgrName, ChannelName,*

### **Returned optionally:**

*XmitQName, ConnectionName*

### **Event header**

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_ACTIVATED

(2295, X'8F7') Channel activated.

This condition is detected when a channel, which has been waiting to become active, and for which a Channel Not Activated event has been generated, is now able to become active, because an active slot has been released by another channel.

This event is not generated for a channel which is able to become active without waiting for an active slot to be released.

### **Event data**

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

## Channel Activated

### *ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

This is applicable to sender, server, cluster-sender, and cluster-receiver channel types only.

### *ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

For TCP this is the internet address only if the channel has successfully established a connection. Otherwise it is the contents of the *ConnectionName* field in the channel definition.

This is not returned for commands containing a generic name.

## Channel Auto-definition Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is produced if you are using MQSeries for OS/390 without using CICS for distributed queuing, MQSeries for AS/400 V4R2 or later, or any MQSeries Version 5.1 product only.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_AUTO\_DEF\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, ChannelName, ChannelType, ErrorIdentifier, ConnectionName*

**Returned optionally:**

*AuxErrorDataInt1*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_AUTO\_DEF\_ERROR

(2234, X'8BA') Automatic channel definition failed.

This condition is detected when the automatic definition of a channel fails; this may be because an error occurred during the definition process, or because the channel automatic-definition exit inhibited the definition. Additional information is returned in the event message indicating the reason for the failure.

#### Event data

*QMgrName* (MQCFST)

The name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

Specifies the name of the channel for which the auto-definition has failed.

## Channel Auto-definition Error

The maximum length of the string is  
MQ\_CHANNEL\_NAME\_LENGTH.

### *ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

Specifies the type of the channel for which the auto-definition has failed.

The value is one of the following:

MQCHT\_RECEIVER

Receiver.

MQCHT\_SVRCONN

Server-connection (for use by clients).

MQCHT\_CLUSSDR

Cluster-sender.

### *ErrorIdentifier* (MQCFIN)

Identifier of the cause of the error (parameter identifier:  
MQIACF\_ERROR\_IDENTIFIER).

This contains the reason code (MQRC\_\* or MQRCCF\_\*) resulting from the channel definition attempt, or else the value MQRCCF\_SUPPRESSED\_BY\_EXIT if the attempt to create the definition was disallowed by the exit.

### *ConnectionName* (MQCFST)

Connection name (parameter identifier:  
MQCACH\_CONNECTION\_NAME).

Name of partner attempting to establish connection.

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

### *AuxErrorDataInt1* (MQCFIN)

Auxiliary error data (parameter identifier:  
MQIACF\_AUX\_ERROR\_DATA\_INT\_1).

This is present only if *ErrorIdentifier* contains MQRCCF\_SUPPRESSED\_BY\_EXIT. It contains the value returned by the exit in the *Feedback* field of the MQCXP to indicate why the auto definition has been disallowed.

## Channel Auto-definition OK

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is produced if you are using MQSeries for OS/390 without using CICS for distributed queuing, MQSeries for AS/400 V4R2 or later, or any MQSeries Version 5.1 product only.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_AUTO\_DEF\_OK
- Event data

### Event data summary

**Always returned:**

*QMgrName, ChannelName, ChannelType, ConnectionName*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_AUTO\_DEF\_OK

(2233, X'8B9') Automatic channel definition succeeded.

This condition is detected when the automatic definition of a channel is successful. The channel is defined by the MCA.

#### Event data

*QMgrName* (MQCFST)

The name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

Specifies the name of the channel being defined.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

## Channel Auto-definition OK

### *ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

Specifies the type of channel being defined.

The value is one of the following:

MQCHT\_RECEIVER

Receiver.

MQCHT\_SVRCONN

Server-connection (for use by clients).

MQCHT\_CLUSSDR

Cluster-sender.

### *ConnectionName* (MQCFST)

Connection name (parameter identifier:

MQCACH\_CONNECTION\_NAME).

Name of partner attempting to establish connection.

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

## Channel Conversion Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using CICS for distributed queue management in MQSeries for OS/390.

**Note:** MQSeries for Windows V2.1 **does not** define the channel event queue for you, so the default action is **not to generate channel events**. This is because, once you have defined a channel event queue, you cannot stop channel event messages being generated. If you want MQ to generate channel events, you must define the channel event queue yourself using the name SYSTEM.ADMIN.CHANNEL.EVENT.

## Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_CONV\_ERROR
- Event data

## Event data summary

### **Always returned:**

*QMgrName*, *ConversionReasonCode*, *ChannelName*, *Format*, *ConnectionName*,  
*XmitQName*

### **Returned optionally:**

None

## Event header

*Reason* (MQLONG)

Name of the reason code generating the event.

The value is:

MQRC\_CHANNEL\_CONV\_ERROR

(2284, X'8EC') Channel conversion error.

This condition is detected when a channel is unable to do data conversion and the MQGET call to get a message from the transmission queue resulted in a data conversion error. The conversion reason code identifies the reason for the failure.

## Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

## Channel Conversion Error

### *ConversionReasonCode* (MQCFIN)

Identifier of the cause of the conversion error (parameter identifier: MQIACF\_CONV\_REASON\_CODE).

The value can be one of the following:

MQRC\_CONVERTED\_MSG\_TOO\_BIG  
(2120, X'848') Converted message too big for application buffer.

MQRC\_FORMAT\_ERROR  
(2110, X'83E') Message format not valid.

MQRC\_NOT\_CONVERTED  
(2119, X'847') Application message data not converted.

MQRC\_SOURCE\_CCSDID\_ERROR  
(2111, X'83F') Source coded character set identifier not valid.

MQRC\_SOURCE\_DECIMAL\_ENC\_ERROR  
(2113, X'841') Packed-decimal encoding in message not recognized.

MQRC\_SOURCE\_FLOAT\_ENC\_ERROR  
(2114, X'842') Floating-point encoding in message not recognized.

MQRC\_SOURCE\_INTEGER\_ENC\_ERROR  
(2112, X'840') Integer encoding in message not recognized.

MQRC\_TARGET\_CCSDID\_ERROR  
(2115, X'843') Target coded character set identifier not valid.

MQRC\_TARGET\_DECIMAL\_ENC\_ERROR  
(2117, X'845') Packed-decimal encoding specified by receiver not recognized.

MQRC\_TARGET\_FLOAT\_ENC\_ERROR  
(2118, X'846') Floating-point encoding specified by receiver not recognized.

MQRC\_TARGET\_INTEGER\_ENC\_ERROR  
(2116, X'844') Integer encoding specified by receiver not recognized.

MQRC\_TRUNCATED\_MSG\_ACCEPTED  
(2079, X'81F') Truncated message returned (processing completed).

MQRC\_TRUNCATED\_MSG\_FAILED  
(2080, X'820') Truncated message returned (processing not completed).

### *ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is  
MQ\_CHANNEL\_NAME\_LENGTH.

*Format* (MQCFST)

Name of format (parameter identifier:  
MQCACH\_FORMAT\_NAME).

The maximum length of the string is MQ\_FORMAT\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier:  
MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ConnectionName* (MQCFST)

Connection name (parameter identifier:  
MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

For TCP this is the internet address only if the channel has successfully established a connection. Otherwise it is the contents of the *ConnectionName* field in the channel definition.

---

### Channel Not Activated

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using CICS for distributed queue management in MQSeries for OS/390.

**Note:** MQSeries for Windows V2.1 **does not** define the channel event queue for you, so the default action is **not to generate channel events**. This is because, once you have defined a channel event queue, you cannot stop channel event messages being generated. If you want MQ to generate channel events, you must define the channel event queue yourself using the name SYSTEM.ADMIN.CHANNEL.EVENT.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_NOT\_ACTIVATED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ChannelName*

**Returned optionally:**

*XmitQName, ConnectionName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_NOT\_ACTIVATED

(2296, X'8F8') Channel cannot be activated.

This condition is detected when a channel is required to become active, either because it is starting, or because it is about to make another attempt to establish connection with its partner. However, it is unable to do so because the limit on the number of active channels has been reached. See the:

- MaxActiveChannels parameter in the qm.ini file for OS/2, AIX, HP-UX, and Sun Solaris.
- MaxActiveChannels parameter in the Registry for Windows NT.
- ACTCHL parameter in CSQXPARM for OS/390.

The channel waits until it is able to take over an active slot released when another channel ceases to be active. At that time a Channel Activated event is generated.

### Event data

#### *QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

#### *ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

#### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

This is applicable to sender, server, cluster-sender, and cluster-receiver channel types only.

#### *ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

For TCP this is the Internet address only if the channel has successfully established a connection. Otherwise it is the contents of the *ConnectionName* field in the channel definition.

This is not returned for commands containing a generic name.

---

### Channel Started

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using CICS for distributed queue management in MQSeries for OS/390. Client connections on MQSeries for OS/390 or MQSeries Version 5 products do not produce this event.

**Note:** MQSeries for Windows V2.1 **does not** define the channel event queue for you, so the default action is **not to generate channel events**. This is because, once you have defined a channel event queue, you cannot stop channel event messages being generated. If you want MQ to generate channel events, you must define the channel event queue yourself using the name SYSTEM.ADMIN.CHANNEL.EVENT.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_STARTED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ChannelName*

**Returned optionally:**

*XmitQName, ConnectionName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_STARTED

(2282, X'8EA') Channel started.

Either

- An operator has issued a Start Channel command, or
- An instance of a channel has been successfully established.

This condition is detected when Initial Data negotiation is complete and resynchronization has been performed where necessary such that message transfer can proceed.

**Event data***QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

This is applicable to sender, server, cluster-sender, and cluster-receiver channel types only.

*ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

For TCP this is the Internet address only if the channel has successfully established a connection. Otherwise it is the contents of the *ConnectionName* field in the channel definition.

This is not returned for commands containing a generic name.

---

### Channel Stopped

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using CICS for distributed queue management in MQSeries for OS/390. Client connections on MQSeries for OS/390 or MQSeries Version 5 products do not produce this event.

**Note:** MQSeries for Windows V2.1 **does not** define the channel event queue for you, so the default action is **not to generate channel events**. This is because, once you have defined a channel event queue, you cannot stop channel event messages being generated. If you want MQ to generate channel events, you must define the channel event queue yourself using the name SYSTEM.ADMIN.CHANNEL.EVENT.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_STOPPED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ReasonQualifier, ChannelName, ErrorIdentifier, AuxErrorDataInt1, AuxErrorDataInt2, AuxErrorDataStr1, AuxErrorDataStr2, AuxErrorDataStr3*

**Returned optionally:**

*XmitQName, ConnectionName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_STOPPED

(2283, X'8EB') Channel stopped.

This condition is detected when the channel has been stopped. The reason qualifier identifies the reasons for stopping.

#### Event data

*QMgrName* (MQCFST)

The name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier that qualifies the reason code (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value is one of the following:

## MQRQ\_CHANNEL\_STOPPED\_OK

Channel has been closed with either a zero return code or a warning return code.

## MQRQ\_CHANNEL\_STOPPED\_ERROR

Channel has been closed but there is an error reported and the channel is not in stopped or retry state.

## MQRQ\_CHANNEL\_STOPPED\_RETRY

Channel has been closed and it is in retry state.

## MQRQ\_CHANNEL\_STOPPED\_DISABLED

Channel has been closed and it is in a stopped state.

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*ErrorIdentifier* (MQCFIN)

Identifier of the cause of the error (parameter identifier: MQIACF\_ERROR\_IDENTIFIER).

When a channel is stopped due to an error, this is the code that identifies the error. If the event message is because of a channel stop failure, the following fields are set:

1. *ReasonQualifier*, containing the value MQRQ\_CHANNEL\_STOPPED\_ERROR
2. *ErrorIdentifier*, containing the code number of an error message that describes the error
3. *AuxErrorDataInt1*, containing error message integer insert 1
4. *AuxErrorDataInt2*, containing error message integer insert 2
5. *AuxErrorDataStr1*, containing error message string insert 1
6. *AuxErrorDataStr2*, containing error message string insert 2
7. *AuxErrorDataStr3*, containing error message string insert 3

The meanings of the error message inserts depend on the code number of the error message. Details of error-message code numbers and the inserts for specific platforms can be found as follows:

- For OS/390, see the section “Distributed queuing message codes” in the *MQSeries for OS/390 Messages and Codes* book.
- For other platforms, the last four digits of *ErrorIdentifier* when displayed in hexadecimal notation indicate the decimal code number of the error message.

## Channel Stopped

For example, if *ErrorIdentifier* has the value X'xxxxyyy', the message code of the error message explaining the error is AMQyyyy.

See the *MQSeries Messages* book.

### *AuxErrorDataInt1* (MQCFIN)

First integer of auxiliary error data for channel errors (parameter identifier: MQIACF\_AUX\_ERROR\_DATA\_INT\_1).

When a channel is in a stopped condition due to an error, this is the first integer parameter that qualifies the error. This information is for use by IBM service personnel; include it in any problem report that you submit to IBM regarding this event message.

### *AuxErrorDataInt2* (MQCFIN)

Second integer of auxiliary error data for channel errors (parameter identifier: MQIACF\_AUX\_ERROR\_DATA\_INT\_2).

If the channel is stopped due to an error, this is the second integer parameter that qualifies the error. This information is for use by IBM service personnel; include it in any problem report that you submit to IBM regarding this event message.

### *AuxErrorDataStr1* (MQCFST)

First string of auxiliary error data for channel errors (parameter identifier: MQCACF\_AUX\_ERROR\_DATA\_STR\_1).

If the channel is stopped due to an error, this is the first string parameter that qualifies the error. This information is for use by IBM service personnel; include it in any problem report that you submit to IBM regarding this event message.

### *AuxErrorDataStr2* (MQCFST)

Second string of auxiliary error data for channel errors (parameter identifier: MQCACF\_AUX\_ERROR\_DATA\_STR\_2).

If the channel is stopped due to an error, this is the second string parameter that qualifies the error. This information is for use by IBM service personnel; include it in any problem report that you submit to IBM regarding this event message.

### *AuxErrorDataStr3* (MQCFST)

Third string of auxiliary error data for channel errors (parameter identifier: MQCACF\_AUX\_ERROR\_DATA\_STR\_3).

If the channel is stopped due to an error, this is the third string parameter that qualifies the error. This information is for use by IBM service personnel; include it in any problem report that you submit to IBM regarding this event message.

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

This is applicable to sender, server, cluster-sender, and cluster-receiver channel types only.

*ConnectionName* (MQCFST)

Connection name (parameter identifier:  
MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

For TCP this is the internet address only if the channel has successfully established a connection. Otherwise it is the contents of the *ConnectionName* field in the channel definition.

This is not returned for commands containing a generic name.

---

### Channel Stopped By User

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using CICS for distributed queue management in MQSeries for OS/390.

**Note:** MQSeries for Windows V2.1 **does not** define the channel event queue for you, so the default action is **not to generate channel events**. This is because once you have defined a channel event queue, you cannot stop channel event messages being generated. If you want MQSeries to generate channel events, you must define the channel event queue yourself using the name SYSTEM.ADMIN.CHANNEL.EVENT.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.CHANNEL.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_CHANNEL\_STOPPED\_BY\_USER
- Event data

### Event data summary

**Always returned:**

*QMgrName, ReasonQualifier, ChannelName, ErrorIdentifier, AuxErrorDataInt1, AuxErrorDataInt2, AuxErrorDataStr1, AuxErrorDataStr2, AuxErrorDataStr3*

**Returned optionally:**

*XmitQName, ConnectionName*

#### Event header

*Reason*(MQLONG)

Name of the reason code.

The value is:

MQRC\_CHANNEL\_STOPPED\_BY\_USER  
(2279, X'8E7') Channel stopped.

This condition is detected when the channel has been stopped by the operator. The reason qualifier identifies the reasons for stopping.

#### Event data

*QMgrName*(MQCFST)

The name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier that qualifies the reason code (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value is one of the following:

MQRQ\_CHANNEL\_STOPPED\_OK

Channel has been closed with either a zero return code or a warning return code.

MQRQ\_CHANNEL\_STOPPED\_ERROR

Channel has been closed but there is an error reported and the channel is not in stopped or retry state.

MQRQ\_CHANNEL\_STOPPED\_RETRY

Channel has been closed and it is in retry state.

MQRQ\_CHANNEL\_STOPPED\_DISABLED

Channel has been closed and it is in a stopped state.

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*ErrorIdentifier* (MQCFIN)

Identifier of the cause of the error (parameter identifier: MQIACF\_ERROR\_IDENTIFIER).

As the event message is generated by a Stop Channel command and not a channel error, the following fields are set:

1. *ReasonQualifier*, containing the same value as in the *ReasonQualifier*(MQCFIN) field above.
2. *AuxErrorDataInt1*, containing zeros
3. *AuxErrorDataInt2*, containing zeros
4. *AuxErrorDataStr1*, containing zeros
5. *AuxErrorDataStr2*, containing zeros
6. *AuxErrorDataStr3*, containing zeros

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH. This is only applicable to sender, server, cluster-sender, and cluster-receiver channel types.

*ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

For TCP this is the internet address only if the channel has successfully established a connection. Otherwise it is the contents of the *ConnectionName* field in the channel definition.

This is not returned for commands containing a generic name.

---

### Default Transmission Queue Type Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_DEF\_XMIT\_Q\_TYPE\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, XmitQName, QType, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_DEF\_XMIT\_Q\_TYPE\_ERROR

(2198, X'896') Default transmission queue not local.

An MQOPEN or MQPUT1 call was issued specifying a remote queue as the destination. Either a local definition of the remote queue was specified, or a queue-manager alias was being resolved, but in either case the *XmitQName* attribute in the local definition is blank.

No transmission queue is defined with the same name as the destination queue manager, so the local queue manager has attempted to use the default transmission queue. However, although there is a queue defined by the *DefXmitQName* queue-manager attribute, it is not a local queue. See "Transmission queues" in the *MQSeries Application Programming Guide* for more information.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *XmitQName* (MQCFST)

Default transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *QType* (MQCFIN)

Type of default transmission queue (parameter identifier: MQIA\_Q\_TYPE).

The value can be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_REMOTE

Local definition of a remote queue.

### *AppType* (MQCFIN)

Type of application making the MQI call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

### *AppName* (MQCFST)

Name of the application making the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than a client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

### Default Transmission Queue Usage Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_DEF\_XMIT\_Q\_USAGE\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, XmitQName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_DEF\_XMIT\_Q\_USAGE\_ERROR

(2199, X'897') Default transmission queue usage error.

An MQOPEN or MQPUT1 call was issued specifying a remote queue as the destination. Either a local definition of the remote queue was specified, or a queue-manager alias was being resolved, but in either case the *XmitQName* attribute in the local definition is blank.

No transmission queue is defined with the same name as the destination queue manager, so the local queue manager has attempted to use the default transmission queue. However, the queue defined by the *DefXmitQName* queue-manager attribute does not have a *Usage* attribute of MQUS\_TRANSMISSION. See "Transmission queues" in the *MQSeries Application Programming Guide* for more information.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *XmitQName* (MQCFST)

Default transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *ApplType* (MQCFIN)

Type of application making the MQI call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

### *ApplName* (MQCFST)

Name of the application making the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *ApplType* and *ApplName* parameters identify the server, rather than a client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

### Get Inhibited

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_GET\_INHIBITED
- Event data

### Event data summary

**Always returned:**

*QMgrName*, *QName*, *AppLType*, *AppLName*,

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_GET\_INHIBITED

(2016, X'7E0') Gets inhibited for the queue.

MQGET calls are currently inhibited for the queue (see the *InhibitGet* queue attribute in “Attributes for all queues” in the *MQSeries Application Programming Reference* manual) or for the queue to which this queue resolves.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*AppLType* (MQCFIN)

Type of the application that issued the get (parameter identifier: MQIA\_APPL\_TYPE).

*App1Name* (MQCFST)

Name of the application that issued the get (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *App1Type* and *App1Name* parameters identify the server, rather than the client.

---

### Not Authorized (type 1)

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using MQSeries for OS/390, MQSeries for OS/2 Warp, or MQSeries for Windows Version 2.1.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_NOT\_AUTHORIZED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ReasonQualifier, UserIdentifier, ApplType, ApplName*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

On an MQCONN call, the user is not authorized to connect to the queue manager.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier for type 1 authority events (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value must be:

MQRQ\_CONN\_NOT\_AUTHORIZED

Connection not authorized.

*UserIdentifier* (MQCFST)

User identifier that caused the authorization check (parameter identifier: MQCACF\_USER\_IDENTIFIER).

The maximum length of the string is MQ\_USER\_ID\_LENGTH.

*ApplType* (MQCFIN)

Type of application causing the event (parameter identifier: MQIA\_APPL\_TYPE).

*ApplName* (MQCFST)

Name of the application causing the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *ApplType* and *ApplName* parameters identify the server, rather than the client.

---

### Not Authorized (type 2)

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using MQSeries for OS/390, MQSeries for OS/2 Warp, MQSeries for Tandem NSK Version 2.2, or MQSeries for Windows Version 2.1.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_NOT\_AUTHORIZED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ReasonQualifier, Options, UserIdentifier, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName, QName, ProcessName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

On an MQOPEN or MQPUT1 call, the user is not authorized to open the object for the option(s) specified.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is

MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier for type 2 authority events (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value must be:

MQRQ\_OPEN\_NOT\_AUTHORIZED

Open not authorized.

*Options* (MQCFIN)

Options specified on the MQOPEN call (parameter identifier: MQIACF\_OPEN\_OPTIONS).

*UserIdentifier* (MQCFST)

User identifier that caused the authorization check (parameter identifier: MQCACF\_USER\_IDENTIFIER).

The maximum length of the string is MQ\_USER\_ID\_LENGTH.

*ApplType* (MQCFIN)

Type of application causing the authorization check (parameter identifier: MQIA\_APPL\_TYPE).

*ApplName* (MQCFST)

Name of the application causing the authorization check (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *ApplType* and *ApplName* parameters identify the server, rather than the client.

*ObjectQMgrName* (MQCFST)

The name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ProcessName* (MQCFST)

Name of the process whose attributes have changed (parameter identifier: MQCA\_PROCESS\_NAME).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

---

### Not Authorized (type 3)

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using MQSeries for OS/390, MQSeries for OS/2 Warp, MQSeries for Tandem NSK Version 2.2, or MQSeries for Windows Version 2.1.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_NOT\_AUTHORIZED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ReasonQualifier, QName, UserIdentifier, ApplType, ApplName*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

On an MQCLOSE call, the user is not authorized to delete the object, which is a permanent dynamic queue, and the *Hobj* parameter specified on the MQCLOSE call is not the handle returned by the MQOPEN call which created the queue.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier for type 3 authority events (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value is:

MQRQ\_CLOSE\_NOT\_AUTHORIZED

Close not authorized.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*UserIdentifier* (MQCFST)

User identifier that caused the authorization check (parameter identifier: MQCACF\_USER\_IDENTIFIER).

The maximum length of the string is MQ\_USER\_ID\_LENGTH.

*ApplType* (MQCFIN)

Type of application that caused the authorization check (parameter identifier: MQIA\_APPL\_TYPE).

*ApplName* (MQCFST)

Name of the application causing the authorization check (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *ApplType* and *ApplName* parameters identify the server, rather than the client.

---

### Not Authorized (type 4)

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced if you are using MQSeries for OS/390, MQSeries for OS/2 Warp, MQSeries for Tandem NSK Version 2.2, or MQSeries for Windows Version 2.1.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_NOT\_AUTHORIZED
- Event data

### Event data summary

**Always returned:**

*QMgrName, ReasonQualifier, Command, UserIdentifier*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

Indicates that a command has been issued from a user ID that is not authorized to access the object specified in the command.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier for type 4 authority events (parameter identifier: MQIACF\_REASON\_QUALIFIER).

The value must be:

MQRQ\_CMD\_NOT\_AUTHORIZED

Command not authorized.

*Command* (MQCFIN)

Identifier for the command (parameter identifier: MQIACF\_COMMAND).

See the PCF header (MQCFH) structure, described on page 388

*UserIdentifier* (MQCFST)

User identifier that caused the authorization check (parameter identifier: MQCACF\_USER\_IDENTIFIER).

The maximum length of the string is MQ\_USER\_ID\_LENGTH.

---

## Put Inhibited

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

## Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_PUT\_INHIBITED
- Event data

## Event data summary

### **Always returned:**

*QMgrName, QName, ApplType, ApplName*

### **Returned optionally:**

*ObjectQMgrName*

### **Event header**

*Reason* (MQLONG)

Name of the reason code generating the event.

The value is:

MQRC\_PUT\_INHIBITED

(2051, X'803') Put calls inhibited for the queue.

MQPUT and MQPUT1 calls are currently inhibited for the queue (see the *InhibitPut* queue attribute in “Attributes for all queues” in the *MQSeries Application Programming Reference* manual) or for the queue to which this queue resolves.

### **Event data**

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ApplType* (MQCFIN)

Type of the application that issued the put (parameter identifier: MQIA\_APPL\_TYPE).

*AppLName* (MQCFST)

Name of the application that issued the put (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppLType* and *AppLName* parameters identify the server, rather than the client.

*ObjectQMgrName* (MQCFST)

Queue-manager name from object descriptor (MQOD) (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned only if it has a value that is different from *QMgrName*. This occurs when the *ObjectQMgrName* field in the object descriptor provided by the application on the MQOPEN or MQPUT1 call is neither blank nor the name of the application's local queue manager. However, it can also occur when *ObjectQMgrName* in the object descriptor is blank, but a name service provides a queue-manager name which is not the name of the application's local queue manager.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

### Queue Depth High

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.PERFM.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_DEPTH\_HIGH
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, TimeSinceReset, HighQDepth, MsgEnqCount, MsgDeqCount*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_DEPTH\_HIGH

(2224, X'8B0') Queue depth high limit reached or exceeded.

An MQPUT or MQPUT1 call has caused the queue depth to be incremented to or above the limit specified in the *QDepthHighLimit* attribute.

Corrective action: None. This reason code is only used to identify the corresponding event message.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Name of the queue on which the limit has been reached (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TimeSinceReset* (MQCFIN)

Time, in seconds, since the statistics were last reset (parameter identifier: MQIA\_TIME\_SINCE\_RESET).

The value recorded by this timer is also used as the *interval time* in queue service interval events.

### *HighQDepth* (MQCFIN)

Maximum number of messages on the queue since the queue statistics were last reset (parameter identifier: MQIA\_HIGH\_Q\_DEPTH).

### *MsgEnqCount* (MQCFIN)

Number of messages enqueued (parameter identifier: MQIA\_MSG\_ENQ\_COUNT).

That is, the number of messages put on the queue since the queue statistics were last reset.

### *MsgDeqCount* (MQCFIN)

Number of messages removed from the queue (parameter identifier: MQIA\_MSG\_DEQ\_COUNT).

That is, the number of messages removed from the queue since the queue statistics were last reset.

---

### Queue Depth Low

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.PERFM.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_DEPTH\_LOW
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, TimeSinceReset, HighQDepth, MsgEnqCount, MsgDeqCount*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_DEPTH\_LOW

(2225, X'8B1') Queue depth low limit reached or exceeded.

An MQGET call has caused the queue depth to be decremented to or below the limit specified in the *QDepthLowLimit* attribute.

Corrective action: None. This reason code is only used to identify the corresponding event message.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Name of the queue on which the limit has been reached (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TimeSinceReset* (MQCFIN)

Time, in seconds, since the statistics were last reset (parameter identifier: MQIA\_TIME\_SINCE\_RESET).

The value recorded by this timer is also used as the *interval time* in queue service interval events.

*HighQDepth* (MQCFIN)

Maximum number of messages on the queue since the queue statistics were last reset (parameter identifier: MQIA\_HIGH\_Q\_DEPTH).

*MsgEnqCount* (MQCFIN)

Number of messages enqueued (parameter identifier: MQIA\_MSG\_ENQ\_COUNT).

That is, the number of messages put on the queue since the queue statistics were last reset.

*MsgDeqCount* (MQCFIN)

Number of messages removed from the queue (parameter identifier: MQIA\_MSG\_DEQ\_COUNT).

That is, the number of messages removed from the queue since the queue statistics were last reset.

---

## Queue Full

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.PERFM.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_FULL
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, TimeSinceReset, HighQDepth, MsgEnqCount, MsgDeqCount*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_FULL

(2053, X'805') Queue already contains maximum number of messages.

On an MQPUT or MQPUT1 call, the call failed because the queue is full, that is it already contains the maximum number of messages possible (see the *MaxQDepth* local-queue attribute in “Attributes for local queues and model queues” in the *MQSeries Application Programming Reference* manual).

This reason code can also occur in the *Feedback* field in the message descriptor of a report message; in this case it indicates that the error was encountered by a message channel agent when it attempted to put the message on a remote queue.

Corrective action: Retry the operation later. Consider increasing the maximum depth for this queue, or arranging for more instances of the application to service the queue.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

The name of the queue on which the put was rejected (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TimeSinceReset* (MQCFIN)

Time, in seconds, since the statistics were last reset (parameter identifier: MQIA\_TIME\_SINCE\_RESET).

*HighQDepth* (MQCFIN)

The maximum number of messages on a queue (parameter identifier: MQIA\_HIGH\_Q\_DEPTH).

*MsgEnqCount* (MQCFIN)

Number of messages enqueued (parameter identifier: MQIA\_MSG\_ENQ\_COUNT).

That is, the number of messages placed on the queue since queue statistics were reset.

*MsgDeqCount* (MQCFIN)

The number of messages removed from the queue (parameter identifier: MQIA\_MSG\_DEQ\_COUNT).

That is, the number of messages removed from the queue since queue statistics were reset.

---

### Queue Manager Active

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced for the first start of an MQSeries for OS/390 queue manager, only on subsequent starts.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_MGR\_ACTIVE
- Event data

### Event data summary

**Always returned:**

*QMgrName*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_MGR\_ACTIVE

(2222, X'8AE') Queue manager created.

This condition is detected when a queue manager becomes active.

On OS/390, this event is not generated for the first start of a queue manager, only on subsequent restarts.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

## Queue Manager Not Active

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is not produced by MQSeries for OS/390.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_MGR\_NOT\_ACTIVE
- Event data

### Event data summary

**Always returned:** *QMgrName, ReasonQualifier*

**Returned optionally:** None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_MGR\_NOT\_ACTIVE

(2223, X'8AE') Queue manager unavailable.

This condition is detected when a queue manager is requested to stop or quiesce.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*ReasonQualifier* (MQCFIN)

Identifier of cases of this reason code (parameter identifier: MQIACF\_REASON\_QUALIFIER).

This specifies the type of stop that was requested. The value is one of the following:

MQRQ\_Q\_MGR\_STOPPING

Queue manager stopping.

MQRQ\_Q\_MGR\_QUIESCING

Queue manager quiescing.

---

### Queue Service Interval High

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.PERFM.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_SERVICE\_INTERVAL\_HIGH
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, TimeSinceReset, HighQDepth, MsgEnqCount, MsgDeqCount*

**Returned optionally:**

None

### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_SERVICE\_INTERVAL\_HIGH  
(2226, X'8B2') Queue service interval high.

No successful gets or puts have been detected within an interval which is greater than the limit specified in the *QServiceInterval* attribute.

Corrective action: None. This reason code is only used to identify the corresponding event message.

### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Name of the queue specified on the command which caused this queue service interval event to be generated (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *TimeSinceReset* (MQCFIN)

Time, in seconds, since the statistics were reset (parameter identifier: MQIA\_TIME\_SINCE\_RESET).

For a service interval high event, this value is greater than the service interval.

### *HighQDepth* (MQCFIN)

Maximum number of messages on a queue, since queue statistics were reset (parameter identifier: MQIA\_HIGH\_Q\_DEPTH).

### *MsgEnqCount* (MQCFIN)

Number of messages enqueued (parameter identifier: MQIA\_MSG\_ENQ\_COUNT).

That is, the number of messages put on the queue since the queue statistics were last reset.

### *MsgDeqCount* (MQCFIN)

Number of messages removed from the queue (parameter identifier: MQIA\_MSG\_DEQ\_COUNT).

That is, the number of messages removed from the queue since the queue statistics were last reset.

---

## Queue Service Interval OK

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.PERFM.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_SERVICE\_INTERVAL\_OK
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, TimeSinceReset, HighQDepth, MsgEnqCount, MsgDeqCount*

**Returned optionally:**

None

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_SERVICE\_INTERVAL\_OK  
(2227, X'8B3') Queue service interval ok.

A successful get has been detected within an interval which is less than or equal to the limit specified in the *QServiceInterval* attribute.

Corrective action: None. This reason code is only used to identify the corresponding event message.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name specified on the command that caused this queue service interval event to be generated (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TimeSinceReset* (MQCFIN)

Time, in seconds, since the statistics were reset (parameter identifier: MQIA\_TIME\_SINCE\_RESET).

*HighQDepth* (MQCFIN)

The maximum number of messages on a queue since statistics were reset (parameter identifier: MQIA\_HIGH\_Q\_DEPTH).

*MsgEnqCount* (MQCFIN)

Number of messages enqueued (parameter identifier: MQIA\_MSG\_ENQ\_COUNT).

That is the number of messages put on the queue since the queue statistics were last reset.

*MsgDeqCount* (MQCFIN)

Number of messages removed from the queue (parameter identifier: MQIA\_MSG\_DEQ\_COUNT).

That is the number of messages removed from the queue since the queue statistics were last reset.

---

### Queue Type Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_Q\_TYPE\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_Q\_TYPE\_ERROR

(2057, X'809') Queue type not valid.

On an MQOPEN call, the *ObjectQMgrName* field in the object descriptor specifies the name of a local definition of a remote queue (in order to specify a queue-manager alias), and in that local definition the *RemoteQMgrName* attribute is the name of the local queue manager. However, the *ObjectName* field specifies the name of a model queue on the local queue manager; this is not allowed. See "Transmission queues" in the *MQSeries Application Programming Guide* for more information.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *AppType* (MQCFIN)

Type of application making the MQI call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

### *AppName* (MQCFST)

Name of the application making the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than a client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

### Remote Queue Name Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_REMOTE\_Q\_NAME\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_REMOTE\_Q\_NAME\_ERROR

(2184, X'888') Remote queue name not valid.

On an MQOPEN or MQPUT1 call, one of the following occurred:

- A local definition of a remote queue (or an alias to one) was specified, but the *RemoteQName* attribute in the remote queue definition is entirely blank. Note that this error occurs even if the *XmitQName* in the definition is not blank.
- The *ObjectQMgrName* field in the object descriptor was not blank and not the name of the local queue manager, but the *ObjectName* field is blank.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *AppType* (MQCFIN)

Type of application making the MQI call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

### *AppName* (MQCFST)

Name of the application making the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than a client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### Transmission Queue Type Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_XMIT\_Q\_TYPE\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, XmitQName, QType, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_XMIT\_Q\_TYPE\_ERROR

(2091, X'82B') Transmission queue not local.

On an MQOPEN or MQPUT1 call, a message is to be sent to a remote queue manager. The *ObjectName* or *ObjectQMgrName* field in the object descriptor specifies the name of a local definition of a remote queue but one of the following applies to the *XmitQName* attribute of the definition:

- *XmitQName* is not blank, but specifies a queue that is not a local queue
- *XmitQName* is blank, but *RemoteQMgrName* specifies a queue that is not a local queue

This reason also occurs if the queue name is resolved through a cell directory, and the remote queue manager name obtained from the cell directory is the name of a queue, but this is not a local queue.

**Event data***QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*QType* (MQCFIN)

Type of transmission queue (parameter identifier: MQIA\_Q\_TYPE).

The value can be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_REMOTE

Local definition of a remote queue.

*AppType* (MQCFIN)

Type of application making the MQI call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

*AppName* (MQCFST)

Name of the current application Name of the application making the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than a client.

*ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### Transmission Queue Usage Error

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_XMIT\_Q\_USAGE\_ERROR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, XmitQName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

### Event header

*Reason* (MQLONG)

Name of the reason code generating the event.

The value is:

MQRC\_XMIT\_Q\_USAGE\_ERROR

(2092, X'82C') Transmission queue with wrong usage.

On an MQOPEN or MQPUT1 call, a message is to be sent to a remote queue manager, but one of the following occurred:

- *ObjectQMgrName* specifies the name of a local queue, but it does not have a *Usage* attribute of MQUS\_TRANSMISSION.
- The *ObjectName* or *ObjectQMgrName* field in the object descriptor specifies the name of a local definition of a remote queue but one of the following applies to the *XmitQName* attribute of the definition:
  - *XmitQName* is not blank, but specifies a queue that does not have a *Usage* attribute of MQUS\_TRANSMISSION
  - *XmitQName* is blank, but *RemoteQMgrName* specifies a queue that does not have a *Usage* attribute of MQUS\_TRANSMISSION

- The queue name is resolved through a cell directory, and the remote queue manager name obtained from the cell directory is the name of a local queue, but it does not have a *Usage* attribute of MQUS\_TRANSMISSION.

### Event data

#### *QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

#### *QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

#### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

#### *AppType* (MQCFIN)

Type of application making the MQI call that caused the event  
Type of current application (parameter identifier: MQIA\_APPL\_TYPE).

#### *AppName* (MQCFST)

Name of the application making the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than the client.

#### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

### Unknown Alias Base Queue

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_UNKNOWN\_ALIAS\_BASE\_Q
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, BaseQName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_UNKNOWN\_ALIAS\_BASE\_Q

(2082, X'822') Unknown alias base queue.

An MQOPEN or MQPUT1 call was issued specifying an alias queue as the target, but the *BaseQName* in the alias queue attributes is not recognized as a queue name.

#### Event data

*QMgrName* (MQCFST)

The name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*BaseQName* (MQCFST)

Queue name to which the alias resolves (parameter identifier: MQCA\_BASE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ApplType* (MQCFIN)

Type of the application making the MQI call that causes the event. (parameter identifier: MQIA\_APPL\_TYPE).

*ApplName* (MQCFST)

Name of the application making the MQI call that causes the event. (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *ApplType* and *ApplName* parameters identify the server, rather than the client.

*ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

## Unknown Default Transmission Queue

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the Event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_UNKNOWN\_DEF\_XMIT\_Q
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, XmitQName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMGrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_UNKNOWN\_DEF\_XMIT\_Q

(2197, X'895') Unknown default transmission queue.

An MQOPEN or MQPUT1 call was issued specifying a remote queue as the destination. If a local definition of the remote queue was specified, or if a queue-manager alias is being resolved, the *XmitQName* attribute in the local definition is blank.

No queue is defined with the same name as the destination queue manager. The queue manager has therefore attempted to use the default transmission queue. However, the name defined by the *DefXmitQName* queue-manager attribute is not the name of a locally-defined queue.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *XmitQName* (MQCFST)

Default transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *ApplType* (MQCFIN)

Type of application attempting to open the remote queue (parameter identifier: MQIA\_APPL\_TYPE).

### *ApplName* (MQCFST)

Name of the application attempting to open the remote queue (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *ApplType* and *ApplName* parameters identify the server, rather than a client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### Unknown Object Name

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_UNKNOWN\_OBJECT\_NAME
- Event data

### Event data summary

**Always returned:**

*QMgrName, ApplType, ApplName*

**In addition, one of:**

*QName, ProcessName*

**Returned optionally:**

*ObjectQMgrName*

### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_UNKNOWN\_OBJECT\_NAME

(2085, X'825') Unknown object name.

On an MQOPEN or MQPUT1 call, the *ObjectQMgrName* field in the object descriptor MQOD is set to one of the following:

- Blank
- The name of the local queue manager
- The name of a local definition of a remote queue (a queue-manager alias) in which the *RemoteQMgrName* attribute is the name of the local queue manager

However, the *ObjectName* in the object descriptor is not recognized for the specified object type.

See also MQRC\_Q\_DELETED.

**Event data***AppType* (MQCFIN)

Type of the application issuing the MQI call that caused the event (parameter identifier: MQIA\_APPL\_TYPE).

*AppName* (MQCFST)

Name of the application issuing the MQI call that caused the event (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than the client.

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ProcessName* (MQCFST)

Name of the process (application) issuing the MQI call that caused the event (parameter identifier: MQCA\_PROCESS\_NAME).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

*ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### Unknown Remote Queue Manager

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_UNKNOWN\_REMOTE\_Q\_MGR
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_UNKNOWN\_REMOTE\_Q\_MGR

(2087, X'827') Unknown remote queue manager.

On an MQOPEN or MQPUT1 call, an error occurred with the queue-name resolution, for one of the following reasons:

- *ObjectQMgrName* is either blank or the name of the local queue manager, and *ObjectName* is the name of a local definition of a remote queue, which has a blank *XmitQName*. However, there is no (transmission) queue defined with the name of *RemoteQMgrName*, and the *DefXmitQName* queue-manager attribute is blank.
- *ObjectQMgrName* is the name of a queue-manager alias definition (held as the local definition of a remote queue), which has a blank *XmitQName*. However, there is no (transmission) queue defined with the name of *RemoteQMgrName*, and the *DefXmitQName* queue-manager attribute is blank.

- *ObjectQMgrName* specified is not:
  - Blank
  - The name of the local queue manager
  - The name of a local queue
  - The name of a queue-manager alias definition (that is, a local definition of a remote queue with a blank *RemoteQName*)

and the *DefXmitQName* queue-manager attribute is blank.

- *ObjectQMgrName* is blank or is the name of the local queue manager, and *ObjectName* is the name of a local definition of a remote queue (or an alias to one), for which *RemoteQMgrName* is either blank or is the name of the local queue manager. Note that this error occurs even if the *XmitQName* is not blank.
- *ObjectQMgrName* is the name of a local definition of a remote queue. In this context, this should be a queue-manager alias definition, but the *RemoteQName* in the definition is not blank.
- *ObjectQMgrName* is the name of a model queue.
- The queue name is resolved through a cell directory. However, there is no queue defined with the same name as the remote queue manager name obtained from the cell directory. Also, the *DefXmitQName* queue-manager attribute is blank.

### Event data

#### *QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

#### *QName* (MQCFST)

Queue name from *object descriptor (MQOD)* (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

#### *AppIType* (MQCFIN)

Type of application attempting to open the remote queue (parameter identifier: MQIA\_APPL\_TYPE).

#### *AppIName* (MQCFST)

Name of the application attempting to open the remote queue (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppIType* and *AppIName* parameters identify the server, rather than the client.

## Unknown Remote Queue Manager

*ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

---

## Unknown Transmission Queue

Details of the condition generating the event are given, in the following text, in the *Reason* parameter of the event header.

This event is supported on all platforms.

### Event message

When an event is generated, an event message is put on the SYSTEM.ADMIN.QMGR.EVENT queue.

The event message consists of the:

- Event header, containing a reason code parameter with a value of MQRC\_UNKNOWN\_XMIT\_Q
- Event data

### Event data summary

**Always returned:**

*QMgrName, QName, XmitQName, ApplType, ApplName*

**Returned optionally:**

*ObjectQMgrName*

#### Event header

*Reason* (MQLONG)

Name of the reason code.

The value is:

MQRC\_UNKNOWN\_XMIT\_Q

(2196, X'894') Unknown transmission queue.

On an MQOPEN or MQPUT1 call, a message is to be sent to a remote queue manager. The *ObjectName* or the *ObjectQMgrName* in the object descriptor specifies the name of a local definition of a remote queue (in the latter case queue-manager aliasing is being used), but the *XmitQName* attribute of the definition is not blank and not the name of a locally-defined queue.

#### Event data

*QMgrName* (MQCFST)

Name of the queue manager generating the event (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*QName* (MQCFST)

Queue name from object descriptor (MQOD) (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

## Unknown Transmission Queue

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *AppType* (MQCFIN)

Type of application that made the MQI call (parameter identifier: MQIA\_APPL\_TYPE).

### *AppName* (MQCFST)

Name of the current application (parameter identifier: MQCACF\_APPL\_NAME).

The maximum length of the string is MQ\_APPL\_NAME\_LENGTH.

**Note:** If the application is a server for clients, the *AppType* and *AppName* parameters identify the server, rather than the client.

### *ObjectQMgrName* (MQCFST)

Name of the object queue manager (parameter identifier: MQCACF\_OBJECT\_Q\_MGR\_NAME).

This parameter is returned if the *ObjectName* in the object descriptor (MQOD) (when the object was opened) is not the queue manager currently connected.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

## Chapter 5. Example of using instrumentation events

This example shows how you can write a program for instrumentation events. It is written in C for queue managers on OS/2 Warp, Windows NT, or UNIX systems. It is not part of any MQSeries product and is therefore supplied as source only. The example is incomplete in that it does not enumerate all the possible outcomes of specified actions. Bearing this in mind, you can use this sample as a basis for your own programs that use events, in particular, the PCF formats used in event messages. However, you will need to modify this program to get it to run on your systems.

```

/*****
/*
/* Program name: EVMON
/*
/*
/* Description: C program that acts as an event monitor
/*
/*
/*
/*****
/*
/* Function:
/*
/*
/* EVMON is a C program that acts as an event monitor - reads an
/* event queue and tells you if anything appears on it
/*
/* Its first parameter is the queue manager name, the second is
/* the event queue name. If these are not supplied it uses the
/* defaults.
/*
/*****
#include <time.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#ifndef min
#define min(a,b) ((a) < (b)) ? (a) : (b)
#endif
#ifdef OS2
/*****
/* for beep
/*****
#define INCL_DOSPROCESS
#include <os2.h>
#endif
/*****
/* includes for MQI
/*****
#include <cmqc.h>
#include <cmqcf.h>
void printfmqcfst(MQCFST* pmqcfst);
void printfmqcfst(MQCFIN* pmqcfst);
void printreas(MQLONG reason);

#define PRINTREAS(param) \
    case param: \

```

## Example using events

```
        printf("Reason = %s\n",#param);
        break;

/*****
/* global variable
*****/
MQCFH   *evtmsg;           /* evtmsg message buffer */

int main(int argc, char **argv)
{
/*****
/* declare variables
*****/
int i;           /* auxiliary counter */
/*****
/* Declare MQI structures needed
*****/
MQOD    od = {MQOD_DEFAULT};    /* Object Descriptor */
MQMD    md = {MQMD_DEFAULT};    /* Message Descriptor */
MQGMO   gmo = {MQGMO_DEFAULT};  /* get message options */
/*****
/* note, uses defaults where it can
*****/
MQHCONN Hcon;           /* connection handle */
MQHOBJ  Hobj;           /* object handle */
MQLONG  O_options;     /* MQOPEN options */
MQLONG  C_options;     /* MQCLOSE options */
MQLONG  CompCode;      /* completion code */
MQLONG  OpenCode;      /* MQOPEN completion code */
MQLONG  Reason;        /* reason code */
MQLONG  CReason;       /* reason code for MQCONN */
MQLONG  buflen;        /* buffer length */
MQLONG  evtmsglen;     /* message length received */
MQCHAR  command[1100]; /* call command string ... */
MQCHAR  p1[600];       /* ApplId insert */
MQCHAR  p2[900];       /* evtmsg insert */
MQCHAR  p3[600];       /* Environment insert */
MQLONG  mytype;        /* saved application type */
char    QMName[50];    /* queue manager name */
MQCFST  *paras;        /* the parameters */
int     counter;       /* loop counter */
time_t  ltime;

/*****
/* Connect to queue manager
*****/
QMName[0] = 0;           /* default queue manager */
if (argc > 1)
    strcpy(QMName, argv[1]);
MQCONN(QMName,           /* queue manager */
        &Hcon,           /* connection handle */
        &CompCode,       /* completion code */
        &CReason);      /* reason code */

/*****
/* Initialize object descriptor for subject queue
*****/
strcpy(od.ObjectName, "SYSTEM.ADMIN.QMGR.EVENT");
```

```

if (argc > 2)
    strcpy(od.ObjectName, argv[2]);

/*****
/* Open the event queue for input; exclusive or shared. Use of */
/* the queue is controlled by the queue definition here */
/*****
O_options = MQOO_INPUT_AS_Q_DEF /* open queue for input */
          + MQOO_FAIL_IF_QUIESCING /* but not if qmgr stopping */
          + MQOO_BROWSE;
MQOPEN(Hcon, /* connection handle */
      &od, /* object descriptor for queue*/
      O_options, /* open options */
      &Hobj, /* object handle */
      &CompCode, /* completion code */
      &Reason); /* reason code */

/*****
/* Get messages from the message queue */
/*****
while (CompCode != MQCC_FAILED)
{
    /*****
    /* I don't know how big this message is so just get the */
    /* descriptor first */
    /*****
    gmo.Options = MQGMO_WAIT + MQGMO_LOCK
                + MQGMO_BROWSE_FIRST + MQGMO_ACCEPT_TRUNCATED_MSG;
                /* wait for new messages */
    gmo.WaitInterval = MQWI_UNLIMITED; /* no time limit */
    buflen = 0; /* amount of message to get */

    /*****
    /* clear selectors to get messages in sequence */
    /*****
    memcpy(md.MsgId, MQMI_NONE, sizeof(md.MsgId));
    memcpy(md.CorrelId, MQCI_NONE, sizeof(md.CorrelId));

    /*****
    /* wait for event message */
    /*****
    printf("...>\n");
    MQGET(Hcon, /* connection handle */
        Hobj, /* object handle */
        &md, /* message descriptor */
        &gmo, /* get message options */
        buflen, /* buffer length */
        evtmsg, /* evtmsg message buffer */
        &evtmsglen, /* message length */
        &CompCode, /* completion code */
        &Reason); /* reason code */

    /*****
    /* report reason, if any */
    /*****
    if (Reason != MQRC_NONE && Reason != MQRC_TRUNCATED_MSG_ACCEPTED)
    {
        printf("MQGET ==> %ld\n", Reason);
    }

```



```

    printf("\a\a\a\a\a\a");
#endif
time(&lttime);
printf(ctime(&lttime));

if (evtmsglen != buflen)
    printf("DataLength = %ld?\n", evtmsglen);
else
{
    /******
    /* right let's look at the data
    /******
    if (evtmsg->Type != MQCFT_EVENT)
    {
        printf("Something's wrong this isn't an event message,"
            " its type is %ld\n",evtmsg->Type);
    }
    else
    {
        if (evtmsg->Command == MQCMD_Q_MGR_EVENT)
        {
            printf("Queue Manager event: ");
        }
        else
            if (evtmsg->Command == MQCMD_CHANNEL_EVENT)
            {
                printf("Channel event: ");
            }
            else
                :

                {
                    printf("Unknown Event message, %ld.",
                        evtmsg->Command);
                }

        if (evtmsg->CompCode == MQCC_OK)
            printf("CompCode(OK)\n");
        else if (evtmsg->CompCode == MQCC_WARNING)
            printf("CompCode(WARNING)\n");
        else if (evtmsg->CompCode == MQCC_FAILED)
            printf("CompCode(FAILED)\n");
        else
            printf("* CompCode wrong * (%ld)\n",
                evtmsg->CompCode);

        if (evtmsg->StrucLength != MQCFH_STRUC_LENGTH)
        {
            printf("it's the wrong length, %ld\n",evtmsg->StrucLength);
        }

        if (evtmsg->Version != MQCFH_VERSION_1)
        {
            printf("it's the wrong version, %ld\n",evtmsg->Version);
        }

        if (evtmsg->MsgSeqNumber != 1)
        {

```

## Example using events

```
        printf("it's the wrong sequence number, %ld\n",
               evtmsg->MsgSeqNumber);
    }

    if (evtmsg->Control != MQCFC_LAST)
    {
        printf("it's the wrong control option, %ld\n",
               evtmsg->Control);
    }

    printreas(evtmsg->Reason);
    printf("parameter count is %ld\n", evtmsg->ParameterCount);
    /******
    /* get a pointer to the start of the parameters      */
    /******
    paras = (MQCFST *) (evtmsg + 1);
    counter = 1;
    while (counter <= evtmsg->ParameterCount)
    {
        switch (paras->Type)
        {
            case MQCFT_STRING:
                printfmqcfst(paras);
                paras = (MQCFST *) ((char *) paras
                                   + paras->StrucLength);

                break;
            case MQCFT_INTEGER:
                printfmqcfint((MQCFIN*) paras);
                paras = (MQCFST *) ((char *) paras
                                   + paras->StrucLength);

                break;
            default:
                printf("unknown parameter type, %ld\n",
                       paras->Type);
                counter = evtmsg->ParameterCount;
                break;
        }
        counter++;
    }
} /* end evtmsg action */
free(evtmsg);
} /* end process for successful GET */
} /* end message processing loop */

/******
/* close the event queue - if it was opened */
/******
if (OpenCode != MQCC_FAILED)
{
    C_options = 0; /* no close options */
    MQCLOSE(Hcon, /* connection handle */
            &Hobj, /* object handle */
            C_options,
            &CompCode, /* completion code */
            &Reason); /* reason code */
    /******
    /* Disconnect from queue manager (unless previously connected) */
    /******
}
```

```

/*****
if (CReason != MQRC_ALREADY_CONNECTED)
{
    MQDISC(&Hcon,          /* connection handle      */
          &CompCode,      /* completion code       */
          &Reason);      /* reason code           */
/*****
/*
/* END OF EVMON
/*
/*****
}

#define PRINTPARAM(param) \
    case param: \
    { \
        char *p = #param; \
        strncpy(thestring,pmqcfst->String,min(sizeof(thestring), \
        pmqcfst->StringLength)); \
        printf("%s %s\n",p,thestring); \
    } \
    break;

#define PRINTAT(param) \
    case param: \
        printf("MQIA_APPL_TYPE = %s\n",#param); \
        break;

void printfmqcfst(MQCFST* pmqcfst)
{
    char thestring[100];

    switch (pmqcfst->Parameter)
    {
        PRINTPARAM(MQCA_BASE_Q_NAME)
        PRINTPARAM(MQCA_PROCESS_NAME)
        PRINTPARAM(MQCA_Q_MGR_NAME)
        PRINTPARAM(MQCA_Q_NAME)
        PRINTPARAM(MQCA_XMIT_Q_NAME)
        PRINTPARAM(MQCACF_APPL_NAME)

        :

        default:
            printf("Invalid parameter, %ld\n",pmqcfst->Parameter);
            break;
    }
}

void printfmqcfst(MQCFIN* pmqcfst)
{
    switch (pmqcfst->Parameter)
    {
        case MQIA_APPL_TYPE:
            switch (pmqcfst->Value)
            {
                PRINTAT(MQAT_UNKNOWN)
            }
        }
    }
}

```

## Example using events

```
    PRINTAT(MQAT_OS2)
    PRINTAT(MQAT_DOS)
    PRINTAT(MQAT_UNIX)
    PRINTAT(MQAT_QMGR)
    PRINTAT(MQAT_OS400)
    PRINTAT(MQAT_WINDOWS)
    PRINTAT(MQAT_CICS_VSE)
    PRINTAT(MQAT_VMS)
    PRINTAT(MQAT_GUARDIAN)
    PRINTAT(MQAT_VOS)
}
break;
case MQIA_Q_TYPE:
if (pmqcfst->Value == MQQT_ALIAS)
{
    printf("MQIA_Q_TYPE is MQQT_ALIAS\n");
}
else
:
{
    if (pmqcfst->Value == MQQT_REMOTE)
    {
        printf("MQIA_Q_TYPE is MQQT_REMOTE\n");
        if (evtmsg->Reason == MQRC_ALIAS_BASE_Q_TYPE_ERROR)
        {
            printf("but remote is not valid here\n");
        }
    }
    else
    {
        printf("MQIA_Q_TYPE is wrong, %ld\n",pmqcfst->Value);
    }
}
break;
case MQIACF_REASON_QUALIFIER:
    printf("MQIACF_REASON_QUALIFIER %ld\n",pmqcfst->Value);
    break;

case MQIACF_ERROR_IDENTIFIER:
    printf("MQIACF_ERROR_IDENTIFIER %ld (X'%lX')\n",
        pmqcfst->Value,pmqcfst->Value);
    break;

case MQIACF_AUX_ERROR_DATA_INT_1:
    printf("MQIACF_AUX_ERROR_DATA_INT_1 %ld (X'%lX')\n",
        pmqcfst->Value,pmqcfst->Value);
    break;

case MQIACF_AUX_ERROR_DATA_INT_2:
    printf("MQIACF_AUX_ERROR_DATA_INT_2 %ld (X'%lX')\n",
        pmqcfst->Value,pmqcfst->Value);
    break;
:
default :
    printf("Invalid parameter, %ld\n",pmqcfst->Parameter);
    break;
```

```

    }
}

void printreas(MQLONG reason)
{
    switch (reason)
    {
        PRINTREAS(MQRCCF_CFH_TYPE_ERROR)
        PRINTREAS(MQRCCF_CFH_LENGTH_ERROR)
        PRINTREAS(MQRCCF_CFH_VERSION_ERROR)
        PRINTREAS(MQRCCF_CFH_MSG_SEQ_NUMBER_ERR)

        :
        PRINTREAS(MQRC_NO_MSG_LOCKED)
        PRINTREAS(MQRC_CONNECTION_NOT_AUTHORIZED)
        PRINTREAS(MQRC_MSG_TOO_BIG_FOR_CHANNEL)
        PRINTREAS(MQRC_CALL_IN_PROGRESS)
        default:
            printf("It's an unknown reason, %ld\n",
                reason);
            break;
    }
}

```

## Example using events

---

## Part 2. Programmable Command Formats

<b>Chapter 6. Introduction to Programmable Command Formats</b>	127
The problem PCF commands solve	127
What PCFs are	128
Other administration interfaces	128
The MQSeries Administration Interface (MQAI)	130
<b>Chapter 7. Using Programmable Command Formats</b>	131
PCF command messages	131
Responses	133
Authority checking for PCF commands	135
<b>Chapter 8. Definitions of the Programmable Command Formats</b>	139
How the definitions are shown	139
PCF commands and responses in groups	141
Change Channel	144
Change Namelist	163
Change Process	165
Change Queue	169
Change Queue Manager	183
Clear Queue	191
Copy Channel	193
Copy Namelist	212
Copy Process	215
Copy Queue	219
Create Channel	233
Create Namelist	252
Create Process	254
Create Queue	258
Delete Channel	272
Delete Namelist	274
Delete Process	275
Delete Queue	276
Escape	278
Escape (Response)	279
Inquire Channel	280
Inquire Channel (Response)	289
Inquire Channel Names	295
Inquire Channel Names (Response)	297
Inquire Channel Status	298
Inquire Channel Status (Response)	305
Inquire Cluster Queue Manager	310
Inquire Cluster Queue Manager (Response)	314
Inquire Namelist	321
Inquire Namelist (Response)	323
Inquire Namelist Names	324
Inquire Namelist Names (Response)	325
Inquire Process	326
Inquire Process (Response)	328
Inquire Process Names	330
Inquire Process Names (Response)	331

Inquire Queue	332
Inquire Queue (Response)	340
Inquire Queue Manager	348
Inquire Queue Manager (Response)	351
Inquire Queue Names	359
Inquire Queue Names (Response)	361
Ping Channel	362
Ping Queue Manager	365
Refresh Cluster	366
Reset Channel	367
Reset Cluster	369
Reset Queue Statistics	371
Reset Queue Statistics (Response)	373
Resolve Channel	374
Resume Queue Manager Cluster	376
Start Channel	378
Start Channel Initiator	380
Start Channel Listener	382
Stop Channel	383
Suspend Queue Manager Cluster	385
<b>Chapter 9. Structures used for commands and responses</b>	<b>387</b>
How the structures are shown	387
Usage notes	388
MQCFH - PCF header	388
MQCFIN - PCF integer parameter	395
MQCFST - PCF string parameter	397
MQCFIL - PCF integer list parameter	400
MQCFSL - PCF string list parameter	403
<b>Chapter 10. Example of using PCFs</b>	<b>409</b>
Enquire local queue attributes	409

---

## Chapter 6. Introduction to Programmable Command Formats

This chapter introduces MQSeries Programmable Command Formats (PCFs) and their relationship to other parts of the MQSeries products. It includes:

- “The problem PCF commands solve”
- “What PCFs are” on page 128
- “Other administration interfaces” on page 128
- “The MQSeries Administration Interface (MQAI)” on page 130

The Programmable Command Formats described in this book are supported by:

MQSeries for AIX  
 MQSeries for AS/400  
 MQSeries for AT&T GIS UNIX  
 MQSeries for Digital OpenVMS  
 MQSeries for HP-UX  
 MQSeries for OS/2 Warp  
 MQSeries for SINIX and DC/OSx  
 MQSeries for Sun Solaris  
 MQSeries for Tandem NonStop Kernel  
 MQSeries for Windows NT  
 MQSeries for Windows Version 2 Release 1

Event messages also use the Programmable Command Formats. See Chapter 1, “Using instrumentation events to monitor queue managers” on page 3.

---

### The problem PCF commands solve

The administration of distributed networks can become very complex. The problems of administration will continue to grow as networks increase in size and complexity.

Examples of administration specific to messaging and queuing include:

- Resource management.  
 For example, queue creation and deletion.
- Performance monitoring.  
 For example, maximum queue depth or message rate.
- Control.  
 For example, tuning queue parameters such as maximum queue depth, maximum message length, and enabling and disabling queues.
- Message routing.  
 Definition of alternative routes through a network.

MQSeries PCF commands can be used to simplify queue manager administration and other network administration. PCF commands allow you to use a single application to perform network administration from a single queue manager within the network.

### What PCFs are

PCFs define command and reply messages that can be exchanged between a program and any queue manager (that supports PCFs) in a network. You can use PCF commands in a systems management application program for administration of MQSeries objects: queue managers, process definitions, queues, and channels. The application can operate from a single point in the network to communicate command and reply information with any queue manager, local or remote, via the local queue manager.

Each queue manager has an administration queue with a standard queue name and your application can send PCF command messages to that queue. Each queue manager also has a command server to service the command messages from the administration queue. PCF command messages can therefore be processed by any queue manager in the network and the reply data can be returned to your application, using your specified reply queue. PCF commands and reply messages are sent and received using the normal Message Queue interface (MQI).

---

### Other administration interfaces

Administration of MQSeries objects may be carried out in other ways.

### MQSeries for AS/400

In addition to PCFs, there are two further administration interfaces:

#### **OS/400 Control Language (CL)**

This can be used to issue administration commands to MQSeries for AS/400. They can be issued either at the command line or by writing a CL program. These commands perform similar functions to PCF commands, but the format is completely different. CL commands are designed exclusively for OS/400 and CL responses are designed to be human-readable, whereas PCF commands are platform independent and both command and response formats are intended for program use.

#### **MQSeries Commands (MQSC)**

These provide a uniform method of issuing commands across MQSeries platforms. The general format of the commands is shown in Chapter 2, "The MQSeries commands" in the *MQSeries Command Reference* book.

To issue the commands on OS/400 you create a list of commands in a Script file, and then run the file using the STRMQMMQSC command.

MQSC responses are designed to be human readable, whereas PCF command and response formats are intended for program use.

### MQSeries for OS/390

MQSeries for OS/390 supports the MQSeries commands (MQSC). With OS/390 these commands can be entered from the OS/390 console, or sent to the system command input queue. More information about issuing the commands is given in Chapter 2, "The MQSeries commands" in the *MQSeries Command Reference* and the *MQSeries for OS/390 System Management Guide*.

**Note:** PCF commands are not supported by MQSeries for OS/390.

## MQSeries for Tandem NSK

In addition to PCFs, there are three further administrative interfaces:

- MQSeries commands (MQSC)
- Control commands
- Message Queue Management (MQM) facility

MQSeries for Tandem NSK provides a panel interface for some of the functions. For full details see the *MQSeries for Tandem NonStop Kernel System Management Guide*.

## MQSeries for Windows

MQSeries for Windows supports the MQSeries commands (MQSC). You can enter these commands in a window provided by the MQSC utility, and also run MQSC command files.

## MQSeries for Windows NT, OS/2 Warp, Digital OpenVMS, and UNIX systems

In addition to PCFs, there are four further administrative interfaces:

### MQSeries commands (MQSC)

You can use the MQSC as single commands issued at the OS/2 Warp, Windows NT, or UNIX system command line. To issue more complicated, or multiple commands, the MQSC can be built into a file that you run from the OS/2 Warp, Windows NT, or UNIX system command line. MQSC can be sent to a remote queue manager. For full details see Chapter 2, “The MQSeries commands” in the *MQSeries Command Reference* book.

### Control commands

MQSeries for OS/2 Warp, Windows NT, and UNIX systems provides another type of command for some of the functions. These are the *control commands* that you issue at the system command line. Reference material for these commands is contained in Chapter 17, “MQSeries control commands” in the *MQSeries System Administration* book.

### Web administration (Windows NT only)

MQSeries for Windows NT provides a web-based application that allows you to administer all systems in your MQSeries network from a Windows NT workstation. The application shows you how to use MQSeries command facilities either as individual commands or multiple commands from a script.

You invoke Web Administration services at the Windows NT Start prompt and select **Web Admin** from the MQSeries for Windows NT list. For full details see Chapter 2, “An introduction to MQSeries administration” in the *MQSeries System Administration* book.

## MQSeries Explorer (Windows NT only)

The MQSeries Explorer is an application that runs under the Microsoft Management Console (MMC). It provides a graphical user interface for controlling resources in a network. For full details see Chapter 3, "Administration using the MQSeries Explorer" in the *MQSeries System Administration* book.

---

## The MQSeries Administration Interface (MQAI)

In addition to the methods described in "Other administration interfaces" on page 128, MQSeries for Windows NT, OS/2 Warp, AIX, HP-UX, and Sun Solaris support the MQSeries Administration Interface (MQAI).

The MQAI is a programming interface to MQSeries that gives you an alternative to the MQI, for sending and receiving PCFs. The MQAI uses *data bags* which allow you to handle properties (or parameters) of objects more easily than using PCFs directly via the MQI.

The MQAI provides easier programming access to PCF messages by passing parameters into the data bag, so that only one statement is required for each structure. This removes the need for the programmer to handle arrays and allocate storage, and provides some isolation from the details of PCF.

The MQAI administers MQSeries by sending PCF messages to the command server and waiting for a response.

The MQAI is described in the *MQSeries Administration Interface Programming Guide and Reference* book. See the *MQSeries for Windows NT Using the Component Object Model Interface* book for a description of a component object model interface to the MQAI.

---

## Chapter 7. Using Programmable Command Formats

This chapter describes how to use the PCFs in a systems management application program for MQSeries remote administration. The chapter includes:

- “PCF command messages”
- “Responses” on page 133
- “Authority checking for PCF commands” on page 135

---

### PCF command messages

Each command and its parameters are sent as a separate command message containing a PCF header followed by a number of parameter structures (see “MQCFH - PCF header” on page 388). The PCF header identifies the command and the number of parameter structures that follow in the same message. Each parameter structure provides a parameter to the command.

Replies to the commands, generated by the command server, have a similar structure. There is a PCF header, followed by a number of parameter structures. Replies can consist of more than one message but commands always consist of one message only.

The queue to which the PCF commands are sent is always called the SYSTEM.ADMIN.COMMAND.QUEUE. The command server servicing this queue sends the replies to the queue defined by the *ReplyToQ* and *ReplyToQMgr* fields in the message descriptor of the command message.

### How to issue PCF command messages

Use the normal Message Queue Interface (MQI) calls, MQPUT, MQGET and so on, to put and retrieve PCF command and response messages to and from their respective queues.

#### Note to users

You must start the command server on the target queue manager for the PCF command to process on that queue manager.

For a list of supplied header files, see Appendix C, “Header, COPY, and INCLUDE files” on page 571.

### Message descriptor for a PCF command

The MQSeries message descriptor is fully documented in “MQMD - Message descriptor” in the *MQSeries Application Programming Reference* manual.

A PCF command message contains the following fields in the message descriptor:

#### *Report*

Any valid value, as required.

#### *MsgType*

This must be MQMT\_REQUEST to indicate a message requiring a response.

### *Expiry*

Any valid value, as required.

### *Feedback*

Set to MQFB\_NONE

### *Encoding*

If you are sending to AS/400, OS/2, Windows NT, or UNIX systems, set this field to the encoding used for the message data; conversion will be performed if necessary.

### *CodedCharSetId*

If you are sending to AS/400, OS/2, Windows NT, or UNIX systems, set this field to the coded character-set identifier used for the message data; conversion will be performed if necessary.

### *Format*

Set to MQFMT\_ADMIN.

### *Priority*

Any valid value, as required.

### *Persistence*

Any valid value, as required.

### *MsgId*

The sending application may specify any value, or MQMI\_NONE can be specified to request the queue manager to generate a unique message identifier.

### *CorrelId*

The sending application may specify any value, or MQCI\_NONE can be specified to indicate no correlation identifier.

### *ReplyToQ*

The name of the queue to receive the response.

### *ReplyToQMGr*

The name of the queue manager for the response (or blank).

### Message context fields

These can be set to any valid values, as required. Normally the Put message option MQPMO\_DEFAULT\_CONTEXT is used to set the message context fields to the default values.

If you are using a version-2 MQMD structure, you must set the following additional fields:

### *GroupId*

Set to MQGI\_NONE

### *MsgSeqNumber*

Set to 1

### *Offset*

Set to 0

### *MsgFlags*

Set to MQMF\_NONE

*OriginalLength*  
Set to MQOL\_UNDEFINED

## Sending user data

The PCF structures can also be used to send user-defined message data. In this case the message descriptor *Format* field should be set to MQFMT\_PCF.

---

## Responses

In response to each command, the command server generates one or more response messages. A response message has a similar format to a command message; the PCF header has the same command identifier value as the command to which it is a response (see “MQCFH - PCF header” on page 388 for details). The message identifier and correlation identifier are set according to the report options of the request.

If a single command specifies a generic object name, a separate response is returned in its own message for each matching object. For the purpose of response generation, a single command with a generic name is treated as multiple individual commands (except for the control field MQCFC\_LAST or MQCFC\_NOT\_LAST). Otherwise, one command message generates one response message.

Certain PCF responses may return a structure even when it is not requested. This is shown in the definition of the response (Chapter 8) as *always returned*. The reason for this is that, for these responses, it is necessary to name the objects in the response so that one can know to which object the data applies.

There are three types of response, described below:

- OK response
- Error response
- Data response

### OK response

This consists of a message starting with a command format header, with a *CompCode* field of MQCC\_OK or MQCC\_WARNING.

For MQCC\_OK, the *Reason* is MQRC\_NONE.

For MQCC\_WARNING, the *Reason* identifies the nature of the warning. In this case the command format header may be followed by one or more warning parameter structures appropriate to this reason code.

In either case, for an inquire command further parameter structures may follow as described below.

### Error response

If the command has an error, one or more error response messages are sent (more than one may be sent even for a command which would normally only have a single response message). These error response messages have MQCFC\_LAST or MQCFC\_NOT\_LAST set as appropriate.

Each such message starts with a response format header, with a *CompCode* value of MQCC\_FAILED and a *Reason* field which identifies the particular error. In general each message describes a different error. In addition, each message has either zero or one (never more than one) error parameter structures following the header. This parameter structure, if there is one, is an MQCFIN structure, with a *Parameter* field containing one of the following:

- MQIACF\_PARAMETER\_ID  
The *Value* field in the structure is the parameter identifier of the parameter that was in error (for example, MQCA\_Q\_NAME).
- MQIACF\_ERROR\_ID  
This is used with a *Reason* value (in the command format header) of MQRCC\_UNEXPECTED\_ERROR. The *Value* field in the MQCFIN structure is the unexpected reason code received by the command server.
- MQIACF\_SELECTOR  
This occurs if a list structure (MQCFIL) sent with the command contains an invalid or duplicate selector. The *Reason* field in the command format header identifies the error, and the *Value* field in the MQCFIN structure is the parameter value in the MQCFIL structure of the command that was in error.
- MQIACF\_ERROR\_OFFSET  
This occurs when there is a data compare error on the Ping Channel command. The *Value* field in the structure is the offset of the Ping Channel compare error.
- MQIA\_CODED\_CHAR\_SET\_ID  
This occurs when the coded character-set identifier in the message descriptor of the incoming PCF command message does not match that of the target queue manager. The *Value* field in the structure is the coded character-set identifier of the queue manager.

The last (or only) error response message is a summary response, with a *CompCode* field of MQCC\_FAILED, and a *Reason* field of MQRCCF\_COMMAND\_FAILED. This message has no parameter structure following the header.

### Data response

This consists of an OK response (as described above) to an inquire command. The OK response is followed by additional structures containing the requested data as described in Chapter 8, “Definitions of the Programmable Command Formats” on page 139.

Applications should not depend upon these additional parameter structures being returned in any particular order.

## Message descriptor for a response

A response message (obtained using the Get-message option MQGMO\_CONVERT) has the following fields in the message descriptor, defined by the putter of the message. The actual values in the fields are generated by the queue manager:

*MsgType*

This is MQMT\_REPLY.

*MsgId*

This is generated by the queue manager.

*CorrelId*

This is generated according to the report options of the command message.

*Format*

This is MQFMT\_ADMIN.

*Encoding*

Set to MQENC\_NATIVE.

*CodedCharSetId*

Set to MQCCSI\_Q\_MGR.

*Persistence*

The same as in the command message.

*Priority*

The same as in the command message.

The response is generated with MQPMO\_PASS\_IDENTITY\_CONTEXT.

---

## Authority checking for PCF commands

When a PCF command is processed, the *UserIdentifier* from the message descriptor in the command message is used for the required MQSeries object authority checks. The checks are performed on the system on which the command is being processed, therefore this user ID must exist on the target system and have the required authorities to process the command. If the message has come from a remote system, one way of achieving this is to have a matching user ID on both the local and remote systems.

Authority checking is implemented differently on each platform.

## MQSeries for AS/400

In order to process any PCF command, the user ID must have \*READ authority for the MQSeries object on the target system.

In addition, MQSeries object authority checks are performed for certain PCF commands, as shown in Table 16 on page 136. In most cases these are the same checks as those performed by the equivalent MQSeries CL commands issued on a local system. See the *MQSeries for AS/400 Administration Guide* for more information on the mapping from MQSeries authorities to OS/400 system authorities, and the authority requirements for the MQSeries CL commands. Details of security concerning exits are given in Chapter 35, "Channel-exit programs" the *MQSeries Intercommunication* book.

## Authority checking

To process any of the following commands the user ID must have \*ALLOBJ authority, or the user ID must be QPGMR or QSYSOPR:

- Ping Channel
- Change Channel
- Copy Channel
- Create Channel
- Delete Channel
- Reset Channel
- Resolve Channel
- Start Channel
- Stop Channel
- Start Channel Initiator
- Start Channel Listener

Command	MQSeries object authority	*CTLG authority
Change Queue	*READ and *UPD	n/a
Change Queue Manager	*READ and *UPD	n/a
Change Process	*READ and *UPD	n/a
Clear Queue	*READ and *DLT	n/a
Copy Process	from: *READ	*ADD
Copy Process (Replace)	from: *READ to: *OBJOPR and *UPD	n/a
Copy Queue	from: *READ	*ADD
Copy Queue (Replace)	from: *READ to: *OBJOPR and *UPD	n/a
Create Process	(system default process) *READ	*ADD
Create Process (Replace)	(system default process) *READ to: *OBJOPR and *UPD	n/a
Create Queue	(system default queue) *READ	*ADD
Create Queue (Replace)	(system default queue) *READ to: *OBJOPR and *UPD	n/a
Delete Process	*OBJEXIST	*DLT
Delete Queue	*OBJEXIST	*DLT
Inquire Queue	*READ	n/a
Inquire Queue Manager	*READ	n/a
Inquire Process	*READ	n/a
Reset Queue Statistics	*UPD	n/a
Escape	see Note	see Note
<b>Note:</b> The required authority is determined by the MQSC command defined by the escape text, and it will be equivalent to one of the above.		

## MQSeries for OS/2 Warp

If there is no authorization service installed, or if the PCF command is a channel command, OS/2 performs no additional security checking other than making sure that the *UserIdentifier* of the message descriptor is not set to blanks. If there is an installed authorization service, this controls access to the queue manager, queue, and process objects, with access to channels unaffected.

MQSeries also has some channel security exit points so that you can supply your own user exit programs for security checking. Details are given in Chapter 35, "Channel-exit programs" in the *MQSeries Intercommunication* book.

## MQSeries for Windows NT, Digital OpenVMS, Tandem NSK, and UNIX systems

In order to process any PCF command, the user ID must have *dsp* authority for the queue manager object on the target system. In addition, MQSeries object authority checks are performed for certain PCF commands, as shown in Table 17.

**To process any of the following commands** the user ID must belong to group *mqm*.

**Note:** For Windows NT **only** the user ID may belong to group *Administrators* or group *mqm*.

- Change Channel
- Copy Channel
- Create Channel
- Delete Channel
- Ping Channel
- Reset Channel
- Start Channel
- Stop Channel
- Start Channel Initiator
- Start Channel Listener
- Resolve Channel

Table 17 (Page 1 of 2). MQSeries for Windows NT, Digital OpenVMS, Tandem NSK, and UNIX systems - object authorities

Command	MQSeries object authority	Class authority (for object type)
Change Queue	chg	n/a
Change Queue Manager	chg	n/a
Change Process	chg	n/a
Clear Queue	clr	n/a
Copy Process	from: dsp	crt
Copy Process (Replace) see Note 1	from: dsp to: chg	n/a
Copy Queue	from: dsp	crt
Copy Queue (Replace) see Note 1	from: dsp to: chg	n/a
Create Process	(system default process) dsp	crt

## Authority checking

<i>Table 17 (Page 2 of 2). MQSeries for Windows NT, Digital OpenVMS, Tandem NSK, and UNIX systems - object authorities</i>		
<b>Command</b>	<b>MQSeries object authority</b>	<b>Class authority (for object type)</b>
Create Process (Replace) <i>see Note 1</i>	<i>(system default process) dsp to: chg</i>	n/a
Create Queue	<i>(system default queue) dsp</i>	crt
Create Queue (Replace) <i>see Note 1</i>	<i>(system default queue) dsp to: n/a</i>	crt
Delete Process	dlt	n/a
Delete Queue	dlt	n/a
Inquire Queue	dsp	n/a
Inquire Queue Manager	dsp	n/a
Inquire Process	dsp	n/a
Reset Queue Statistics	dsp and chg	n/a
Escape	<i>see Note 2</i>	<i>see Note 2</i>
<b>Notes:</b>		
<ol style="list-style-type: none"> <li>1. This applies if the object to be replaced does already exist, otherwise the authority check is as for Create without Replace.</li> <li>2. The required authority is determined by the MQSC command defined by the escape text, and it will be equivalent to one of the above.</li> </ol>		

MQSeries also supplies some channel security exit points so that you can supply your own user exit programs for security checking. Details are given in Chapter 35, "Channel-exit programs" in the *MQSeries Intercommunication* book.

## Chapter 8. Definitions of the Programmable Command Formats

This chapter contains reference material for the Programmable Command Formats (PCFs) of commands and responses sent between an MQSeries systems management application program and an MQSeries queue manager.

The chapter discusses:

- “How the definitions are shown”
- “PCF commands and responses in groups” on page 141

### How the definitions are shown

For each PCF command or response there is a description of what the command or response does, giving the command identifier in parentheses. See “MQCFH - PCF header” on page 388 for details of the command identifier.

#### Notes to users

1. The PCFs listed in “PCF commands and responses in groups” on page 141 are available on all platforms to which this book applies, **except OS/390**, unless specific limitations are shown at the start of a structure.
2. MQSeries for Windows V2.0 does not support PCFs.
3. You cannot use PCF commands to work with MQSeries connections or channel groups on MQSeries for Windows Version 2.1.
4. The MQSeries Version 5.1 products provide a new programming interface, the MQSeries Administration Interface (MQAI), which provides a simplified way for applications written in the C and Visual Basic programming language to build and send PCF commands.

On MQSeries for Windows NT Version 5.1 you can use the Microsoft Active Directory Services Interface (ADSI), as well as PCFs, to inquire about and set parameters.

For information on the MQAI see the *MQSeries Administration Interface Programming Guide and Reference* book, and for information on using Microsoft ADSI see Chapter 6, “Using the Active Directory Service Interfaces (ADSI)” in the *MQseries for Windows NT Using the Component Object Model Interface* book.

### Commands

The *required parameters* and the *optional parameters* are listed. The parameters **must** occur in the order:

1. All required parameters, in the order stated, followed by
2. Optional parameters as required, in any order, unless specifically noted in the PCF definition.

## Responses

The response data attribute is *always returned* whether it is requested or not. This parameter is required to identify, uniquely, the object when there is a possibility of multiple reply messages being returned.

The other attributes shown are *returned if requested* as optional parameters on the command. The response data attributes are not returned in a defined order.

## Parameters and response data

Each parameter name is followed by its structure name in parentheses (details are given in Chapter 9, “Structures used for commands and responses” on page 387). The parameter identifier is given at the beginning of the description.

## Constants

The values of constants used by PCF commands and responses are included in Appendix B, “Constants” on page 555.

## Error codes

At the end of each command format definition there is a list of error codes that may be returned by that command. Full descriptions are given in the alphabetic list in Appendix A, “Error codes” on page 535.

### Error codes applicable to all commands

In addition to those listed under each command format, any command may return the following in the response format header (descriptions of the MQRC\_\* error codes are given in “Reason codes” in the *MQSeries Application Programming Reference* manual):

*Reason* (MQLONG)

The value may be:

MQRC\_CONNECTION\_BROKEN  
(2009, X'7D9') Connection to queue manager lost.

MQRC\_NOT\_AUTHORIZED  
(2035, X'7F3') Not authorized for access.

MQRC\_STORAGE\_NOT\_AVAILABLE  
(2071, X'817') Insufficient storage available.

MQRC\_MSG\_TOO\_BIG\_FOR\_Q  
(2030, X'7EE') Message length greater than maximum for queue.

MQRC\_NONE  
(0, X'000') No reason to report.

MQRCCF\_COMMAND\_FAILED  
Command failed.

MQRCCF\_CFH\_COMMAND\_ERROR  
Command identifier not valid.

MQRCCF\_CFH\_CONTROL\_ERROR  
Control option not valid.

MQRCCF_CFH_LENGTH_ERROR	Structure length not valid.
MQRCCF_CFH_MSG_SEQ_NUMBER_ERR	Message sequence number not valid.
MQRCCF_CFH_PARM_COUNT_ERROR	Parameter count not valid.
MQRCCF_CFH_TYPE_ERROR	Type not valid.
MQRCCF_CFH_VERSION_ERROR	Structure version number is not valid.
MQRCCF_ENCODING_ERROR	Encoding error.
MQRCCF_MD_FORMAT_ERROR	Format not valid.
MQRCCF_MSG_TRUNCATED	Message truncated.
MQRCCF_MSG_LENGTH_ERROR	Message length not valid.
MQRCCF_MSG_SEQ_NUMBER_ERROR	Message sequence number not valid.

---

## PCF commands and responses in groups

The commands and data responses are given in alphabetic order in this chapter. They can be usefully grouped as follows:

### ***Queue Manager commands***

- “Change Queue Manager” on page 183
- “Inquire Queue Manager” on page 348
- “Ping Queue Manager” on page 365

### ***Namelist commands***

- “Change Namelist” on page 163
- “Copy Namelist” on page 212
- “Create Namelist” on page 252
- “Delete Namelist” on page 274
- “Inquire Namelist” on page 321
- “Inquire Namelist Names” on page 324

### ***Process commands***

- “Change Process” on page 165
- “Copy Process” on page 215
- “Create Process” on page 254
- “Delete Process” on page 275
- “Inquire Process” on page 326
- “Inquire Process Names” on page 330

### **Queue commands**

- “Change Queue” on page 169
- “Clear Queue” on page 191
- “Copy Queue” on page 219
- “Create Queue” on page 258
- “Delete Queue” on page 276
- “Inquire Queue” on page 332
- “Inquire Queue Names” on page 359

### **Channel commands**

- “Change Channel” on page 144
- “Copy Channel” on page 193
- “Create Channel” on page 233
- “Delete Channel” on page 272
- “Inquire Channel” on page 280
- “Inquire Channel Names” on page 295
- “Inquire Channel Status” on page 298
- “Ping Channel” on page 362
- “Reset Channel” on page 367
- “Resolve Channel” on page 374
- “Start Channel” on page 378
- “Start Channel Initiator” on page 380
- “Start Channel Listener” on page 382
- “Stop Channel” on page 383

### **Statistics command**

- “Reset Queue Statistics” on page 371

### **Escape command**

- “Escape” on page 278

### **Cluster commands**

- “Inquire Cluster Queue Manager” on page 310
- “Refresh Cluster” on page 366
- “Reset Cluster” on page 369
- “Resume Queue Manager Cluster” on page 376
- “Suspend Queue Manager Cluster” on page 385

***Data responses to commands***

- “Escape (Response)” on page 279
- “Inquire Channel (Response)” on page 289
- “Inquire Channel Names (Response)” on page 297
- “Inquire Channel Status (Response)” on page 305
- “Inquire Cluster Queue Manager (Response)” on page 314
- “Inquire Namelist (Response)” on page 323
- “Inquire Namelist Names (Response)” on page 325
- “Inquire Process (Response)” on page 328
- “Inquire Process Names (Response)” on page 331
- “Inquire Queue (Response)” on page 340
- “Inquire Queue Manager (Response)” on page 351
- “Inquire Queue Names (Response)” on page 361
- “Reset Queue Statistics (Response)” on page 373

---

## Change Channel

The Change Channel (MQCMD\_CHANGE\_CHANNEL) command changes the specified attributes in a channel definition.

This PCF is supported on all platforms.

For any optional parameters that are omitted, the value does not change.

**Required parameters:**

*ChannelName, ChannelType*

**Optional parameters (any ChannelType):**

*TransportType, ChannelDesc, SecurityExit, MsgExit, SendExit, ReceiveExit, MaxMsgLength, SecurityUserData, MsgUserData, SendUserData, ReceiveUserData*

**Optional parameters (sender or server ChannelType):**

*ModeName, TpName, ConnectionName, XmitQName, MCAName, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, SeqNumberWrap, DataConversion, MCAType, MCAUserIdentifier, UserIdentifier, Password, HeartbeatInterval, NonPersistentMsgSpeed BatchInterval*

**Optional parameters (receiver ChannelType):**

*BatchSize, PutAuthority, SeqNumberWrap, MCAUserIdentifier, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed*

**Optional parameters (requester ChannelType):**

*ModeName, TpName, ConnectionName, MCAName, BatchSize, PutAuthority, SeqNumberWrap, MCAType, MCAUserIdentifier, UserIdentifier, Password, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed*

**Optional parameters (server-connection ChannelType):**

*MCAUserIdentifier*

**Optional parameters (client-connection ChannelType):**

*ModeName, TpName, QMgrName, ConnectionName, UserIdentifier, Password*

**Optional parameters (cluster-receiver ChannelType):**

*ModeName, TpName, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, DataConversion, BatchSize, PutAuthority, SeqNumberWrap, MCAUserIdentifier, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, ClusterName, ClusterNameList, ConnectionName, NetworkPriority*

**Optional parameters (cluster-sender ChannelType):**

*ModeName, TpName, ConnectionName, MCAName, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, SeqNumberWrap, DataConversion, MCAType, MCAUserIdentifier, UserIdentifier, Password, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, ClusterName, ClusterNameList*

## Required parameters

### *ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

Specifies the name of the channel definition to be changed.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### *ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

Specifies the type of the channel being changed. The value may be:

MQCHT\_SENDER

Sender.

MQCHT\_SERVER

Server.

MQCHT\_RECEIVER

Receiver.

MQCHT\_REQUESTER

Requester.

MQCHT\_SVRCONN

Server-connection (for use by clients).

This value is not supported in the following environment: 32-bit Windows.

MQCHT\_CLNTCONN

Client connection.

This value is not supported in the following environments: OS/400, 32-bit Windows.

MQCHT\_CLUSRCVR

Cluster-receiver.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCHT\_CLUSSDR

Cluster-sender.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Optional parameters

### *TransportType* (MQCFIN)

Transmission protocol type (parameter identifier: MQIACH\_XMIT\_PROTOCOL\_TYPE).

No check is made that the correct transport type has been specified if the channel is initiated from the other end. The value may be:

MQXPT\_LU62

LU 6.2.

This value is not supported on 32-bit Windows.

## Change Channel

MQXPT\_TCP  
TCP.

This is the *only* value supported on 32-bit Windows.

MQXPT\_NETBIOS  
NetBIOS.

This value is supported in the following environments: OS/2, 32-bit Windows, Windows NT.

MQXPT\_SPX  
SPX.

This value is supported in the following environments: OS/2, Windows NT, Windows client, DOS client.

MQXPT\_DECNET  
DECnet.

This value is supported in the following environment: Digital OpenVMS.

MQXPT\_UDP  
UDP.

This value is supported in the following environments: 16-bit Windows, AIX.

### *ChannelDesc* (MQCFST)

Channel description (parameter identifier: MQCACH\_DESC).

The maximum length of the string is MQ\_CHANNEL\_DESC\_LENGTH.

Use characters from the character set, identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing, to ensure that the text is translated correctly.

### *SecurityExit* (MQCFST)

Security exit name (parameter identifier: MQCACH\_SEC\_EXIT\_NAME).

If a nonblank name is defined, the security exit is invoked at the following times:

- Immediately after establishing a channel.  
Before any messages are transferred, the exit is given the opportunity to instigate security flows to validate connection authorization.
- Upon receipt of a response to a security message flow.  
Any security message flows received from the remote processor on the remote machine are passed to the exit.

The exit is given the entire application message and message descriptor for modification.

The format of the string depends on the platform, as follows:

- On UNIX systems, it is of the form  
libraryname(functionname)
- On OS/2, Windows NT, and Windows 3.1, it is of the form  
dllname(functionname)

where *dllname* is specified without the suffix “.DLL”.

- On OS/400, it is of the form

progrname libname

where *progrname* occupies the first 10 characters, and *libname* the second 10 characters (both blank-padded to the right if necessary).

- On Digital OpenVMS, it is of the form

imagenam(functionname)

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

#### *MsgExit* (MQCFSL)

Message exit name (parameter identifier: MQCACH\_MSG\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked immediately after a message has been retrieved from the transmission queue. The exit is given the entire application message and message descriptor for modification.

For channels with a channel type (*ChannelType*) of MQCHT\_SVRCONN or MQCHT\_CLNTCONN, this parameter is not relevant, since message exits are not invoked for such channels.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

#### *SendExit* (MQCFSL)

Send exit name (parameter identifier: MQCACH\_SEND\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked immediately before data is sent out on the network. The exit is given the complete transmission buffer before it is transmitted; the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

### *ReceiveExit* (MQCFSL)

Receive exit name (parameter identifier: MQCACH\_RCV\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked before data received from the network is processed. The complete transmission buffer is passed to the exit and the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIACH\_MAX\_MSG\_LENGTH).

Specifies the maximum message length that can be transmitted on the channel. This is compared with the value for the remote channel and the actual maximum is the lowest of the two values.

The value zero means the maximum message length for the queue manager.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems not listed above, and 32-bit Windows, the maximum message length is 4 MB (4 194 304 bytes).

#### *SecurityUserData* (MQCFST)

Security exit user data (parameter identifier: MQCACH\_SEC\_EXIT\_USER\_DATA).

Specifies user data that is passed to the security exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

#### *MsgUserData* (MQCFSL)

Message exit user data (parameter identifier: MQCACH\_MSG\_EXIT\_USER\_DATA).

Specifies user data that is passed to the message exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *MsgExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

#### *SendUserData* (MQCFSL)

Send exit user data (parameter identifier: MQCACH\_SEND\_EXIT\_USER\_DATA).

Specifies user data that is passed to the send exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

## Change Channel

- Each exit user data string is passed to the exit at the same ordinal position in the *SendExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

### *ReceiveUserData* (MQCFSL)

Receive exit user data (parameter identifier: MQCACH\_RCV\_EXIT\_USER\_DATA).

Specifies user data that is passed to the receive exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *ReceiveExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

### *ModeName* (MQCFST)

Mode name (parameter identifier: MQCACH\_MODE\_NAME).

This is the LU 6.2 mode name.

The maximum length of the string is MQ\_MODE\_NAME\_LENGTH.

- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT, this can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows NT) from the CPI-C symbolic destination name properties.
- On 32-bit Windows, this parameter is accepted but ignored.

This parameter is valid only for channels with a *TransportType* of MQXPT\_LU62. It is not valid for receiver channels.

### *TpName* (MQCFST)

Transaction program name (parameter identifier: MQCACH\_TP\_NAME).

This is the LU 6.2 transaction program name.

The maximum length of the string is MQ\_TP\_NAME\_LENGTH.

On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT, this can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows NT) from the CPI-C symbolic destination name properties.

- On 32-bit Windows, this parameter is accepted but ignored.

This parameter is valid only for channels with a *TransportType* of MQXPT\_LU62. It is not valid for receiver channels.

#### *ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

Specify the name of the machine as required for the stated *TransportType*:

- For MQXPT\_LU62 on OS/2, specify the fully-qualified name of the partner LU. On OS/400, and UNIX systems, specify the name of the CPI-C communications side object. On Windows NT specify the CPI-C symbolic destination name.
- For MQXPT\_TCP specify either the host name or the network address of the remote machine.
- For MQXPT\_NETBIOS specify the NetBIOS station name.
- For MQXPT\_SPX specify the 4 byte network address, the 6 byte node address, and the 2 byte socket number. These should be entered in hexadecimal, with a period separating the network and node addresses. The socket number should be enclosed in brackets, for example:

```
CONNAME('0a0b0c0d.804abcde23a1(5e86)')
```

If the socket number is omitted, the MQSeries default value (5e86 hex) is assumed.

- For MQXPT\_UDP specify either the host name or the network address of the remote machine.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

#### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

A transmission queue name is required (either previously defined or specified here) if *ChannelType* is MQCHT\_SENDER or MQCHT\_SERVER. It is not valid for other channel types.

#### *MCAName* (MQCFST)

Message channel agent name (parameter identifier: MQCACH\_MCA\_NAME).

## Change Channel

This is reserved, and if specified can be set only to blanks.

The maximum length of the string is MQ\_MCA\_NAME\_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *BatchSize* (MQCFIN)

Batch size (parameter identifier: MQIACH\_BATCH\_SIZE).

The maximum number of messages that should be sent down a channel before a checkpoint is taken.

The batch size which is actually used is the lowest of the following:

- The *BatchSize* of the sending channel
- The *BatchSize* of the receiving channel
- The maximum number of uncommitted messages at the sending queue manager
- The maximum number of uncommitted messages at the receiving queue manager

The maximum number of uncommitted messages is specified by the *MaxUncommittedMsgs* parameter of the Change Queue Manager command.

Specify a value in the range 1-9999.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_SVRCONN or MQCHT\_CLNTCONN.

### *DiscInterval* (MQCFIN)

Disconnection interval (parameter identifier: MQIACH\_DISC\_INTERVAL).

This defines the maximum number of seconds that the channel waits for messages to be put on a transmission queue before terminating the channel. A value of zero causes the message channel agent to wait indefinitely.

Specify a value in the range 0 through 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ShortRetryCount* (MQCFIN)

Short retry count (parameter identifier: MQIACH\_SHORT\_RETRY).

The maximum number of attempts that are made by a sender or server channel to establish a connection to the remote machine, at intervals specified by *ShortRetryInterval* before the (normally longer) *LongRetryCount* and *LongRetryInterval* are used.

Retry attempts are made if the channel fails to connect initially (whether it is started automatically by the channel initiator or by an explicit command), and also if the connection fails after the channel has successfully connected. However, if the cause of the failure is such that retry is unlikely to be successful, retries are not attempted.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*ShortRetryInterval* (MQCFIN)

Short timer (parameter identifier: MQIACH\_SHORT\_TIMER).

Specifies the short retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 through 999 999. Values exceeding this are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*LongRetryCount* (MQCFIN)

Long retry count (parameter identifier: MQIACH\_LONG\_RETRY).

When a sender or server channel is attempting to connect to the remote machine, and the count specified by *ShortRetryCount* has been exhausted, this specifies the maximum number of further attempts that are made to connect to the remote machine, at intervals specified by *LongRetryInterval*.

If this count is also exhausted without success, an error is logged to the operator, and the channel is stopped. The channel must subsequently be restarted with a command (it is not started automatically by the channel initiator), and it then makes only one attempt to connect, as it is assumed that the problem has now been cleared by the administrator. The retry sequence is not carried out again until after the channel has successfully connected.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*LongRetryInterval* (MQCFIN)

Long timer (parameter identifier: MQIACH\_LONG\_TIMER).

Specifies the long retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine, after the count specified by *ShortRetryCount* has been exhausted.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 through 999 999. Values exceeding this are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*DataConversion* (MQCFIN)

Whether sender should convert application data (parameter identifier: MQIACH\_DATA\_CONVERSION).

## Change Channel

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

The value may be:

MQCDC\_NO\_SENDER\_CONVERSION

No conversion by sender.

MQCDC\_SENDER\_CONVERSION

Conversion by sender.

This value is not supported on 32-bit Windows.

### *PutAuthority* (MQCFIN)

Put authority (parameter identifier: MQIACH\_PUT\_AUTHORITY).

Specifies whether the user identifier in the context information associated with a message should be used to establish authority to put the message on the destination queue.

This parameter is valid only for channels with a *ChannelType* value of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

The value may be:

MQPA\_DEFAULT

Default user identifier is used.

MQPA\_CONTEXT

Context user identifier is used.

### *SeqNumberWrap* (MQCFIN)

Sequence wrap number (parameter identifier: MQIACH\_SEQUENCE\_NUMBER\_WRAP).

Specifies the maximum message sequence number. When the maximum is reached, sequence numbers wrap to start again at 1.

The maximum message sequence number is not negotiable; the local and remote channels must wrap at the same number.

Specify a value in the range 100 through 999 999 999.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_SVRCONN or MQCHT\_CLNTCONN.

### *MCAType* (MQCFIN)

Message channel agent type (parameter identifier: MQIACH\_MCA\_TYPE).

Specifies the type of the message channel agent program.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, or MQCHT\_CLUSSDR.

The value may be:

MQMCAT\_PROCESS

Process.

MQMCAT\_THREAD

Thread (OS/2 and Windows NT only).

*MCAUserIdentifier* (MQCFST)

Message channel agent user identifier (parameter identifier: MQCACH\_MCA\_USER\_ID).

If this is nonblank, it is the user identifier which is to be used by the message channel agent for authorization to access MQSeries resources, including (if *PutAuthority* is MQPA\_DEFAULT) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default user identifier. This user identifier can be overridden by one supplied by a channel security exit.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_CLNTCONN.

The maximum length of the MCA user identifier depends on the environment in which the MCA is running. MQ\_MCA\_USER\_ID\_LENGTH gives the maximum length for the environment for which your application is running. MQ\_MAX\_MCA\_USER\_ID\_LENGTH gives the maximum for all supported environments.

On Windows NT, you can optionally qualify a user identifier with the domain name in the following format:

user@domain

*UserIdentifier* (MQCFST)

Task user identifier (parameter identifier: MQCACH\_USER\_ID).

This is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent. It is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

- This parameter is supported in the following environments: Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems.
- On 32-bit Windows, the parameter is accepted but ignored.

The maximum length of the string is MQ\_USER\_ID\_LENGTH. However, only the first 10 characters are used.

*Password* (MQCFST)

Password (parameter identifier: MQCACH\_PASSWORD).

This is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent. It is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, or MQCHT\_CLUSSDR.

- This parameter is supported in the following environments: Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems.
- On 32-bit Windows, the parameter is accepted but ignored.

The maximum length of the string is MQ\_PASSWORD\_LENGTH. However, only the first 10 characters are used.

### *MsgRetryExit* (MQCFST)

Message retry exit name (parameter identifier: MQCACH\_MR\_EXIT\_NAME).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be blank.

If a nonblank name is defined, the exit is invoked prior to performing a wait before retrying a failing message.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryUserData* (MQCFST)

Message retry exit user data (parameter identifier: MQCACH\_MR\_EXIT\_USER\_DATA).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but ignored.

Specifies user data that is passed to the message retry exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryCount* (MQCFIN)

Message retry count (parameter identifier: MQIACH\_MR\_COUNT).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be zero.

Specifies the number of times that a failing message should be retried.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryInterval* (MQCFIN)

Message retry interval (parameter identifier: MQIACH\_MR\_INTERVAL).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be zero.

Specifies the minimum time interval in milliseconds between retries of failing messages.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

*QMgrName* (MQCFST)

Queue-manager name (parameter identifier: MQCA\_Q\_MGR\_NAME).

For channels with a *ChannelType* of MQCHT\_CLNTCONN, this is the name of a queue manager to which a client application can request connection.

On 32-bit Windows, this parameter is accepted but ignored.

For channels of other types, this parameter is not valid. The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*HeartbeatInterval* (MQCFIN)

Heartbeat interval (parameter identifier: MQIACH\_HB\_INTERVAL).

The interpretation of this parameter depends on the channel type, as follows:

- For a channel type of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_RECEIVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR, this is the time in seconds between heartbeat flows passed from the sending MCA when there are no messages on the transmission queue. This gives the receiving MCA the opportunity to quiesce the channel. To be useful, *HeartbeatInterval* should be significantly less than *DiscInterval*. However, the only check is that the value is within the permitted range.

This type of heartbeat is supported in the following environments: AIX, HP-UX, OS/390, OS/2, OS/400, Sun Solaris, Windows NT.

- For a channel type of MQCHT\_CLNTCONN or MQCHT\_SVRCONN, this is the time in seconds between heartbeat flows passed from the server MCA when that MCA has issued an MQGET call with the MQGMO\_WAIT option on behalf of a client application. This allows the server MCA to handle situations where the client connection fails during an MQGET with MQGMO\_WAIT.

This type of heartbeat is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value must be in the range 0 through 999 999. A value of 0 means that no heartbeat exchange occurs. The value that is actually used is the larger of the values specified at the sending side and receiving side.

*NonPersistentMsgSpeed* (MQCFIN)

Speed at which nonpersistent messages are to be sent (parameter identifier: MQIACH\_NPM\_SPEED).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, 32-bit Windows, Windows NT.

Specifying MQNPMS\_FAST means that nonpersistent messages on a channel need not wait for a syncpoint before being made available for retrieval. The advantage of this is that nonpersistent messages become available for retrieval far more quickly. The disadvantage is that because

## Change Channel

they do not wait for a syncpoint, they may be lost if there is a transmission failure.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_RECEIVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR. The value may be:

MQNPMS\_NORMAL  
Normal speed.

MQNPMS\_FAST  
Fast speed.

### *BatchInterval* (MQCFIN)

Batch interval (parameter identifier: MQIACH\_BATCH\_INTERVAL).

This is the approximate time in milliseconds that a channel will keep a batch open, if fewer than *BatchSize* messages have been transmitted in the current batch.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

If *BatchInterval* is greater than zero, the batch is terminated by whichever of the following occurs first:

- *BatchSize* messages have been sent, or
- *BatchInterval* milliseconds have elapsed since the start of the batch.

If *BatchInterval* is zero, the batch is terminated by whichever of the following occurs first:

- *BatchSize* messages have been sent, or
- the transmission queue becomes empty.

*BatchInterval* must be in the range zero through 999 999 999.

This parameter applies only to channels with a *ChannelType* of: MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the channel belongs. *ClusterName* and *ClusterNameList* should not be specified together.

This parameter applies only to channels with a *ChannelType* of:

MQCHT\_CLUSSDR  
MQCHT\_CLUSRCVR

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *ClusterNameList* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the channel belongs. *ClusterName* and *ClusterNameList* should not be specified together.

This parameter applies only to channels with a *ChannelType* of:

MQCHT\_CLUSSDR  
MQCHT\_CLUSRCVR

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

*NetworkPriority* (MQCFIN)

Network priority (parameter identifier: MQIACH\_NETWORK\_PRIORITY).

The priority for the network connection. If there are multiple paths available, distributed queuing selects the path with the highest priority.

The value must be in the range 0 (lowest) through 9 (highest).

This parameter applies only to channels with a *ChannelType* of MQCHT\_CLUSRCVR

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_BATCH\_INT\_ERROR

Batch interval not valid.

MQRCCF\_BATCH\_INT\_WRONG\_TYPE

Batch interval parameter not allowed for this channel type.

MQRCCF\_BATCH\_SIZE\_ERROR

Batch size not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFSL\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFSL\_TOTAL\_LENGTH\_ERROR

Total string length error.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

## Change Channel

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_NAME\_ERROR  
Channel name error.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_CLUSTER\_NAME\_CONFLICT  
Cluster name conflict.

MQRCCF\_DISC\_INT\_ERROR  
Disconnection interval not valid.

MQRCCF\_DISC\_INT\_WRONG\_TYPE  
Disconnection interval not allowed for this channel type.

MQRCCF\_HB\_INTERVAL\_ERROR  
Heartbeat interval not valid.

MQRCCF\_HB\_INTERVAL\_WRONG\_TYPE  
Heartbeat interval parameter not allowed for this channel type.

MQRCCF\_LONG\_RETRY\_ERROR  
Long retry count not valid.

MQRCCF\_LONG\_RETRY\_WRONG\_TYPE  
Long retry parameter not allowed for this channel type.

MQRCCF\_LONG\_TIMER\_ERROR  
Long timer not valid.

MQRCCF\_LONG\_TIMER\_WRONG\_TYPE  
Long timer parameter not allowed for this channel type.

MQRCCF\_MAX\_MSG\_LENGTH\_ERROR  
Maximum message length not valid.

MQRCCF\_MCA\_NAME\_ERROR  
Message channel agent name error.

MQRCCF\_MCA\_NAME\_WRONG\_TYPE  
Message channel agent name not allowed for this channel type.

MQRCCF\_MCA\_TYPE\_ERROR  
Message channel agent type not valid.

MQRCCF\_MISSING\_CONN\_NAME  
Connection name parameter required but missing.

MQRCCF\_MR\_COUNT\_ERROR  
Message retry count not valid.

MQRCCF\_MR\_COUNT\_WRONG\_TYPE  
Message-retry count parameter not allowed for this channel type.

MQRCCF\_MR\_EXIT\_NAME\_ERROR  
Channel message-retry exit name error.

MQRCCF\_MR\_EXIT\_NAME\_WRONG\_TYPE  
Message-retry exit parameter not allowed for this channel type.

MQRCCF\_MR\_INTERVAL\_ERROR  
 Message retry interval not valid.

MQRCCF\_MR\_INTERVAL\_WRONG\_TYPE  
 Message-retry interval parameter not allowed for this channel type.

MQRCCF\_MSG\_EXIT\_NAME\_ERROR  
 Channel message exit name error.

MQRCCF\_NET\_PRIORITY\_ERROR  
 Network priority value error.

MQRCCF\_NET\_PRIORITY\_WRONG\_TYPE  
 Network priority attribute not allowed for this channel type.

MQRCCF\_NPM\_SPEED\_ERROR  
 Nonpersistent message speed not valid.

MQRCCF\_NPM\_SPEED\_WRONG\_TYPE  
 Nonpersistent message speed parameter not allowed for this channel type.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
 Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
 Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
 Parameter sequence not valid.

MQRCCF\_PUT\_AUTH\_ERROR  
 Put authority value not valid.

MQRCCF\_PUT\_AUTH\_WRONG\_TYPE  
 Put authority parameter not allowed for this channel type.

MQRCCF\_RCV\_EXIT\_NAME\_ERROR  
 Channel receive exit name error.

MQRCCF\_SEC\_EXIT\_NAME\_ERROR  
 Channel security exit name error.

MQRCCF\_SEND\_EXIT\_NAME\_ERROR  
 Channel send exit name error.

MQRCCF\_SEQ\_NUMBER\_WRAP\_ERROR  
 Sequence wrap number not valid.

MQRCCF\_SHORT\_RETRY\_ERROR  
 Short retry count not valid.

MQRCCF\_SHORT\_RETRY\_WRONG\_TYPE  
 Short retry parameter not allowed for this channel type.

MQRCCF\_SHORT\_TIMER\_ERROR  
 Short timer value not valid.

MQRCCF\_SHORT\_TIMER\_WRONG\_TYPE  
 Short timer parameter not allowed for this channel type.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
 Structure type not valid.

## Change Channel

MQRCCF\_XMIT\_PROTOCOL\_TYPE\_ERR

Transmission protocol type not valid.

MQRCCF\_XMIT\_Q\_NAME\_ERROR

Transmission queue name error.

MQRCCF\_XMIT\_Q\_NAME\_WRONG\_TYPE

Transmission queue name not allowed for this channel type.

## Change Namelist

The Change Namelist (MQCMD\_CHANGE\_NAMELIST) command changes the specified attributes of an existing MQSeries namelist definition.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, or Windows NT only.

For any optional parameters that are omitted, the value does not change.

### **Required parameters:**

*NamelistName*

### **Optional parameters:**

*NamelistDesc, Names*

## Required parameters

*NamelistName* (MQCFST)

The name of the namelist definition to be changed (parameter identifier: MQCA\_NAMELIST\_NAME).

The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

## Optional parameters

*NamelistDesc* (MQCFST)

Description of namelist definition (parameter identifier: MQCA\_NAMELIST\_DESC).

This is a plain-text comment that provides descriptive information about the namelist definition. It should contain only displayable characters.

If characters are used that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing, they may be translated incorrectly.

The maximum length of the string is MQ\_NAMELIST\_DESC\_LENGTH.

*Names* (MQCFSL)

The names to be placed in the namelist (parameter identifier: MQCA\_NAMES).

The number of names in the list is given by the *Count* field in the MQCFSL structure. The length of each name is given by the *StringLength* field in that structure. The maximum length of a name is MQ\_OBJECT\_NAME\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME

(2085, X'825') Unknown object name.

## Change Namelist

| MQRCCF\_ATTR\_VALUE\_ERROR  
| Attribute value not valid.

| MQRCCF\_CFIN\_DUPLICATE\_PARM  
| Duplicate parameter.

| MQRCCF\_CFIN\_LENGTH\_ERROR  
| Structure length not valid.

| MQRCCF\_CFIN\_PARM\_ID\_ERROR  
| Parameter identifier not valid.

| MQRCCF\_CFSL\_COUNT\_ERROR  
| Name count not valid.

| MQRCCF\_CFSL\_STRING\_LENGTH\_ERROR  
| String length value not valid.

| MQRCCF\_CFST\_DUPLICATE\_PARM  
| Duplicate parameter.

| MQRCCF\_CFST\_LENGTH\_ERROR  
| Structure length not valid.

| MQRCCF\_CFST\_PARM\_ID\_ERROR  
| Parameter identifier not valid.

| MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
| String length not valid.

| MQRCCF\_OBJECT\_NAME\_ERROR  
| Object name not valid.

| MQRCCF\_OBJECT\_OPEN  
| Object is open.

| MQRCCF\_PARM\_COUNT\_TOO\_BIG  
| Parameter count too big.

| MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
| Parameter count too small.

| MQRCCF\_PARM\_SEQUENCE\_ERROR  
| Parameter sequence not valid.

| MQRCCF\_STRUCTURE\_TYPE\_ERROR  
| Structure type not valid.

## Change Process

The Change Process (MQCMD\_CHANGE\_PROCESS) command changes the specified attributes of an existing MQSeries process definition.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

For any optional parameters that are omitted, the value does not change.

### **Required parameters:**

*ProcessName*

### **Optional parameters:**

*ProcessDesc, ApplType, ApplId, EnvData UserData*

## Required parameters

*ProcessName* (MQCFST)

The name of the process definition to be changed (parameter identifier: MQCA\_PROCESS\_NAME).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

## Optional parameters

*ProcessDesc* (MQCFST)

Description of process definition (parameter identifier: MQCA\_PROCESS\_DESC).

A plain-text comment that provides descriptive information about the process definition. It should contain only displayable characters.

The maximum length of the string is MQ\_PROCESS\_DESC\_LENGTH.

If characters are used that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing, they may be translated incorrectly.

*ApplType* (MQCFIN)

Application type (parameter identifier: MQIA\_APPL\_TYPE).

Valid application types are:

MQAT\_OS400

OS/400 application.

MQAT\_OS2

OS/2 or Presentation Manager® application.

MQAT\_WINDOWS\_NT

Windows NT or 32-bit Windows application.

MQAT\_DOS

DOS client application.

MQAT\_WINDOWS

Windows client or 16-bit Windows application.

MQAT\_UNIX

UNIX application.

MQAT\_AIX

AIX application (same value as MQAT\_UNIX).

MQAT\_CICS

CICS transaction.

MQAT\_VMS

Digital OpenVMS application.

MQAT\_NSK

Tandem NonStop Kernel application.

MQAT\_DEFAULT

Default application type.

*user-value*: User-defined application type in the range 65 536 through 999 999 999 (not checked).

Only application types (other than user-defined types) that are supported on the platform at which the command is executed should be used:

- On Digital OpenVMS:  
MQAT\_VMS (default),  
MQAT\_DOS,  
MQAT\_WINDOWS, and  
MQAT\_DEFAULT are supported.
- On OS/2:  
MQAT\_OS2 (default),  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_AIX,  
MQAT\_CICS, and  
MQAT\_DEFAULT are supported.
- On OS/400:  
MQAT\_OS400 (default),  
MQAT\_CICS, and  
MQAT\_DEFAULT are supported.
- On Tandem NonStop Kernel:  
MQAT\_NSK (default),  
MQAT\_DOS,  
MQAT\_WINDOWS, and  
MQAT\_DEFAULT are supported.
- On UNIX systems:  
MQAT\_UNIX (default),  
MQAT\_OS2,  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_CICS, and  
MQAT\_DEFAULT are supported.
- On Windows NT:  
MQAT\_WINDOWS\_NT (default),  
MQAT\_OS2

MQAT\_DOS,  
 MQAT\_WINDOWS,  
 MQAT\_CICS, and  
 MQAT\_DEFAULT are supported.

*AppId* (MQCFST)

Application identifier (parameter identifier: MQCA\_APPL\_ID).

This is the name of the application to be started, on the platform for which the command is executing, and might typically be a program name and library name.

The maximum length of the string is MQ\_PROCESS\_APPL\_ID\_LENGTH.

*EnvData* (MQCFST)

Environment data (parameter identifier: MQCA\_ENV\_DATA).

A character string that contains environment information pertaining to the application to be started.

The maximum length of the string is  
 MQ\_PROCESS\_ENV\_DATA\_LENGTH.

*UserData* (MQCFST)

User data (parameter identifier: MQCA\_USER\_DATA).

A character string that contains user information pertaining to the application (defined by *AppId*) that is to be started.

The maximum length of the string is  
 MQ\_PROCESS\_USER\_DATA\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
 (2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
 Attribute value not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
 Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
 Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
 Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
 Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
 Structure length not valid.

## Change Process

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_FORCE\_VALUE\_ERROR  
Force value not valid.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_OBJECT\_OPEN  
Object is open.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Change Queue

The Change Queue (MQCMD\_CHANGE\_Q) command changes the specified attributes of an existing MQSeries queue.

This PCF is supported on all platforms.

For any optional parameters that are omitted, the value does not change.

**Required parameters:**

*QName, QType,*

**Optional parameters (any QType):**

*QDesc, InhibitPut, DefPriority, DefPersistence*

**Optional parameters (alias QType):**

*Force, InhibitGet, BaseQName, Scope, ClusterName, ClusterNameList, DefBind*

**Optional parameters (local QType):**

*Force, InhibitGet, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DistLists, Usage, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, Scope, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent, ClusterName, ClusterNameList, DefBind*

**Optional parameters (remote QType):**

*Force, RemoteQName, RemoteQMgrName, XmitQName, Scope, ClusterName, ClusterNameList, DefBind*

**Optional parameters (model QType):**

*InhibitGet, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DistLists, Usage, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, DefinitionType, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent*

## Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The name of the queue to be changed. The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

The value specified must match the type of the queue being changed.

The value may be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_LOCAL

Local queue.

## Change Queue

### MQQT\_REMOTE

Local definition of a remote queue.

The following is supported on all platforms, but on OS/400 for receipt by MQSeries for AS/400 V4R2, or later.:

### MQQT\_MODEL

Model queue definition.

## Optional parameters

### *Force* (MQCFIN)

Force changes (parameter identifier: MQIACF\_FORCE).

Specifies whether the command should be forced to complete when conditions are such that completing the command would affect an open queue. The conditions depend upon the type of the queue that is being changed:

**Alias QType:** *BaseQName* is specified with a queue name and an application has the alias queue open.

**Local QType:** Either of the following conditions indicate that a local queue would be affected:

- *Shareability* is specified as MQQA\_NOT\_SHAREABLE and more than one application has the local queue open for input.
- The *Usage* value is changed and one or more applications has the local queue open, or there are one or more messages on the queue. (The *Usage* value should not normally be changed while there are messages on the queue; the format of messages changes when they are put on a transmission queue.)

**Remote QType:** Either of the following conditions indicate that a remote queue would be affected:

- *XmitQName* is specified with a transmission-queue name (or blank) and an application has a remote queue open that would be affected by this change.
- Any of the *RemoteQName*, *RemoteQMgrName* or *XmitQName* parameters is specified with a queue or queue-manager name, and one or more applications has a queue open that resolved through this definition as a queue-manager alias.

**Model QType:** This parameter is not valid for model queues.

**Note:** A value of MQFC\_YES is not required if this definition is in use as a reply-to queue definition only.

The value may be:

### MQFC\_YES

Force the change.

### MQFC\_NO

Do not force the change.

*QDesc* (MQCFST)

Queue description (parameter identifier: MQCA\_Q\_DESC).

Text that briefly describes the object.

The maximum length of the string is MQ\_Q\_DESC\_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing to ensure that the text is translated correctly if it is sent to another queue manager.

*InhibitPut* (MQCFIN)

Whether put operations are allowed (parameter identifier: MQIA\_INHIBIT\_PUT).

Specifies whether messages can be put on the queue.

The value may be:

MQQA\_PUT\_ALLOWED

Put operations are allowed.

MQQA\_PUT\_INHIBITED

Put operations are inhibited.

*DefPriority* (MQCFIN)

Default priority (parameter identifier: MQIA\_DEF\_PRIORITY).

Specifies the default priority of messages put on the queue. The value must be in the range zero through to the maximum priority value that is supported (9).

*DefPersistence* (MQCFIN)

Default persistence (parameter identifier: MQIA\_DEF\_PERSISTENCE).

Specifies the default for message-persistence on the queue. Message persistence determines whether or not messages are preserved across restarts of the queue manager.

The value may be:

MQPER\_PERSISTENT

Message is persistent.

MQPER\_NOT\_PERSISTENT

Message is not persistent.

*InhibitGet* (MQCFIN)

Whether get operations are allowed (parameter identifier: MQIA\_INHIBIT\_GET).

The value may be:

MQQA\_GET\_ALLOWED

Get operations are allowed.

MQQA\_GET\_INHIBITED

Get operations are inhibited.

## Change Queue

### *BaseQName* (MQCFST)

Queue name to which the alias resolves (parameter identifier: MQCA\_BASE\_Q\_NAME).

This is the name of a local or remote queue that is defined to the local queue manager.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *ProcessName* (MQCFST)

Name of process definition for the queue (parameter identifier: MQCA\_PROCESS\_NAME).

Specifies the local name of the MQSeries process that identifies the application that should be started when a trigger event occurs.

- On AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT, if the queue is a transmission queue the process name can be left as all blanks.
- On 32-bit Windows, this parameter is accepted but ignored.
- In other environments, the process name must be nonblank for a trigger event to occur (although it can be set after the queue has been created).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

### *MaxQDepth* (MQCFIN)

Maximum queue depth (parameter identifier: MQIA\_MAX\_Q\_DEPTH).

The maximum number of messages allowed on the queue. Note that other factors may cause the queue to be treated as full; for example, it will appear to be full if there is no storage available for a message.

Specify a value in the range 0 through 640 000.

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIA\_MAX\_MSG\_LENGTH).

Specifies the maximum length for messages on the queue. Because applications may use the value of this attribute to determine the size of buffer they need to retrieve messages from the queue, the value should be changed only if it is known that this will not cause an application to operate incorrectly.

You are recommended not to set a value that is greater than the queue manager's *MaxMsgLength* attribute.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems not listed above, and 32-bit Windows, the maximum message length is 4 MB (4 194 304 bytes).

*BackoutThreshold* (MQCFIN)

Backout threshold (parameter identifier: MQIA\_BACKOUT\_THRESHOLD).

That is, the number of times a message can be backed out before it is transferred to the backout queue specified by *BackoutRequeueName*.

If the value is subsequently reduced, any messages already on the queue that have been backed out at least as many times as the new value remain on the queue, but such messages are transferred if they are backed out again.

Specify a value in the range 0 through 999 999 999.

*BackoutRequeueName* (MQCFST)

Excessive backout requeue name (parameter identifier: MQCA\_BACKOUT\_REQ\_Q\_NAME).

Specifies the local name of the queue (not necessarily a local queue) to which a message is transferred if it is backed out more times than the value of *BackoutThreshold*.

The backout queue does not need to exist at this time but it must exist when the *BackoutThreshold* value is exceeded.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*Shareability* (MQCFIN)

Whether queue can be shared (parameter identifier: MQIA\_SHAREABILITY).

Specifies whether multiple instances of applications, can open this queue for input.

The value may be:

MQQA\_SHAREABLE  
Queue is shareable.

MQQA\_NOT\_SHAREABLE  
Queue is not shareable.

*DefInputOpenOption* (MQCFIN)

Default input open option (parameter identifier: MQIA\_DEF\_INPUT\_OPEN\_OPTION).

Specifies the default share option for applications opening this queue for input.

The value may be:

MQOO\_INPUT\_EXCLUSIVE  
Open queue to get messages with exclusive access.

MQOO\_INPUT\_SHARED  
Open queue to get messages with shared access.

*HardenGetBackout* (MQCFIN)

Whether to harden backout count (parameter identifier: MQIA\_HARDEN\_GET\_BACKOUT).

Specifies whether the count of backed out messages should be saved (hardened) across restarts of the message queue manager.

**Note:** MQSeries for AS/400 always hardens the count, regardless of the setting of this attribute.

The value may be:

MQQA\_BACKOUT\_HARDENED  
Backout count remembered.

MQQA\_BACKOUT\_NOT\_HARDENED  
Backout count may not be remembered.

### *MsgDeliverySequence* (MQCFIN)

Whether priority is relevant (parameter identifier: MQIA\_MSG\_DELIVERY\_SEQUENCE).

The value may be:

MQMDS\_PRIORITY  
Messages are returned in priority order.

MQMDS\_FIFO  
Messages are returned in FIFO order (first in, first out).

### *RetentionInterval* (MQCFIN)

Retention interval (parameter identifier: MQIA\_RETENTION\_INTERVAL).

The number of hours for which the queue may be needed, based on the date and time when the queue was created.

This information is available to a housekeeping application or an operator and may be used to determine when a queue is no longer required. The queue manager does not delete queues nor does it prevent queues from being deleted if their retention interval has not expired. It is the user's responsibility to take any required action.

Specify a value in the range 0 through 999 999 999.

### *DistLists* (MQCFIN)

Distribution list support (parameter identifier: MQIA\_DIST\_LISTS).

Specifies whether distribution-list messages can be placed on the queue.

**Note:** This attribute is set by the sending message channel agent (MCA) which removes messages from the queue; this happens each time the sending MCA establishes a connection to a receiving MCA on a partnering queue manager. The attribute should not normally be set by administrators, although it can be set if the need arises.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQDL\_SUPPORTED  
Distribution lists supported.

MQDL\_NOT\_SUPPORTED  
Distribution lists not supported.

*Usage* (MQCFIN)

Usage (parameter identifier: MQIA\_USAGE).

Specifies whether the queue is for normal usage or for transmitting messages to a remote message queue manager.

The value may be:

MQUS\_NORMAL  
Normal usage.

MQUS\_TRANSMISSION  
Transmission queue.

*InitiationQName* (MQCFST)

Initiation queue name (parameter identifier: MQCA\_INITIATION\_Q\_NAME).

The local queue for trigger messages relating to this queue. The initiation queue must be on the same queue manager.

On 32-bit Windows, this parameter is accepted but ignored.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TriggerControl* (MQCFIN)

Trigger control (parameter identifier: MQIA\_TRIGGER\_CONTROL).

Specifies whether trigger messages are written to the initiation queue.

The value may be:

MQTC\_OFF  
Trigger messages not required.

MQTC\_ON  
Trigger messages required.

This value is not supported on 32-bit Windows.

*TriggerType* (MQCFIN)

Trigger type (parameter identifier: MQIA\_TRIGGER\_TYPE).

Specifies the condition that initiates a trigger event. When the condition is true, a trigger message is sent to the initiation queue.

On 32-bit Windows, this parameter is accepted but ignored.

The value may be:

MQTT\_NONE  
No trigger messages.

MQTT EVERY  
Trigger message for every message.

MQTT\_FIRST  
Trigger message when queue depth goes from 0 to 1.

MQTT\_DEPTH  
Trigger message when depth threshold exceeded.

### *TriggerMsgPriority* (MQCFIN)

Threshold message priority for triggers (parameter identifier: MQIA\_TRIGGER\_MSG\_PRIORITY).

Specifies the minimum priority that a message must have before it can cause, or be counted for, a trigger event. The value must be in the range of priority values that are supported (0 through 9).

On 32-bit Windows, this parameter is accepted but ignored.

### *TriggerDepth* (MQCFIN)

Trigger depth (parameter identifier: MQIA\_TRIGGER\_DEPTH).

Specifies (when *TriggerType* is MQTT\_DEPTH) the number of messages that will initiate a trigger message to the initiation queue. The value must be in the range 1 through 999 999 999.

On 32-bit Windows, this parameter is accepted but ignored.

### *TriggerData* (MQCFST)

Trigger data (parameter identifier: MQCA\_TRIGGER\_DATA).

Specifies user data that the queue manager includes in the trigger message. This data is made available to the monitoring application that processes the initiation queue and to the application that is started by the monitor.

On 32-bit Windows, this parameter is accepted but ignored.

The maximum length of the string is MQ\_TRIGGER\_DATA\_LENGTH.

### *RemoteQName* (MQCFST)

Name of remote queue as known locally on the remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_NAME).

If this definition is used for a local definition of a remote queue, *RemoteQName* must not be blank when the open occurs.

If this definition is used for a queue-manager alias definition, *RemoteQName* must be blank when the open occurs.

If this definition is used for a reply-to alias, this name is the name of the queue that is to be the reply-to queue.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *RemoteQMgrName* (MQCFST)

Name of remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_MGR\_NAME).

If an application opens the local definition of a remote queue, *RemoteQMgrName* must not be blank or the name of the connected queue manager. If *XmitQName* is blank there must be a local queue of this name, which is to be used as the transmission queue.

If this definition is used for a queue-manager alias, *RemoteQMgrName* is the name of the queue manager, which can be the name of the connected queue manager. Otherwise, if *XmitQName* is blank, when the queue is opened there must be a local queue of this name, which is to be used as the transmission queue.

If this definition is used for a reply-to alias, this name is the name of the queue manager that is to be the reply-to queue manager.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

Specifies the local name of the transmission queue to be used for messages destined for either a remote queue or for a queue-manager alias definition.

If *XmitQName* is blank, a queue with the same name as *RemoteQMgrName* is used as the transmission queue.

This attribute is ignored if the definition is being used as a queue-manager alias and *RemoteQMgrName* is the name of the connected queue manager.

It is also ignored if the definition is used as a reply-to queue alias definition.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*DefinitionType* (MQCFIN)

Queue definition type (parameter identifier: MQIA\_DEFINITION\_TYPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQQDT\_PERMANENT\_DYNAMIC  
Dynamically defined permanent queue.

MQQDT\_TEMPORARY\_DYNAMIC  
Dynamically defined temporary queue.

*Scope* (MQCFIN)

Scope of the queue definition (parameter identifier: MQIA\_SCOPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

Specifies whether the scope of the queue definition does not extend beyond the queue manager which owns the queue, or whether the queue name is contained in a cell directory, so that it is known to all of the queue managers within the cell.

If this attribute is changed from MQSCO\_CELL to MQSCO\_Q\_MGR, the entry for the queue is deleted from the cell directory.

Model and dynamic queues cannot be changed to have cell scope.

If it is changed from MQSCO\_Q\_MGR to MQSCO\_CELL, an entry for the queue is created in the cell directory. If there is already a queue with the same name in the cell directory, the command fails. The command also fails if no name service supporting a cell directory has been configured.

The value may be:

MQSCO\_Q\_MGR  
Queue-manager scope.

MQSCO\_CELL  
Cell scope.

This value is not supported on OS/400 and 32-bit Windows.

### *QDepthHighLimit* (MQCFIN)

High limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth High event.

This event indicates that an application has put a message to a queue, and this has caused the number of messages on the queue to become greater than or equal to the queue depth high threshold. See the *QDepthHighEvent* parameter.

The value is expressed as a percentage of the maximum queue depth (*MaxQDepth* attribute), and must be greater than or equal to zero and less than or equal to 100.

### *QDepthLowLimit* (MQCFIN)

Low limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth Low event.

This event indicates that an application has retrieved a message from a queue, and this has caused the number of messages on the queue to become less than or equal to the queue depth low threshold. See the *QDepthLowEvent* parameter.

The value is expressed as a percentage of the maximum queue depth (*MaxQDepth* attribute), and must be greater than or equal to zero and less than or equal to 100.

### *QDepthMaxEvent* (MQCFIN)

Controls whether Queue Full events are generated (parameter identifier: MQIA\_Q\_DEPTH\_MAX\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Full event indicates that an **MQPUT** call to a queue has been rejected because the queue is full, that is, the queue depth has already reached its maximum value.

**Note:** The value of this attribute can change implicitly. See Chapter 3, "Understanding performance events" on page 17.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

### *QDepthHighEvent* (MQCFIN)

Controls whether Queue Depth High events are generated (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Depth High event indicates that an application has put a message on a queue, and this has caused the number of messages on the queue to become greater than or equal to the queue depth high threshold. See the *QDepthHighLimit* parameter.

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

MQEVN\_DISABLED  
Event reporting disabled.

MQEVN\_ENABLED  
Event reporting enabled.

#### *QDepthLowEvent* (MQCFIN)

Controls whether Queue Depth Low events are generated (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Depth Low event indicates that an application has retrieved a message from a queue, and this has caused the number of messages on the queue to become less than or equal to the queue depth low threshold. See the *QDepthLowLimit* parameter.

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

MQEVN\_DISABLED  
Event reporting disabled.

MQEVN\_ENABLED  
Event reporting enabled.

#### *QServiceInterval* (MQCFIN)

Target for queue service interval (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The service interval used for comparison to generate Queue Service Interval High and Queue Service Interval OK events. See the *QServiceIntervalEvent* parameter.

The value is in units of milliseconds, and must be greater than or equal to zero, and less than or equal to 999 999 999.

#### *QServiceIntervalEvent* (MQCFIN)

Controls whether Service Interval High or Service Interval OK events are generated (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Service Interval High event is generated when a check indicates that no messages have been retrieved from or put to the queue for at least the time indicated by the *QServiceInterval* attribute.

## Change Queue

A Queue Service Interval OK event is generated when a check indicates that a message has been retrieved from the queue within the time indicated by the *QServiceInterval* attribute.

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

### MQQSIE\_HIGH

Queue Service Interval High events enabled.

- Queue Service Interval High events are **enabled** and
- Queue Service Interval OK events are **disabled**.

### MQQSIE\_OK

Queue Service Interval OK events enabled.

- Queue Service Interval High events are **disabled** and
- Queue Service Interval OK events are **enabled**.

### MQQSIE\_NONE

No queue service interval events enabled.

- Queue Service Interval High events are **disabled** and
- Queue Service Interval OK events are also **disabled**.

### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

*ClusterName* and *ClusterNameList* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

### *ClusterNameList* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name of the namelist, that specifies a list of clusters to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

*ClusterName* and *ClusterNameList* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

### *DefBind* (MQCFIN)

Bind definition (parameter identifier: MQIA\_DEF\_BIND).

The parameter specifies the binding to be used when MQOO\_BIND\_AS\_Q\_DEF is specified on the MQOPEN call.

The value may be:

MQBND\_BIND\_ON\_OPEN

The binding is fixed by the MQOPEN call.

MQBND\_BIND\_NOT\_FIXED

The binding is not fixed.

Changes to this parameter do not affect instances of the queue that are open.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME

(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR

Attribute value not valid.

MQRCCF\_CELL\_DIR\_NOT\_AVAILABLE

Cell directory is not available.

MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_CLUSTER\_NAME\_CONFLICT

Cluster name conflict.

MQRCCF\_CLUSTER\_Q\_USAGE\_ERROR

Cluster usage conflict.

MQRCCF\_DYNAMIC\_Q\_SCOPE\_ERROR

Dynamic queue scope error.

MQRCCF\_FORCE\_VALUE\_ERROR

Force value not valid.

## Change Queue

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_OBJECT\_OPEN  
Object is open.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_Q\_ALREADY\_IN\_CELL  
Queue already exists in cell.

MQRCCF\_Q\_TYPE\_ERROR  
Queue type not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Change Queue Manager

The Change Queue Manager (MQCMD\_CHANGE\_Q\_MGR) command changes the specified attributes of the queue manager.

This PCF is supported on all platforms.

For any optional parameters that are omitted, the value does not change.

### **Required parameters:**

None

### **Optional parameters:**

*Force, QMgrDesc, TriggerInterval, DeadLetterQName, MaxHandles, MaxUncommittedMsgs, DefXmitQName, AuthorityEvent, InhibitEvent, LocalEvent, RemoteEvent, StartStopEvent, PerformanceEvent, MaxMsgLength, ChannelAutoDef, ChannelAutoDefEvent, ChannelAutoDefExit, ClusterWorkloadExit, ClusterWorkloadData, ClusterWorkloadLength, RepositoryName, RepositoryNameList, CodedCharSetId*

## Optional parameters

### *Force* (MQCFIN)

Force changes (parameter identifier: MQIACF\_FORCE).

Specifies whether the command should be forced to complete if both of the following are true:

- *DefXmitQName* is specified, and
- An application has a remote queue open, the resolution for which would be affected by this change.

### *QMgrDesc* (MQCFST)

Queue manager description (parameter identifier: MQCA\_Q\_MGR\_DESC).

This is text that briefly describes the object.

The maximum length of the string is MQ\_Q\_MGR\_DESC\_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the queue manager on which the command is executing, to ensure that the text is translated correctly.

### *TriggerInterval* (MQCFIN)

Trigger interval (parameter identifier: MQIA\_TRIGGER\_INTERVAL).

Specifies the trigger time interval, expressed in milliseconds, for use only with queues where *TriggerType* has a value of MQTT\_FIRST.

In this case trigger messages are normally only generated when a suitable message arrives on the queue, and the queue was previously empty. Under certain circumstances, however, an additional trigger message can be generated with MQTT\_FIRST triggering, even if the queue was not empty. These additional trigger messages are not generated more often than every *TriggerInterval* milliseconds.

Specify a value in the range 0 through 999 999 999.

On 32-bit Windows, this parameter is accepted but ignored.

## Change Queue Manager

### *DeadLetterQName* (MQCFST)

Dead letter (undelivered message) queue name (parameter identifier: MQCA\_DEAD\_LETTER\_Q\_NAME).

Specifies the name of the local queue that is to be used for undelivered messages. Messages are put on this queue if they cannot be routed to their correct destination. The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

On 32-bit Windows, this parameter can be set only to blanks.

### *MaxHandles* (MQCFIN)

Maximum number of handles (parameter identifier: MQIA\_MAX\_HANDLES).

The maximum number of handles that any one job can have open at the same time.

Specify a value in the range 0 through 999 999 999.

### *MaxUncommittedMsgs* (MQCFIN)

Maximum uncommitted messages (parameter identifier: MQIA\_MAX\_UNCOMMITTED\_MSGS).

Specifies the maximum number of uncommitted messages. That is:

- The number of messages that can be retrieved, plus
- The number of messages that can be put, plus
- Any trigger messages generated within this unit of work

under any one syncpoint. This limit does not apply to messages that are retrieved or put outside syncpoint.

Specify a value in the range 1 through 10 000.

### *DefXmitQName* (MQCFST)

Default transmission queue name (parameter identifier: MQCA\_DEF\_XMIT\_Q\_NAME).

This is the name of the default transmission queue that is used for the transmission of messages to remote queue managers, if there is no other indication of which transmission queue to use.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *AuthorityEvent* (MQCFIN)

Controls whether authorization (Not Authorized) events are generated (parameter identifier: MQIA\_AUTHORITY\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED

Event reporting disabled.

MQEVR\_ENABLED

Event reporting enabled.

On 32-bit Windows, this value is not supported.

*InhibitEvent* (MQCFIN)

Controls whether inhibit (Inhibit Get and Inhibit Put) events are generated (parameter identifier: MQIA\_INHIBIT\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

*LocalEvent* (MQCFIN)

Controls whether local error events are generated (parameter identifier: MQIA\_LOCAL\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

*RemoteEvent* (MQCFIN)

Controls whether remote error events are generated (parameter identifier: MQIA\_REMOTE\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

*StartStopEvent* (MQCFIN)

Controls whether start and stop events are generated (parameter identifier: MQIA\_START\_STOP\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

*PerformanceEvent* (MQCFIN)

Controls whether performance-related events are generated (parameter identifier: MQIA\_PERFORMANCE\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

## Change Queue Manager

The value may be:

**MQEVR\_DISABLED**

Event reporting disabled.

**MQEVR\_ENABLED**

Event reporting enabled.

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIA\_MAX\_MSG\_LENGTH).

Specifies the maximum length of messages allowed on queues on the queue manager. No message that is larger than either the queue's *MaxMsgLength* or the queue manager's *MaxMsgLength* can be put on a queue.

If you reduce the maximum message length for the queue manager, you should also reduce the maximum message length of the SYSTEM.DEFAULT.LOCAL.QUEUE definition, and your other queues, to ensure that the queue manager's limit is not less than that of any of the queues in the system. If you do not do this, and applications inquire only the value of the queue's *MaxMsgLength*, they may not work correctly.

The lower limit for this parameter is 32 KB (32 768 bytes). The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On OS/400, the maximum message length is 4 MB (4 194 304 bytes).

### *ChannelAutoDef* (MQCFIN)

Controls whether receiver and server-connection channels can be auto-defined (parameter identifier: MQIA\_CHANNEL\_AUTO\_DEF).

Auto-definition for cluster-sender channels is always enabled.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

**MQCHAD\_DISABLED**

Channel auto-definition disabled.

**MQCHAD\_ENABLED**

Channel auto-definition enabled.

### *ChannelAutoDefEvent* (MQCFIN)

Controls whether channel auto-definition events are generated (parameter identifier: MQIA\_CHANNEL\_AUTO\_DEF\_EVENT), when a receiver, server-connection, or cluster-sender channel is auto-defined.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

**MQEVR\_DISABLED**  
Event reporting disabled.

**MQEVR\_ENABLED**  
Event reporting enabled.

#### *ChannelAutoDefExit* (MQCFST)

Channel auto-definition exit name (parameter identifier: MQCA\_CHANNEL\_AUTO\_DEF\_EXIT).

This exit is invoked when an inbound request for an undefined channel is received, if:

1. The channel is a cluster-sender, or
2. Channel auto-definition is enabled (see *ChannelAutoDef*).

This exit is also invoked when a cluster-receiver channel is started.

The format of the name is the same as for the *SecurityExit* parameter described in “Change Channel” on page 144.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

#### *ClusterWorkLoadExit* (MQCFST)

Cluster workload exit name (parameter identifier: MQCA\_CLUSTER\_WORKLOAD\_EXIT).

If a nonblank name is defined this exit is invoked when a message is put to a cluster queue.

The format of the name is the same as for the *SecurityExit* parameter described in “Change Channel” on page 144.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

#### *ClusterWorkLoadData* (MQCFST)

Cluster workload exit data (parameter identifier: MQCA\_CLUSTER\_WORKLOAD\_DATA).

This is passed to the cluster workload exit when it is called.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Change Queue Manager

### *ClusterWorkLoadLength* (MQCFIN)

Cluster workload length (parameter identifier: MQIA\_CLUSTER\_WORKLOAD\_LENGTH).

The maximum length of the message passed to the cluster workload exit.

The value of this attribute must be in the range zero through 999 999 999.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

### *RepositoryName* (MQCFST)

Cluster name (parameter identifier: MQCA\_REPOSITORY\_NAME).

The name of a cluster for which this queue manager is to provide a repository manager service.

The maximum length of the string is MQ\_OBJECT\_NAME\_LENGTH.

*RepositoryName* and *RepositoryNamelist* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *RepositoryNamelist* (MQCFST)

Repository namelist (parameter identifier: MQCA\_REPOSITORY\_NAMELIST).

The name, of a namelist of clusters, for which this queue manager is to provide a repository manager service.

This queue manager does not have a full repository, but may be a client of other repository services that are defined in the cluster, if

- Both *RepositoryName* and *RepositoryNamelist* are blank, or
- *RepositoryName* is blank and the namelist specified by *RepositoryNamelist* is empty.

*RepositoryName* and *RepositoryNamelist* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *CodedCharSetId* (MQCFIN)

Queue manager coded character set identifier (parameter identifier: MQIA\_CODED\_CHAR\_SET\_ID).

The coded character set identifier (CCSID) for the queue manager. The CCSID is the identifier used with all character string fields defined by the application programming interface (API). It does not apply to application data carried in the text of a message unless the CCSID in the message descriptor, when the message is put with an MQPUT or MQPUT1, is set to the value MQCCSI\_Q\_MGR.

Specify a value in the range 1 through 65535.

The CCSID must specify a value that is defined for use on the platform and use an appropriate character set. The character set must be:

- EBCDIC on OS/400
- ASCII or ASCII-related on other platforms

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_ATTR\_VALUE\_ERROR

Attribute value not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_CHAD\_ERROR

Channel automatic definition error.

MQRCCF\_CHAD\_EVENT\_ERROR

Channel automatic definition event error.

MQRCCF\_CHAD\_EVENT\_WRONG\_TYPE

Channel automatic definition event parameter not allowed for this channel type.

MQRCCF\_CHAD\_EXIT\_ERROR

Channel automatic definition exit name error.

MQRCCF\_CHAD\_EXIT\_WRONG\_TYPE

Channel automatic definition exit parameter not allowed for this channel type.

MQRCCF\_CHAD\_WRONG\_TYPE

Channel automatic definition parameter not allowed for this channel type.

MQRCCF\_FORCE\_VALUE\_ERROR

Force value not valid.

MQRCCF\_OBJECT\_NAME\_ERROR

Object name not valid.

## Change Queue Manager

MQRCCF\_OBJECT\_OPEN

Object is open.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR

Parameter sequence not valid.

MQRCCF\_Q\_MGR\_CCSID\_ERROR

Coded character set value not valid.

MQRCCF\_REPOS\_NAME\_CONFLICT

Repository names not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

MQRCCF\_UNKNOWN\_Q\_MGR

Queue manager not known.

---

## Clear Queue

The Clear Queue (MQCMD\_CLEAR\_Q) command deletes all of the messages from a local queue.

The command fails if the queue contains uncommitted messages.

This PCF is supported on all platforms.

**Required parameters:**

*QName*

**Optional parameters:**

None

## Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The name of the local queue to be cleared. The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

**Note:** The target queue must be type local.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_Q\_NOT\_EMPTY

(2055, X'807') Queue contains one or more messages or uncommitted put or get requests.

(For this command this reason only occurs if there are uncommitted updates.)

MQRC\_UNKNOWN\_OBJECT\_NAME

(2085, X'825') Unknown object name.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_OBJECT\_OPEN

Object is open.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

## Clear Queue

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MQRCCF\_Q\_WRONG\_TYPE

Action not valid for the queue of specified type.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

## Copy Channel

The Copy Channel (MQCMD\_COPY\_CHANNEL) command creates a new channel definition using, for attributes not specified in the command, the attribute values of an existing channel definition.

This PCF is supported on all platforms.

**Required parameters:**

*FromChannelName, ToChannelName, ChannelType*

**Optional parameters (any ChannelType):**

*Replace, TransportType, ChannelDesc, SecurityExit, MsgExit, SendExit, ReceiveExit, MaxMsgLength, SecurityUserData, MsgUserData, SendUserData, ReceiveUserData*

**Optional parameters (sender or server ChannelType):**

*ModeName, TpName, ConnectionName, XmitQName, MCAName, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, SeqNumberWrap, DataConversion, MCAType, MCAUserIdentifier, UserIdentifier, Password, HeartbeatInterval, NonPersistentMsgSpeed BatchInterval*

**Optional parameters (receiver ChannelType):**

*BatchSize, PutAuthority, SeqNumberWrap, MCAUserIdentifier, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed*

**Optional parameters (requester ChannelType):**

*ModeName, TpName, ConnectionName, MCAName, BatchSize, PutAuthority, SeqNumberWrap, MCAType, MCAUserIdentifier, UserIdentifier, Password, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed*

**Optional parameters (server-connection ChannelType):**

*MCAUserIdentifier*

**Optional parameters (client-connection ChannelType):**

*ModeName, TpName, QMgrName, ConnectionName, UserIdentifier, Password*

**Optional parameters (cluster-receiver ChannelType):**

*ModeName, TpName, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, DataConversion, BatchSize, PutAuthority, SeqNumberWrap, MCAUserIdentifier, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, ClusterName, ClusterNameList, ConnectionName, NetworkPriority*

**Optional parameters (cluster-sender ChannelType):**

*ModeName, TpName, ConnectionName, MCAName, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, SeqNumberWrap, DataConversion, MCAType, MCAUserIdentifier, UserIdentifier, Password, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, ClusterName, ClusterNameList*

### Required parameters

#### *FromChannelName* (MQCFST)

From channel name (parameter identifier: MQCACF\_FROM\_CHANNEL\_NAME).

The name of the existing channel definition that contains values for the attributes that are not specified in this command.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

#### *ToChannelName* (MQCFST)

To channel name (parameter identifier: MQCACF\_TO\_CHANNEL\_NAME).

The name of the new channel definition.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

Channel names must be unique; if a channel definition with this name already exists, the value of *Replace* must be MQRP\_YES. The channel type of the existing channel definition must be the same as the channel type of the new channel definition otherwise it cannot be replaced.

#### *ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

Specifies the type of the channel being copied. The value may be:

MQCHT\_SENDER

Sender.

MQCHT\_SERVER

Server.

MQCHT\_RECEIVER

Receiver.

MQCHT\_REQUESTER

Requester.

MQCHT\_SVRCONN

Server-connection (for use by clients).

This value is not supported in the following environment: 32-bit Windows.

MQCHT\_CLNTCONN

Client connection.

This value is not supported in the following environments: OS/400, 32-bit Windows.

MQCHT\_CLUSRCVR

Cluster-receiver.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCHT\_CLUSSDR

Cluster-sender.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Optional parameters

### *Replace* (MQCFIN)

Replace channel definition (parameter identifier: MQIACF\_REPLACE).

The value may be:

#### MQRP\_YES

Replace existing definition.

If *ChannelType* is MQCHT\_CLUSSDR, MQRP\_YES can be specified only if the channel was created manually.

#### MQRP\_NO

Do not replace existing definition.

### *TransportType* (MQCFIN)

Transmission protocol type (parameter identifier: MQIACH\_XMIT\_PROTOCOL\_TYPE).

No check is made that the correct transport type has been specified if the channel is initiated from the other end. The value may be:

#### MQXPT\_LU62

LU 6.2.

This value is not supported on 32-bit Windows.

#### MQXPT\_TCP

TCP.

This is the *only* value supported on 32-bit Windows.

#### MQXPT\_NETBIOS

NetBIOS.

This value is supported in the following environments: OS/2, 32-bit Windows, Windows NT.

#### MQXPT\_SPX

SPX.

This value is supported in the following environments: OS/2, Windows NT, Windows client, DOS client.

#### MQXPT\_DECNET

DECnet.

This value is supported in the following environment: Digital OpenVMS.

#### MQXPT\_UDP

UDP.

This value is supported in the following environments: 16-bit Windows, AIX.

### *ModeName* (MQCFST)

Mode name (parameter identifier: MQCACH\_MODE\_NAME).

LU 6.2 mode name.

The maximum length of the string is MQ\_MODE\_NAME\_LENGTH.

- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT, this can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows NT) from the CPI-C symbolic destination name properties.
- On 32-bit Windows, this parameter is accepted but ignored.

This parameter is valid only for channels with a *TransportType* of MQXPT\_LU62. It is not valid for receiver channels.

### *TpName* (MQCFST)

Transaction program name (parameter identifier: MQCACH\_TP\_NAME).

LU 6.2 transaction program name.

The maximum length of the string is MQ\_TP\_NAME\_LENGTH.

- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT, this can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows NT) from the CPI-C symbolic destination name properties.
- On 32-bit Windows, this parameter is accepted but ignored.

This parameter is valid only for channels with a *TransportType* of MQXPT\_LU62. It is not valid for receiver channels.

### *QMgrName* (MQCFST)

Queue-manager name (parameter identifier: MQCA\_Q\_MGR\_NAME).

For channels with a *ChannelType* of MQCHT\_CLNTCONN, this is the name of a queue manager to which a client application can request connection.

On 32-bit Windows, this parameter is accepted but ignored.

For channels of other types, this parameter is not valid. The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *ChannelDesc* (MQCFST)

Channel description (parameter identifier: MQCACH\_DESC).

The maximum length of the string is MQ\_CHANNEL\_DESC\_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing, to ensure that the text is translated correctly.

### *BatchSize* (MQCFIN)

Batch size (parameter identifier: MQIACH\_BATCH\_SIZE).

The maximum number of messages that should be sent down a channel before a checkpoint is taken.

The batch size which is actually used is the lowest of the following:

- The *BatchSize* of the sending channel
- The *BatchSize* of the receiving channel
- The maximum number of uncommitted messages at the sending queue manager

- The maximum number of uncommitted messages at the receiving queue manager

The maximum number of uncommitted messages is specified by the *MaxUncommittedMsgs* parameter of the Change Queue Manager command.

Specify a value in the range one 1-9999.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_SVRCONN or MQCHT\_CLNTCONN.

#### *SecurityExit* (MQCFST)

Security exit name (parameter identifier: MQCACH\_SEC\_EXIT\_NAME).

If a nonblank name is defined, the security exit is invoked at the following times:

- Immediately after establishing a channel.  
Before any messages are transferred, the exit is given the opportunity to instigate security flows to validate connection authorization.
- Upon receipt of a response to a security message flow.  
Any security message flows received from the remote processor on the remote machine are passed to the exit.

The exit is given the entire application message and message descriptor for modification.

The format of the string depends on the platform, as follows:

- On UNIX systems, it is of the form  
libraryname(functionname)
- On OS/2, Windows NT, and Windows 3.1, it is of the form  
dllname(functionname)  
where *dllname* is specified without the suffix “.DLL”.
- On OS/400, it is of the form  
progrname libname  
where *progrname* occupies the first 10 characters, and *libname* the second 10 characters (both blank-padded to the right if necessary).
- On Digital OpenVMS, it is of the form  
imagenamename(functionname)

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

#### *MsgExit* (MQCFSL)

Message exit name (parameter identifier: MQCACH\_MSG\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked immediately after a message has been retrieved from the transmission queue. The exit is given the entire application message and message descriptor for modification.

For channels with a *ChannelType* of MQCMT\_SVRCONN or MQCMT\_CLNTCONN, this parameter is not relevant, since message exits are not invoked for such channels.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

### *SendExit* (MQCFSL)

Send exit name (parameter identifier: MQCACH\_SEND\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked immediately before data is sent out on the network. The exit is given the complete transmission buffer before it is transmitted; the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

*ReceiveExit* (MQCFSL)

Receive exit name (parameter identifier: MQCACH\_RCV\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked before data received from the network is processed. The complete transmission buffer is passed to the exit and the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running.

MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

*SeqNumberWrap* (MQCFIN)

Sequence wrap number (parameter identifier: MQIACH\_SEQUENCE\_NUMBER\_WRAP).

Specifies the maximum message sequence number. When the maximum is reached, sequence numbers wrap to start again at 1.

The maximum message sequence number is not negotiable; the local and remote channels must wrap at the same number.

Specify a value in the range 100 through 999 999 999.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_SVRCONN or MQCHT\_CLNTCONN.

*MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIACH\_MAX\_MSG\_LENGTH).

Specifies the maximum message length that can be transmitted on the channel. This is compared with the value for the remote channel and the actual maximum is the lowest of the two values.

The value zero means the maximum message length for the queue manager.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems not listed above, and 32-bit Windows, the maximum message length is 4 MB (4 194 304 bytes).

### *SecurityUserData* (MQCFST)

Security exit user data (parameter identifier: MQCACH\_SEC\_EXIT\_USER\_DATA).

Specifies user data that is passed to the security exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

### *MsgUserData* (MQCFSL)

Message exit user data (parameter identifier: MQCACH\_MSG\_EXIT\_USER\_DATA).

Specifies user data that is passed to the message exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *MsgExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

### *SendUserData* (MQCFSL)

Send exit user data (parameter identifier: MQCACH\_SEND\_EXIT\_USER\_DATA).

Specifies user data that is passed to the send exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *SendExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed

MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

#### *ReceiveUserData* (MQCFSL)

Receive exit user data (parameter identifier: MQCACH\_RCV\_EXIT\_USER\_DATA).

Specifies user data that is passed to the receive exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *ReceiveExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

#### *ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

Specify the name of the machine as required for the stated

*TransportType*:

- For MQXPT\_LU62 on OS/2, specify the fully-qualified name of the partner LU. On OS/400, and UNIX systems, specify the name of the CPI-C communications side object. On Windows NT specify the CPI-C symbolic destination name.
- For MQXPT\_TCP specify either the host name or the network address of the remote machine.
- For MQXPT\_NETBIOS specify the NetBIOS station name.
- For MQXPT\_SPX specify the 4-byte network address, the 6-byte node address, and the 2-byte socket number. These should be entered in hexadecimal, with a period separating the network and node addresses. The socket number should be enclosed in brackets, for example:  

```
CONNNAME('0a0b0c0d.804abcde23a1(5e86)')
```

If the socket number is omitted, the MQSeries default value (5e86 hex) is assumed.
- For MQXPT\_UDP specify either the host name or the network address of the remote machine.

|  
|

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

A transmission queue name is required (either previously defined or specified here) if *ChannelType* is MQCHT\_SENDER or MQCHT\_SERVER. It is not valid for other channel types.

### *MCAName* (MQCFST)

Message channel agent name (parameter identifier: MQCACH\_MCA\_NAME).

This is reserved, and if specified can be set only to blanks.

The maximum length of the string is MQ\_MCA\_NAME\_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *DiscInterval* (MQCFIN)

Disconnection interval (parameter identifier: MQIACH\_DISC\_INTERVAL).

This defines the maximum number of seconds that the channel waits for messages to be put on a transmission queue before terminating the channel.

Specify a value in the range 0 through 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ShortRetryCount* (MQCFIN)

Short retry count (parameter identifier: MQIACH\_SHORT\_RETRY).

The maximum number of attempts that are made by a sender or server channel to establish a connection to the remote machine, at intervals specified by *ShortRetryInterval* before the (normally longer) *LongRetryCount* and *LongRetryInterval* are used.

Retry attempts are made if the channel fails to connect initially (whether it is started automatically by the channel initiator or by an explicit command), and also if the connection fails after the channel has successfully connected. However, if the cause of the failure is such that retry is unlikely to be successful, retries are not attempted.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ShortRetryInterval* (MQCFIN)

Short timer (parameter identifier: MQIACH\_SHORT\_TIMER).

Specifies the short retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in

seconds between attempts to establish a connection to the remote machine.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 through 999 999. Values exceeding this are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

#### *LongRetryCount* (MQCFIN)

Long retry count (parameter identifier: MQIACH\_LONG\_RETRY).

When a sender or server channel is attempting to connect to the remote machine, and the count specified by *ShortRetryCount* has been exhausted, this specifies the maximum number of further attempts that are made to connect to the remote machine, at intervals specified by *LongRetryInterval*.

If this count is also exhausted without success, an error is logged to the operator, and the channel is stopped. The channel must subsequently be restarted with a command (it is not started automatically by the channel initiator), and it then makes only one attempt to connect, as it is assumed that the problem has now been cleared by the administrator. The retry sequence is not carried out again until after the channel has successfully connected.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

#### *LongRetryInterval* (MQCFIN)

Long timer (parameter identifier: MQIACH\_LONG\_TIMER).

Specifies the long retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine, after the count specified by *ShortRetryCount* has been exhausted.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 through 999 999. Values exceeding this are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

#### *DataConversion* (MQCFIN)

Whether sender should convert application data (parameter identifier: MQIACH\_DATA\_CONVERSION).

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

The value may be:

MQCDC\_NO\_SENDER\_CONVERSION

No conversion by sender.

MQCDC\_SENDER\_CONVERSION

Conversion by sender.

This value is not supported on 32-bit Windows.

### *PutAuthority* (MQCFIN)

Put authority (parameter identifier: MQIACH\_PUT\_AUTHORITY).

Specifies whether the user identifier in the context information associated with a message should be used to establish authority to put the message on the destination queue.

This parameter is valid only for channels with a *ChannelType* value of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

The value may be:

MQPA\_DEFAULT

Default user identifier is used.

MQPA\_CONTEXT

Context user identifier is used.

### *MCAType* (MQCFIN)

Message channel agent type (parameter identifier: MQIACH\_MCA\_TYPE).

Specifies the type of the message channel agent program.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, or MQCHT\_CLUSSDR.

The value may be:

MQMCAT\_PROCESS

Process.

MQMCAT\_THREAD

Thread (OS/2 and Windows NT only).

### *MCAUserIdentifier* (MQCFST)

Message channel agent user identifier (parameter identifier: MQCACH\_MCA\_USER\_ID).

If this is nonblank, it is the user identifier which is to be used by the message channel agent for authorization to access MQ resources, including (if *PutAuthority* is MQPA\_DEFAULT) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default user identifier. This user identifier can be overridden by one supplied by a channel security exit.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_CLNTCONN.

The maximum length of the MCA user identifier depends on the environment in which the MCA is running. MQ\_MCA\_USER\_ID\_LENGTH

gives the maximum length for the environment for which your application is running. MQ\_MAX\_MCA\_USER\_ID\_LENGTH gives the maximum for all supported environments.

On Windows NT, you can optionally qualify a user identifier with the domain name in the following format: user@domain

#### *UserIdentifier* (MQCFST)

Task user identifier (parameter identifier: MQCACH\_USER\_ID).

This is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

- This parameter is supported in the following environments: Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems.
- On 32-bit Windows, the parameter is accepted but ignored.

The maximum length of the string is MQ\_USER\_ID\_LENGTH. However, only the first 10 characters are used.

#### *Password* (MQCFST)

Password (parameter identifier: MQCACH\_PASSWORD).

This is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, or MQCHT\_CLUSSDR.

- This parameter is supported in the following environments: Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems.
- On 32-bit Windows, the parameter is accepted but ignored.

The maximum length of the string is MQ\_PASSWORD\_LENGTH. However, only the first 10 characters are used.

#### *MsgRetryExit* (MQCFST)

Message retry exit name (parameter identifier: MQCACH\_MR\_EXIT\_NAME).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be blank.

If a nonblank name is defined, the exit is invoked prior to performing a wait before retrying a failing message.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryUserData* (MQCFST)

Message retry exit user data (parameter identifier: MQCACH\_MR\_EXIT\_USER\_DATA).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but ignored.

Specifies user data that is passed to the message retry exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryCount* (MQCFIN)

Message retry count (parameter identifier: MQIACH\_MR\_COUNT).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be zero.

Specifies the number of times that a failing message should be retried.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryInterval* (MQCFIN)

Message retry interval (parameter identifier: MQIACH\_MR\_INTERVAL).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be zero.

Specifies the minimum time interval in milliseconds between retries of failing messages.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *HeartbeatInterval* (MQCFIN)

Heartbeat interval (parameter identifier: MQIACH\_HB\_INTERVAL).

The interpretation of this parameter depends on the channel type, as follows:

- For a channel type of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_RECEIVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR, this is the time in seconds between heartbeat flows passed from the sending MCA when there are no messages on the transmission queue. This gives the receiving MCA the opportunity to quiesce the channel. To be useful, *HeartbeatInterval* should be significantly less than *DiscInterval*. However, the only check is that the value is within the permitted range.

This type of heartbeat is supported in the following environments: AIX, HP-UX, OS/390, OS/2, OS/400, Sun Solaris, Windows NT.

- For a channel type of MQCHT\_CLNTCONN or MQCHT\_SVRCONN, this is the time in seconds between heartbeat flows passed from the server MCA when that MCA has issued an MQGET call with the MQGMO\_WAIT option on behalf of a client application. This allows the server MCA to handle situations where the client connection fails during an MQGET with MQGMO\_WAIT.

This type of heartbeat is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value must be in the range 0 through 999 999. A value of 0 means that no heartbeat exchange occurs. The value that is actually used is the larger of the values specified at the sending side and receiving side.

#### *NonPersistentMsgSpeed* (MQCFIN)

Speed at which nonpersistent messages are to be sent (parameter identifier: MQIACH\_NPM\_SPEED).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, 32-bit Windows, Windows NT.

Specifying MQNPMS\_FAST means that nonpersistent messages on a channel need not wait for a syncpoint before being made available for retrieval. The advantage of this is that nonpersistent messages become available for retrieval far more quickly. The disadvantage is that because they do not wait for a syncpoint, they may be lost if there is a transmission failure.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_RECEIVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR. The value may be:

MQNPMS\_NORMAL  
Normal speed.

MQNPMS\_FAST  
Fast speed.

#### *BatchInterval* (MQCFIN)

Batch interval (parameter identifier: MQIACH\_BATCH\_INTERVAL).

This is the approximate time in milliseconds that a channel will keep a batch open, if fewer than *BatchSize* messages have been transmitted in the current batch.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

If *BatchInterval* is greater than zero, the batch is terminated by whichever of the following occurs first:

- *BatchSize* messages have been sent, or
- *BatchInterval* milliseconds have elapsed since the start of the batch.

If *BatchInterval* is zero, the batch is terminated by whichever of the following occurs first:

- *BatchSize* messages have been sent, or

## Copy Channel

- The transmission queue becomes empty.

*BatchInterval* must be in the range 0 through 999 999 999.

This parameter applies only to channels with a *ChannelType* of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the channel belongs. *ClusterName* and *ClusterNameList* must not both be specified.

This parameter applies only to channels with a *ChannelType* of:

MQCHT\_CLUSSDR  
MQCHT\_CLUSRCVR

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *ClusterNameList* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the channel belongs. *ClusterName* and *ClusterNameList* must not both be specified.

This parameter applies only to channels with a *ChannelType* of:

MQCHT\_CLUSSDR  
MQCHT\_CLUSRCVR

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *NetworkPriority* (MQCFIN)

Network priority (parameter identifier: MQIACH\_NETWORK\_PRIORITY).

The priority for the network connection. If there are multiple paths available, distributed queuing selects the path with the highest priority.

The value must be in the range 0 (lowest) through 9 (highest).

This parameter applies only to channels with a *ChannelType* of MQCHT\_CLUSRCVR

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

### *Reason* (MQLONG)

The value may be:

MQRCCF\_BATCH\_INT\_ERROR  
Batch interval not valid.

MQRCCF\_BATCH\_INT\_WRONG\_TYPE  
Batch interval parameter not allowed for this channel type.

MQRCCF\_BATCH\_SIZE\_ERROR  
Batch size not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFSL\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFSL\_TOTAL\_LENGTH\_ERROR  
Total string length error.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_ALREADY\_EXISTS  
Channel already exists.

MQRCCF\_CHANNEL\_NAME\_ERROR  
Channel name error.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_CONN\_NAME\_ERROR  
Error in connection name parameter.

MQRCCF\_DISC\_INT\_ERROR  
Disconnection interval not valid.

MQRCCF\_DISC\_INT\_WRONG\_TYPE  
Disconnection interval not allowed for this channel type.

MQRCCF\_HB\_INTERVAL\_ERROR  
Heartbeat interval not valid.

MQRCCF\_HB\_INTERVAL\_WRONG\_TYPE  
Heartbeat interval parameter not allowed for this channel type.

MQRCCF\_LONG\_RETRY\_ERROR  
Long retry count not valid.

MQRCCF\_LONG\_RETRY\_WRONG\_TYPE  
Long retry parameter not allowed for this channel type.

MQRCCF\_LONG\_TIMER\_ERROR  
Long timer not valid.

MQRCCF\_LONG\_TIMER\_WRONG\_TYPE  
Long timer parameter not allowed for this channel type.

MQRCCF\_MAX\_MSG\_LENGTH\_ERROR  
Maximum message length not valid.

MQRCCF\_MCA\_NAME\_ERROR  
Message channel agent name error.

MQRCCF\_MCA\_NAME\_WRONG\_TYPE  
Message channel agent name not allowed for this channel type.

MQRCCF\_MCA\_TYPE\_ERROR  
Message channel agent type not valid.

MQRCCF\_MISSING\_CONN\_NAME  
Connection name parameter required but missing.

MQRCCF\_MR\_COUNT\_ERROR  
Message retry count not valid.

MQRCCF\_MR\_COUNT\_WRONG\_TYPE  
Message-retry count parameter not allowed for this channel type.

MQRCCF\_MR\_EXIT\_NAME\_ERROR  
Channel message-retry exit name error.

MQRCCF\_MR\_EXIT\_NAME\_WRONG\_TYPE  
Message-retry exit parameter not allowed for this channel type.

MQRCCF\_MR\_INTERVAL\_ERROR  
Message retry interval not valid.

MQRCCF\_MR\_INTERVAL\_WRONG\_TYPE  
Message-retry interval parameter not allowed for this channel type.

MQRCCF\_MSG\_EXIT\_NAME\_ERROR  
Channel message exit name error.

MQRCCF\_NET\_PRIORITY\_ERROR  
Network priority value error.

MQRCCF\_NET\_PRIORITY\_WRONG\_TYPE  
Network priority attribute not allowed for this channel type.

MQRCCF\_NPM\_SPEED\_ERROR  
Nonpersistent message speed not valid.

MQRCCF\_NPM\_SPEED\_WRONG\_TYPE  
Nonpersistent message speed parameter not allowed for this channel type.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_PUT\_AUTH\_ERROR  
Put authority value not valid.

MQRCCF\_PUT\_AUTH\_WRONG\_TYPE  
Put authority parameter not allowed for this channel type.

MQRCCF\_RCV\_EXIT\_NAME\_ERROR  
Channel receive exit name error.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_SEC\_EXIT\_NAME\_ERROR  
Channel security exit name error.

MQRCCF\_SEND\_EXIT\_NAME\_ERROR  
Channel send exit name error.

MQRCCF\_SEQ\_NUMBER\_WRAP\_ERROR  
Sequence wrap number not valid.

MQRCCF\_SHORT\_RETRY\_ERROR  
Short retry count not valid.

MQRCCF\_SHORT\_RETRY\_WRONG\_TYPE  
Short retry parameter not allowed for this channel type.

MQRCCF\_SHORT\_TIMER\_ERROR  
Short timer value not valid.

MQRCCF\_SHORT\_TIMER\_WRONG\_TYPE  
Short timer parameter not allowed for this channel type.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

MQRCCF\_XMIT\_PROTOCOL\_TYPE\_ERR  
Transmission protocol type not valid.

MQRCCF\_XMIT\_Q\_NAME\_ERROR  
Transmission queue name error.

MQRCCF\_XMIT\_Q\_NAME\_WRONG\_TYPE  
Transmission queue name not allowed for this channel type.

---

### Copy Namelist

The Copy Namelist (MQCMD\_COPY\_NAMELIST) command creates a new MQSeries namelist definition, using, for attributes not specified in the command, the attribute values of an existing namelist definition.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*FromNamelistName*, *ToNamelistName*

**Optional parameters:**

*Replace*, *NamelistDesc*, *Names*

### Required parameters

*FromNamelistName* (MQCFST)

The name of the namelist definition to be copied from (parameter identifier: MQCACF\_FROM\_NAMELIST\_NAME).

This specifies the name of the existing namelist definition that contains values for the attributes not specified in this command.

The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

*ToNamelistName* (MQCFST)

To namelist name (parameter identifier: MQCACF\_TO\_NAMELIST\_NAME).

This specifies the name of the new namelist definition. If a namelist definition with this name already exists, *Replace* must be specified as MQRP\_YES.

The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

### Optional parameters

*Replace* (MQCFIN)

Replace attributes (parameter identifier: MQIACF\_REPLACE).

If a namelist definition with the same name as *ToNamelistName* already exists, this specifies whether it is to be replaced. The value may be:

MQRP\_YES

Replace existing definition.

MQRP\_NO

Do not replace existing definition.

*NamelistDesc* (MQCFST)

Description of namelist definition (parameter identifier: MQCA\_NAMELIST\_DESC).

This is a plain-text comment that provides descriptive information about the namelist definition. It should contain only displayable characters.

If characters that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing are used, they may be translated incorrectly.

The maximum length of the string is MQ\_NAMELIST\_DESC\_LENGTH.

*Names* (MQCFSL)

Names to be placed in the namelist (parameter identifier: MQCA\_NAMES).

The number of names in the list is given by the *Count* field in the MQCFSL structure. The length of each name is given by the *StringLength* field in that structure. The maximum length of a name is MQ\_OBJECT\_NAME\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
Attribute value not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFSL\_COUNT\_ERROR  
Name count not valid.

MQRCCF\_CFSL\_STRING\_LENGTH\_ERROR  
String length value not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_OBJECT\_ALREADY\_EXISTS  
Object already exists.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

## Copy Namelist

```
| MQRCCF_PARM_SEQUENCE_ERROR  
|     Parameter sequence not valid.  
| MQRCCF_REPLACE_VALUE_ERROR  
|     Replace value not valid.  
| MQRCCF_STRUCTURE_TYPE_ERROR  
|     Structure type not valid.
```

## Copy Process

The Copy Process (MQCMD\_COPY\_PROCESS) command creates a new MQSeries process definition, using, for attributes not specified in the command, the attribute values of an existing process definition.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

### **Required parameters:**

*FromProcessName, ToProcessName*

### **Optional parameters:**

*Replace, ProcessDesc, ApplType, ApplId, EnvData, UserData*

## Required parameters

*FromProcessName* (MQCFST)

The name of the process definition to be copied from (parameter identifier: MQCACF\_FROM\_PROCESS\_NAME).

Specifies the name of the existing process definition that contains values for the attributes not specified in this command.

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

*ToProcessName* (MQCFST)

To process name (parameter identifier: MQCACF\_TO\_PROCESS\_NAME).

The name of the new process definition. If a process definition with this name already exists, *Replace* must be specified as MQRP\_YES.

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

## Optional parameters

*Replace* (MQCFIN)

Replace attributes (parameter identifier: MQIACF\_REPLACE).

If a process definition with the same name as *ToProcessName* already exists, this specifies whether it is to be replaced.

The value may be:

MQRP\_YES

Replace existing definition.

MQRP\_NO

Do not replace existing definition.

*ProcessDesc* (MQCFST)

Description of process definition (parameter identifier: MQCA\_PROCESS\_DESC).

A plain-text comment that provides descriptive information about the process definition. It should contain only displayable characters.

The maximum length of the string is MQ\_PROCESS\_DESC\_LENGTH.

If characters that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing are used, they may be translated incorrectly.

### *ApplType* (MQCFIN)

Application type (parameter identifier: MQIA\_APPL\_TYPE).

Valid application types are:

MQAT\_OS400

OS/400 application.

MQAT\_OS2

OS/2 or Presentation Manager application.

MQAT\_WINDOWS\_NT

Windows NT or 32-bit Windows application.

MQAT\_DOS

DOS client application.

MQAT\_WINDOWS

Windows client or 16-bit Windows application.

MQAT\_UNIX

UNIX application.

MQAT\_AIX

AIX application (same value as MQAT\_UNIX).

MQAT\_CICS

CICS transaction.

MQAT\_VMS

Digital OpenVMS application.

MQAT\_NSK

Tandem NonStop Kernel application.

MQAT\_DEFAULT

Default application type.

*user-value*: User-defined application type in the range 65 536 through 999 999 999 (not checked).

Only application types (other than user-defined types) that are supported on the platform at which the command is executed should be used:

- On Digital OpenVMS:  
MQAT\_VMS (default),  
MQAT\_DOS,  
MQAT\_WINDOWS, and  
MQAT\_DEFAULT are supported.
- On OS/400:  
MQAT\_OS400 (default),  
MQAT\_CICS, and  
MQAT\_DEFAULT are supported.
- On OS/2:  
MQAT\_OS2 (default),  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_AIX,

MQAT\_CICS, and  
MQAT\_DEFAULT are supported.

- On Tandem NonStop Kernel:  
MQAT\_NSK (default),  
MQAT\_DOS,  
MQAT\_WINDOWS, and  
MQAT\_DEFAULT are supported.
- On Windows NT:  
MQAT\_WINDOWS\_NT (default),  
MQAT\_OS2  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_CICS, and  
MQAT\_DEFAULT are supported.
- On UNIX systems:  
MQAT\_UNIX (default),  
MQAT\_OS2,  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_CICS, and  
MQAT\_DEFAULT are supported.

#### *AppId* (MQCFST)

Application identifier (parameter identifier: MQCA\_APPL\_ID).

This is the name of the application to be started, on the platform for which the command is executing, and might typically be a program name and library name.

The maximum length of the string is MQ\_PROCESS\_APPL\_ID\_LENGTH.

#### *EnvData* (MQCFST)

Environment data (parameter identifier: MQCA\_ENV\_DATA).

A character string that contains environment information pertaining to the application to be started.

The maximum length of the string is  
MQ\_PROCESS\_ENV\_DATA\_LENGTH.

#### *UserData* (MQCFST)

User data (parameter identifier: MQCA\_USER\_DATA).

A character string that contains user information pertaining to the application (defined by *AppId*) that is to be started.

The maximum length of the string is  
MQ\_PROCESS\_USER\_DATA\_LENGTH.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
Attribute value not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_OBJECT\_ALREADY\_EXISTS  
Object already exists.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Copy Queue

The Copy Queue (MQCMD\_COPY\_Q) command creates a new queue definition, of the same type, using, for attributes not specified in the command, the attribute values of an existing queue definition.

This PCF is supported on all platforms.

**Required parameters:**

*FromQName, ToQName, QType*

**Optional parameters (any QType):**

*Replace, QDesc, InhibitPut, DefPriority, DefPersistence*

**Optional parameters (alias QType):**

*InhibitGet, BaseQName, Scope, ClusterName, ClusterNamelist, DefBind*

**Optional parameters (local QType):**

*InhibitGet, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DistLists, Usage, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, Scope, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent, ClusterName, ClusterNamelist, DefBind*

**Optional parameters (remote QType):**

*RemoteQName, RemoteQMgrName, XmitQName, Scope, ClusterName, ClusterNamelist, DefBind*

**Optional parameters (model QType):**

*InhibitGet, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DistLists, Usage, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, DefinitionType, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent*

## Required parameters

*FromQName* (MQCFST)

From queue name (parameter identifier: MQCACF\_FROM\_Q\_NAME).

Specifies the name of the existing queue definition.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ToQName* (MQCFST)

To queue name (parameter identifier: MQCACF\_TO\_Q\_NAME).

Specifies the name of the new queue definition.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

Queue names must be unique; if a queue definition already exists with the name and type of the new queue, *Replace* must be specified as MQRP\_YES. If a queue definition exists with the same name as and a different type from the new queue, the command will fail.

## Copy Queue

### *QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

The value specified must match the type of the queue being copied.

The value may be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_LOCAL

Local queue.

MQQT\_REMOTE

Local definition of a remote queue.

The following is supported on all platforms, but on OS/400 for receipt by MQSeries for AS/400 V4R2, or later.:

MQQT\_MODEL

Model queue definition.

## Optional parameters

### *Replace* (MQCFIN)

Replace attributes (parameter identifier: MQIACF\_REPLACE).

If the object already exists, the effect is similar to issuing the Change Queue command without the MQFC\_YES option on the *Force* parameter, and with *all* of the other attributes specified. In particular, note that any messages which are on the existing queue are retained.

(The difference between the Change Queue command without MQFC\_YES on the *Force* parameter, and the Copy Queue command with MQRP\_YES on the *Replace* parameter, is that the Change Queue command does not change unspecified attributes, but Copy Queue with MQRP\_YES sets *all* the attributes. When you use MQRP\_YES, unspecified attributes are taken from the queue specified by *FromQName*, and the existing attributes of the object being replaced, if one exists, are ignored.)

The command fails if both of the following are true:

- The command sets attributes that would require the use of MQFC\_YES on the *Force* parameter if you were using the Change Queue command
- The object is open

The Change Queue command with MQFC\_YES on the *Force* parameter succeeds in this situation.

If MQSCO\_CELL is specified on the *Scope* parameter on OS/2 or UNIX systems, and there is already a queue with the same name in the cell directory, the command fails, whether or not MQRP\_YES is specified.

The value may be:

MQRP\_YES

Replace existing definition.

MQRP\_NO

Do not replace existing definition.

*QDesc* (MQCFST)

Queue description (parameter identifier: MQCA\_Q\_DESC).

Text that briefly describes the object. The maximum length of the string is MQ\_Q\_DESC\_LENGTH.

Use characters from the character set identified by the coded character set identifier (CCSID) for the queue manager on which the command is executing to ensure that the text is translated correctly.

*InhibitPut* (MQCFIN)

Whether put operations are allowed (parameter identifier: MQIA\_INHIBIT\_PUT).

Specifies whether messages can be put on the queue.

The value may be:

MQQA\_PUT\_ALLOWED

Put operations are allowed.

MQQA\_PUT\_INHIBITED

Put operations are inhibited.

*DefPriority* (MQCFIN)

Default priority (parameter identifier: MQIA\_DEF\_PRIORITY).

Specifies the default priority of messages put on the queue. The value must be in the range zero through to the maximum priority value that is supported (this is 9).

*DefPersistence* (MQCFIN)

Default persistence (parameter identifier: MQIA\_DEF\_PERSISTENCE).

Specifies the default for message-persistence on the queue. Message persistence determines whether or not messages are preserved across restarts of the queue manager.

The value may be:

MQPER\_PERSISTENT

Message is persistent.

MQPER\_NOT\_PERSISTENT

Message is not persistent.

*InhibitGet* (MQCFIN)

Whether get operations are allowed (parameter identifier: MQIA\_INHIBIT\_GET).

The value may be:

MQQA\_GET\_ALLOWED

Get operations are allowed.

MQQA\_GET\_INHIBITED

Get operations are inhibited.

*BaseQName* (MQCFST)

Queue name to which the alias resolves (parameter identifier: MQCA\_BASE\_Q\_NAME).

This is the name of a local or remote queue that is defined to the local queue manager. The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *ProcessName* (MQCFST)

Name of process definition for the queue (parameter identifier: MQCA\_PROCESS\_NAME).

Specifies the local name of the MQSeries process that identifies the application that should be started when a trigger event occurs.

- On AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT, if the queue is a transmission queue the process name can be left as all blanks.
- On 32-bit Windows, this parameter is accepted but ignored.
- In other environments, the process name must be nonblank for a trigger event to occur (although it can be set after the queue has been created).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

### *MaxQDepth* (MQCFIN)

Maximum queue depth (parameter identifier: MQIA\_MAX\_Q\_DEPTH).

The maximum number of messages allowed on the queue. Note that other factors may cause the queue to be treated as full; for example, it will be appear to be full if there is no storage available for a message.

Specify a value in the range 0 through 640 000.

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIA\_MAX\_MSG\_LENGTH).

Specifies the maximum length for messages on the queue. Because applications may use the value of this attribute to determine the size of buffer they need to retrieve messages from the queue, the value should be changed only if it is known that this will not cause an application to operate incorrectly.

You are recommended not to set a value that is greater than the queue manager's *MaxMsgLength* attribute.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems not listed above, and 32-bit Windows, the maximum message length is 4 MB (4 194 304 bytes).

### *BackoutThreshold* (MQCFIN)

Backout threshold (parameter identifier: MQIA\_BACKOUT\_THRESHOLD).

That is, the number of times a message can be backed out before it is transferred to the backout queue specified by *BackoutRequeueName*.

If the value is subsequently reduced, any messages already on the queue that have been backed out at least as many times as the new value remain on the queue, but such messages are transferred if they are backed out again.

Specify a value in the range 0 through 999 999 999.

*BackoutRequeueName* (MQCFST)

Excessive backout requeue name (parameter identifier: MQCA\_BACKOUT\_REQ\_Q\_NAME).

Specifies the local name of the queue (not necessarily a local queue) to which a message is transferred if it is backed out more times than the value of *BackoutThreshold*.

The backout queue does not need to exist at this time but it must exist when the *BackoutThreshold* value is exceeded.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*Shareability* (MQCFIN)

Whether queue can be shared (parameter identifier: MQIA\_SHAREABILITY).

Specifies whether multiple instances of applications, can open this queue for input.

The value may be:

MQQA\_SHAREABLE

Queue is shareable.

MQQA\_NOT\_SHAREABLE

Queue is not shareable.

*DefInputOpenOption* (MQCFIN)

Default input open option (parameter identifier: MQIA\_DEF\_INPUT\_OPEN\_OPTION).

Specifies the default share option for applications opening this queue for input.

The value may be:

MQOO\_INPUT\_EXCLUSIVE

Open queue to get messages with exclusive access.

MQOO\_INPUT\_SHARED

Open queue to get messages with shared access.

*HardenGetBackout* (MQCFIN)

Whether to harden backout count (parameter identifier: MQIA\_HARDEN\_GET\_BACKOUT).

Specifies whether the count of backed out messages should be saved (hardened) across restarts of the queue manager.

**Note:** MQSeries for AS/400 always hardens the count, regardless of the setting of this attribute.

The value may be:

MQQA\_BACKOUT\_HARDENED

Backout count remembered.

MQQA\_BACKOUT\_NOT\_HARDENED

Backout count may not be remembered.

*MsgDeliverySequence* (MQCFIN)

Whether priority is relevant (parameter identifier: MQIA\_MSG\_DELIVERY\_SEQUENCE).

The value may be:

MQMDS\_PRIORITY

Messages are returned in priority order.

MQMDS\_FIFO

Messages are returned in FIFO order (first in, first out).

*RetentionInterval* (MQCFIN)

Retention interval (parameter identifier: MQIA\_RETENTION\_INTERVAL).

The number of hours for which the queue may be needed, based on the date and time when the queue was created.

This information is available to a housekeeping application or an operator and may be used to determine when a queue is no longer required. The queue manager does not delete queues nor does it prevent queues from being deleted if their retention interval has not expired. It is the user's responsibility to take any required action.

Specify a value in the range 0 through 999 999 999.

*DistLists* (MQCFIN)

Distribution list support (parameter identifier: MQIA\_DIST\_LISTS).

Specifies whether distribution-list messages can be placed on the queue.

**Note:** This attribute is set by the sending message channel agent (MCA) which removes messages from the queue; this happens each time the sending MCA establishes a connection to a receiving MCA on a partnering queue manager. The attribute should not normally be set by administrators, although it can be set if the need arises.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQDL\_SUPPORTED

Distribution lists supported.

MQDL\_NOT\_SUPPORTED

Distribution lists not supported.

*Usage* (MQCFIN)

Usage (parameter identifier: MQIA\_USAGE).

Specifies whether the queue is for normal usage or for transmitting messages to a remote queue manager.

The value may be:

MQUS\_NORMAL  
Normal usage.

MQUS\_TRANSMISSION  
Transmission queue.

*InitiationQName* (MQCFST)

Initiation queue name (parameter identifier: MQCA\_INITIATION\_Q\_NAME).

The local queue for trigger messages relating to the new, or changed, queue. The initiation queue must be on the same queue manager.

On 32-bit Windows, this parameter is accepted but ignored.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TriggerControl* (MQCFIN)

Trigger control (parameter identifier: MQIA\_TRIGGER\_CONTROL).

Specifies whether trigger messages are written to the initiation queue.

The value may be:

MQTC\_OFF  
Trigger messages not required.

MQTC\_ON  
Trigger messages required.

This value is not supported on 32-bit Windows.

*TriggerType* (MQCFIN)

Trigger type (parameter identifier: MQIA\_TRIGGER\_TYPE).

Specifies the condition that initiates a trigger event. When the condition is true, a trigger message is sent to the initiation queue.

On 32-bit Windows, this parameter is accepted but ignored.

The value may be:

MQTT\_NONE  
No trigger messages.

MQTT EVERY  
Trigger message for every message.

MQTT\_FIRST  
Trigger message when queue depth goes from 0 to 1.

MQTT\_DEPTH  
Trigger message when depth threshold exceeded.

*TriggerMsgPriority* (MQCFIN)

Threshold message priority for triggers (parameter identifier: MQIA\_TRIGGER\_MSG\_PRIORITY).

Specifies the minimum priority that a message must have before it can cause, or be counted for, a trigger event. The value must be in the range of priority values that are supported (0 through 9).

On 32-bit Windows, this parameter is accepted but ignored.

### *TriggerDepth* (MQCFIN)

Trigger depth (parameter identifier: MQIA\_TRIGGER\_DEPTH).

Specifies (when *TriggerType* is MQTT\_DEPTH) the number of messages that will initiate a trigger message to the initiation queue.

Specify a value in the range 1 through 999 999 999.

On 32-bit Windows, this parameter is accepted but ignored.

### *TriggerData* (MQCFST)

Trigger data (parameter identifier: MQCA\_TRIGGER\_DATA).

Specifies user data that the queue manager includes in the trigger message. This data is made available to the monitoring application that processes the initiation queue and to the application that is started by the monitor.

On 32-bit Windows, this parameter is accepted but ignored.

The maximum length of the string is MQ\_TRIGGER\_DATA\_LENGTH.

### *RemoteQName* (MQCFST)

Name of remote queue as known locally on the remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_NAME).

If this definition is used for a local definition of a remote queue, *RemoteQName* must not be blank when the open occurs.

If this definition is used for a queue-manager alias definition, *RemoteQName* must be blank when the open occurs.

If this definition is used for a reply-to alias, this name is the name of the queue that is to be the reply-to queue.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *RemoteQMgrName* (MQCFST)

Name of remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_MGR\_NAME).

If an application opens the local definition of a remote queue, *RemoteQMgrName* must not be blank or the name of the connected queue manager. If *XmitQName* is blank there must be a local queue of this name, which is to be used as the transmission queue.

If this definition is used for a queue-manager alias, *RemoteQMgrName* is the name of the queue manager, which can be the name of the connected queue manager. Otherwise, if *XmitQName* is blank, when the queue is opened there must be a local queue of this name, which is to be used as the transmission queue.

If this definition is used for a reply-to alias, this name is the name of the queue manager that is to be the reply-to queue manager.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

Specifies the local name of the transmission queue to be used for messages destined for the remote queue, for either a remote queue or for a queue-manager alias definition.

If *XmitQName* is blank, a queue with the same name as *RemoteQMgrName* is used as the transmission queue.

This attribute is ignored if the definition is being used as a queue-manager alias and *RemoteQMgrName* is the name of the connected queue manager.

It is also ignored if the definition is used as a reply-to queue alias definition.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

#### *DefinitionType* (MQCFIN)

Queue definition type (parameter identifier: MQIA\_DEFINITION\_TYPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQQDT\_PERMANENT\_DYNAMIC  
Dynamically defined permanent queue.

MQQDT\_TEMPORARY\_DYNAMIC  
Dynamically defined temporary queue.

#### *Scope* (MQCFIN)

Scope of the queue definition (parameter identifier: MQIA\_SCOPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

Specifies whether the scope of the queue definition does not extend beyond the queue manager which owns the queue, or whether the queue name is contained in a cell directory, so that it is known to all of the queue managers within the cell.

Model and dynamic queues cannot have cell scope.

The command fails if the new queue has a *Scope* attribute of MQSCO\_CELL, but no name service supporting a cell directory has been configured.

The value may be:

MQSCO\_Q\_MGR  
Queue-manager scope.

MQSCO\_CELL  
Cell scope.

This value is not supported on OS/400 and 32-bit Windows.

#### *QDepthHighLimit* (MQCFIN)

High limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth High event.

This event indicates that an application has put a message to a queue, and this has caused the number of messages on the queue to become greater than or equal to the queue depth high threshold. See the *QDepthHighEvent* parameter.

The value is expressed as a percentage of the maximum queue depth (*MaxQDepth* attribute), and must be greater than or equal to zero and less than or equal to 100.

### *QDepthLowLimit* (MQCFIN)

Low limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth Low event.

This event indicates that an application has retrieved a message from a queue, and this has caused the number of messages on the queue to become less than or equal to the queue depth low threshold. See the *QDepthLowEvent* parameter.

The value is expressed as a percentage of the maximum queue depth (*MaxQDepth* attribute), and must be greater than or equal to zero and less than or equal to 100.

### *QDepthMaxEvent* (MQCFIN)

Controls whether Queue Full events are generated (parameter identifier: MQIA\_Q\_DEPTH\_MAX\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Full event indicates that an **MQPUT** call to a queue has been rejected because the queue is full, that is, the queue depth has already reached its maximum value.

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

### *QDepthHighEvent* (MQCFIN)

Controls whether Queue Depth High events are generated (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Depth High event indicates that an application has put a message on a queue, and this has caused the number of messages on the queue to become greater than or equal to the queue depth high threshold (see the *QDepthHighLimit* parameter).

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

*QDepthLowEvent* (MQCFIN)

Controls whether Queue Depth Low events are generated (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Depth Low event indicates that an application has retrieved a message from a queue, and this has caused the number of messages on the queue to become less than or equal to the queue depth low threshold (see the *QDepthLowLimit* parameter).

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

*QServiceInterval* (MQCFIN)

Target for queue service interval (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The service interval used for comparison to generate Queue Service Interval High and Queue Service Interval OK events. See the *QServiceIntervalEvent* parameter.

The value is in units of milliseconds, and must be greater than or equal to zero, and less than or equal to 999 999 999.

*QServiceIntervalEvent* (MQCFIN)

Controls whether Queue Service Interval High or Queue Service Interval OK events are generated (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Service Interval High event is generated when a check indicates that no messages have been retrieved from the queue for at least the time indicated by the *QServiceInterval* attribute.

A Queue Service Interval OK event is generated when a check indicates that messages have been retrieved from the queue within the time indicated by the *QServiceInterval* attribute.

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

MQQSIE\_HIGH  
Queue Service Interval High events enabled.

- Queue Service Interval High events are **enabled** and

- Queue Service Interval OK events are **disabled**.

### MQQSIE\_OK

Queue Service Interval OK events enabled.

- Queue Service Interval High events are **disabled** and
- Queue Service Interval OK events are **enabled**.

### MQQSIE\_NONE

No queue service interval events enabled.

- Queue Service Interval High events are **disabled** and
- Queue Service Interval OK events are also **disabled**.

### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

*ClusterName* and *ClusterNamelist* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

### *ClusterNamelist* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

*ClusterName* and *ClusterNamelist* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

### *DefBind* (MQCFIN)

Bind definition (parameter identifier: MQIA\_DEF\_BIND).

The parameter specifies the binding to be used when MQOO\_BIND\_AS\_Q\_DEF is specified on the MQOPEN call. The value may be:

#### MQBND\_BIND\_ON\_OPEN

The binding is fixed by the MQOPEN call.

#### MQBND\_BIND\_NOT\_FIXED

The binding is not fixed.

Changes to this parameter do not affect instances of the queue that are open.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
Attribute value not valid.

MQRCCF\_CELL\_DIR\_NOT\_AVAILABLE  
Cell directory is not available.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CLUSTER\_NAME\_CONFLICT  
Cluster name conflict.

MQRCCF\_CLUSTER\_Q\_USAGE\_ERROR  
Cluster usage conflict.

MQRCCF\_DYNAMIC\_Q\_SCOPE\_ERROR  
Dynamic queue scope error.

MQRCCF\_LIKE\_OBJECT\_WRONG\_TYPE  
New and existing objects have different type.

MQRCCF\_OBJECT\_ALREADY\_EXISTS  
Object already exists.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_OBJECT\_OPEN  
Object is open.

MQRCCF\_OBJECT\_WRONG\_TYPE  
Object has wrong type.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

## Copy Queue

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_Q\_ALREADY\_IN\_CELL  
Queue already exists in cell.

MQRCCF\_Q\_TYPE\_ERROR  
Queue type not valid.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Create Channel

The Create Channel (MQCMD\_CREATE\_CHANNEL) command creates an MQSeries channel definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager. If a system default channel exists for the type of channel being created, the default values are taken from there.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName, ChannelType*

**Optional parameters (any ChannelType):**

*Replace, TransportType, ChannelDesc, SecurityExit, MsgExit, SendExit, ReceiveExit, MaxMsgLength, SecurityUserData, MsgUserData, SendUserData, ReceiveUserData*

**Optional parameters (sender or server ChannelType):**

*ModeName, TpName, ConnectionName, XmitQName, MCAName, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, SeqNumberWrap, DataConversion, MCAType, MCAUserIdentifier, UserIdentifier, Password, HeartbeatInterval, NonPersistentMsgSpeed BatchInterval*

**Optional parameters (receiver ChannelType):**

*BatchSize, PutAuthority, SeqNumberWrap, MCAUserIdentifier, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed*

**Optional parameters (requester ChannelType):**

*ModeName, TpName, ConnectionName, MCAName, BatchSize, PutAuthority, SeqNumberWrap, MCAType, MCAUserIdentifier, UserIdentifier, Password, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed*

**Optional parameters (server-connection ChannelType):**

*MCAUserIdentifier,*

**Optional parameters (client-connection ChannelType):**

*ModeName, TpName, QMgrName, ConnectionName, UserIdentifier, Password*

**Optional parameters (cluster-receiver ChannelType):**

*ModeName, TpName, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, DataConversion, BatchSize, PutAuthority, SeqNumberWrap, MCAUserIdentifier, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, ClusterName, ClusterNameList, ConnectionName, NetworkPriority*

**Optional parameters (cluster-sender ChannelType):**

*ModeName, TpName, ConnectionName, MCAName, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, SeqNumberWrap, DataConversion, MCAType, MCAUserIdentifier, UserIdentifier, Password, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, ClusterName, ClusterNameList*

### Required parameters

#### *ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the new channel definition. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

Channel names must be unique; if a channel definition with this name already exists, the value of *Replace* must be MQRP\_YES. The channel type of the existing channel definition must be the same as the channel type of the new channel definition otherwise it cannot be replaced.

#### *ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

Specifies the type of the channel being defined. The value may be:

MQCHT\_SENDER

Sender.

MQCHT\_SERVER

Server.

MQCHT\_RECEIVER

Receiver.

MQCHT\_REQUESTER

Requester.

MQCHT\_SVRCONN

Server-connection (for use by clients).

This value is not supported in the following environment: 32-bit Windows.

MQCHT\_CLNTCONN

Client connection.

This value is not supported in the following environments: OS/400, 32-bit Windows.

MQCHT\_CLUSRCVR

Cluster-receiver.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCHT\_CLUSSDR

Cluster-sender.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### Optional parameters

#### *Replace* (MQCFIN)

Replace channel definition (parameter identifier: MQIACF\_REPLACE).

The value may be:

**MQRP\_YES**

Replace existing definition.

If *ChannelType* is MQCHT\_CLUSSDR, MQRP\_YES can be specified only if the channel was created manually.

**MQRP\_NO**

Do not replace existing definition.

*TransportType* (MQCFIN)

Transmission protocol type (parameter identifier: MQIACH\_XMIT\_PROTOCOL\_TYPE).

No check is made that the correct transport type has been specified if the channel is initiated from the other end. The value may be:

**MQXPT\_LU62**

LU 6.2.

This value is not supported on 32-bit Windows.

**MQXPT\_TCP**

TCP.

This is the *only* value supported on 32-bit Windows.

**MQXPT\_NETBIOS**

NetBIOS.

This value is supported in the following environments: OS/2, 32-bit Windows, Windows NT.

**MQXPT\_SPX**

SPX.

This value is supported in the following environments: OS/2, Windows NT, Windows client, DOS client.

**MQXPT\_DECNET**

DECnet.

This value is supported in the following environment: Digital OpenVMS.

**MQXPT\_UDP**

UDP.

This value is supported in the following environments: 16-bit Windows, AIX.

*ModeName* (MQCFST)

Mode name (parameter identifier: MQCACH\_MODE\_NAME).

This is the LU 6.2 mode name. The maximum length of the string is MQ\_MODE\_NAME\_LENGTH.

- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT, this can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows NT) from the CPI-C symbolic destination name properties.
- On 32-bit Windows, this parameter is accepted but ignored.

## Create Channel

This parameter is valid only for channels with a *TransportType* of MQXPT\_LU62. It is not valid for channels of type MQCHT\_RECEIVER.

### *TpName* (MQCFST)

Transaction program name (parameter identifier: MQCACH\_TP\_NAME).

LU 6.2 transaction program name. The maximum length of the string is MQ\_TP\_NAME\_LENGTH.

On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT, this can be set only to blanks. The actual name is taken instead from the CPI-C Communications Side Object or (on Windows NT) from the CPI-C symbolic destination name properties.

- On 32-bit Windows, this parameter is accepted but ignored.

This parameter is valid only for channels with a *TransportType* of MQXPT\_LU62. It is not valid for channels of type MQCHT\_RECEIVER.

### *QMgrName* (MQCFST)

Queue-manager name (parameter identifier: MQCA\_Q\_MGR\_NAME).

For channels with a *ChannelType* of MQCHT\_CLNTCONN, this is the name of a queue manager to which a client application can request connection.

On 32-bit Windows, this parameter is accepted but ignored.

For channels of other types, this parameter is not valid. The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *ChannelDesc* (MQCFST)

Channel description (parameter identifier: MQCACH\_DESC).

The maximum length of the string is MQ\_CHANNEL\_DESC\_LENGTH.

Use characters from the character set, identified by the coded character set identifier (CCSID) for the message queue manager on which the command is executing, to ensure that the text is translated correctly.

### *BatchSize* (MQCFIN)

Batch size (parameter identifier: MQIACH\_BATCH\_SIZE).

The maximum number of messages that can be sent down a channel before a checkpoint is taken.

The batch size which is actually used is the lowest of the following:

- The *BatchSize* of the sending channel
- The *BatchSize* of the receiving channel
- The maximum number of uncommitted messages at the sending queue manager
- The maximum number of uncommitted messages at the receiving queue manager

The maximum number of uncommitted messages is specified by the *MaxUncommittedMsgs* parameter of the Change Queue Manager command.

Specify a value in the range 1-9999.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_SVRCONN or MQCHT\_CLNTCONN.

*SecurityExit* (MQCFST)

Security exit name (parameter identifier: MQCACH\_SEC\_EXIT\_NAME).

If a nonblank name is defined, the security exit is invoked at the following times:

- Immediately after establishing a channel.  
Before any messages are transferred, the exit is given the opportunity to instigate security flows to validate connection authorization.
- Upon receipt of a response to a security message flow.  
Any security message flows received from the remote processor on the remote machine are passed to the exit.

The exit is given the entire application message and message descriptor for modification.

The format of the string depends on the platform, as follows:

- On UNIX systems, it is of the form  
libraryname(functionname)
- On OS/2 and Windows, it is of the form  
dllname(functionname)  
where *dllname* is specified without the suffix “.DLL”.
- On OS/400, it is of the form  
progrname libname  
where *progrname* occupies the first 10 characters, and *libname* the second 10 characters (both blank-padded to the right if necessary).
- On Digital OpenVMS, it is of the form  
imagenamename(functionname)

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

*MsgExit* (MQCFSL)

Message exit name (parameter identifier: MQCACH\_MSG\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked immediately after a message has been retrieved from the transmission queue. The exit is given the entire application message and message descriptor for modification.

For channels with a channel type (*ChannelType*) of MQCHT\_SVRCONN or MQCHT\_CLNTCONN, this parameter is not relevant, since message exits are not invoked for such channels.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running.

MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

### *SendExit* (MQCFSL)

Send exit name (parameter identifier: MQCACH\_SEND\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked immediately before data is sent out on the network. The exit is given the complete transmission buffer before it is transmitted; the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed MQ\_TOTAL\_EXIT\_NAME\_LENGTH. An individual string must not exceed MQ\_EXIT\_NAME\_LENGTH.

### *ReceiveExit* (MQCFSL)

Receive exit name (parameter identifier: MQCACH\_RCV\_EXIT\_NAME).

If a nonblank name is defined, the exit is invoked before data received from the network is processed. The complete transmission buffer is passed to the exit and the contents of the buffer can be modified as required.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. `MQ_EXIT_NAME_LENGTH` gives the maximum length for the environment in which your application is running. `MQ_MAX_EXIT_NAME_LENGTH` gives the maximum for all supported environments.

In the following environments, a list of exit names can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- The exits are invoked in the order specified in the list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit names in the list (excluding trailing blanks in each name) must not exceed `MQ_TOTAL_EXIT_NAME_LENGTH`. An individual string must not exceed `MQ_EXIT_NAME_LENGTH`.

#### *SeqNumberWrap* (MQCFIN)

Sequence wrap number (parameter identifier: `MQIACH_SEQUENCE_NUMBER_WRAP`).

Specifies the maximum message sequence number. When the maximum is reached, sequence numbers wrap to start again at 1.

The maximum message sequence number is not negotiable; the local and remote channels must wrap at the same number.

Specify a value in the range 100 through 999 999 999.

This parameter is not valid for channels with a *ChannelType* of `MQCHT_SVRCONN` or `MQCHT_CLNTCONN`.

#### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: `MQIACH_MAX_MSG_LENGTH`).

Specifies the maximum message length that can be transmitted on the channel. This is compared with the value for the remote channel and the actual maximum is the lowest of the two values.

The value zero means the maximum message length for the queue manager.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems not listed above, and 32-bit Windows, the maximum message length is 4 MB (4 194 304 bytes).

### *SecurityUserData* (MQCFST)

Security exit user data (parameter identifier: MQCACH\_SEC\_EXIT\_USER\_DATA).

Specifies user data that is passed to the security exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

### *MsgUserData* (MQCFSL)

Message exit user data (parameter identifier: MQCACH\_MSG\_EXIT\_USER\_DATA).

Specifies user data that is passed to the message exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *MsgExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

### *SendUserData* (MQCFSL)

Send exit user data (parameter identifier: MQCACH\_SEND\_EXIT\_USER\_DATA).

Specifies user data that is passed to the send exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *SendExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

### *ReceiveUserData* (MQCFSL)

Receive exit user data (parameter identifier: MQCACH\_RCV\_EXIT\_USER\_DATA).

Specifies user data that is passed to the receive exit. The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, a list of exit user data strings can be specified by using an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

- Each exit user data string is passed to the exit at the same ordinal position in the *ReceiveExit* list.
- A list with only one name is equivalent to specifying a single name in an MQCFST structure.
- You cannot specify both a list (MQCFSL) and a single entry (MQCFST) structure for the same channel attribute.
- The total length of all of the exit user data in the list (excluding trailing blanks in each string) must not exceed MQ\_TOTAL\_EXIT\_DATA\_LENGTH. An individual string must not exceed MQ\_EXIT\_DATA\_LENGTH.

#### *ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

Specify the name of the machine as required for the stated

*TransportType*:

- For MQXPT\_LU62 on OS/2, specify the fully-qualified name of the partner LU. On OS/400, and UNIX systems, specify the name of the CPI-C communications side object. On Windows NT specify the CPI-C symbolic destination name.
- For MQXPT\_TCP specify either the host name or the network address of the remote machine.
- For MQXPT\_NETBIOS specify the NetBIOS station name.
- For MQXPT\_SPX specify the 4 byte network address, the 6 byte node address, and the 2 byte socket number. These should be entered in hexadecimal, with a period separating the network and node addresses. The socket number should be enclosed in brackets, for example:  

```
CONNNAME('0a0b0c0d.804abcde23a1(5e86)')
```

If the socket number is omitted, the MQSeries default value (5e86 hex) is assumed.
- For MQXPT\_UDP specify either the host name or the network address of the remote machine.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

#### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

## Create Channel

A transmission queue name is required (either previously defined or specified here) if *ChannelType* is MQCHT\_SENDER or MQCHT\_SERVER. It is not valid for other channel types.

### *MCAName* (MQCFST)

Message channel agent name (parameter identifier: MQCACH\_MCA\_NAME).

This is reserved, and if specified can be set only to blanks.

The maximum length of the string is MQ\_MCA\_NAME\_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *DiscInterval* (MQCFIN)

Disconnection interval (parameter identifier: MQIACH\_DISC\_INTERVAL).

This defines the maximum number of seconds that the channel waits for messages to be put on a transmission queue before terminating the channel.

Specify a value in the range 0 through 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ShortRetryCount* (MQCFIN)

Short retry count (parameter identifier: MQIACH\_SHORT\_RETRY).

The maximum number of attempts that are made by a sender or server channel to establish a connection to the remote machine, at intervals specified by *ShortRetryInterval* before the (normally longer) *LongRetryCount* and *LongRetryInterval* are used.

Retry attempts are made if the channel fails to connect initially (whether it is started automatically by the channel initiator or by an explicit command), and also if the connection fails after the channel has successfully connected. However, if the cause of the failure is such that retry is unlikely to be successful, retries are not attempted.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

### *ShortRetryInterval* (MQCFIN)

Short timer (parameter identifier: MQIACH\_SHORT\_TIMER).

Specifies the short retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 through 999 999. Values exceeding this are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*LongRetryCount* (MQCFIN)

Long retry count (parameter identifier: MQIACH\_LONG\_RETRY).

When a sender or server channel is attempting to connect to the remote machine, and the count specified by *ShortRetryCount* has been exhausted, this specifies the maximum number of further attempts that are made to connect to the remote machine, at intervals specified by *LongRetryInterval*.

If this count is also exhausted without success, an error is logged to the operator, and the channel is stopped. The channel must subsequently be restarted with a command (it is not started automatically by the channel initiator), and it then makes only one attempt to connect, as it is assumed that the problem has now been cleared by the administrator. The retry sequence is not carried out again until after the channel has successfully connected.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*LongRetryInterval* (MQCFIN)

Long timer (parameter identifier: MQIACH\_LONG\_TIMER).

Specifies the long retry wait interval for a sender or server channel that is started automatically by the channel initiator. It defines the interval in seconds between attempts to establish a connection to the remote machine, after the count specified by *ShortRetryCount* has been exhausted.

The time is approximate; zero means that another connection attempt is made as soon as possible.

Specify a value in the range 0 through 999 999. Values exceeding this are treated as 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

*DataConversion* (MQCFIN)

Whether sender should convert application data (parameter identifier: MQIACH\_DATA\_CONVERSION).

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

The value may be:

MQCDC\_NO\_SENDER\_CONVERSION

No conversion by sender.

MQCDC\_SENDER\_CONVERSION

Conversion by sender.

This value is not supported on 32-bit Windows.

*PutAuthority* (MQCFIN)

Put authority (parameter identifier: MQIACH\_PUT\_AUTHORITY).

Specifies whether the user identifier in the context information associated

## Create Channel

with a message should be used to establish authority to put the message on the destination queue.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

The value may be:

MQPA\_DEFAULT

Default user identifier is used.

MQPA\_CONTEXT

Context user identifier is used.

*MCAType* (MQCFIN)

Message channel agent type (parameter identifier: MQIACH\_MCA\_TYPE).

Specifies the type of the message channel agent program.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, or MQCHT\_CLUSSDR.

The value may be:

MQMCAT\_PROCESS

Process.

MQMCAT\_THREAD

Thread (OS/2 and Windows NT only).

*MCAUserIdentifier* (MQCFST)

Message channel agent user identifier (parameter identifier: MQCACH\_MCA\_USER\_ID).

If this is nonblank, it is the user identifier which is to be used by the message channel agent for authorization to access MQ resources, including (if *PutAuthority* is MQPA\_DEFAULT) authorization to put the message to the destination queue for receiver or requester channels.

If it is blank, the message channel agent uses its default User identifier.

This user identifier can be overridden by one supplied by a channel security exit.

This parameter is not valid for channels with a *ChannelType* of MQCHT\_CLNTCONN.

The maximum length of the MCA user identifier depends on the environment in which the MCA is running. MQ\_MCA\_USER\_ID\_LENGTH gives the maximum length for the environment for which your application is running. MQ\_MAX\_MCA\_USER\_ID\_LENGTH gives the maximum for all supported environments.

On Windows NT, you can optionally qualify a user identifier with the domain name in the following format:

user@domain

*UserIdentifier* (MQCFST)

Task user identifier (parameter identifier: MQCACH\_USER\_ID).

This is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR.

- This parameter is supported in the following environments: Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems.
- On 32-bit Windows, the parameter is accepted but ignored.

The maximum length of the string is MQ\_USER\_ID\_LENGTH. However, only the first 10 characters are used.

#### *Password* (MQCFST)

Password (parameter identifier: MQCACH\_PASSWORD).

This is used by the message channel agent when attempting to initiate a secure SNA session with a remote message channel agent.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_REQUESTER, MQCHT\_CLNTCONN, or MQCHT\_CLUSSDR.

- This parameter is supported in the following environments: Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems.
- On 32-bit Windows, the parameter is accepted but ignored.

The maximum length of the string is MQ\_PASSWORD\_LENGTH. However, only the first 10 characters are used.

#### *MsgRetryExit* (MQCFST)

Message retry exit name (parameter identifier: MQCACH\_MR\_EXIT\_NAME).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be blank.

If a nonblank name is defined, the exit is invoked prior to performing a wait before retrying a failing message.

The format of the string is the same as for *SecurityExit*.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

#### *MsgRetryUserData* (MQCFST)

Message retry exit user data (parameter identifier: MQCACH\_MR\_EXIT\_USER\_DATA).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but ignored.

Specifies user data that is passed to the message retry exit.

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryCount* (MQCFIN)

Message retry count (parameter identifier: MQIACH\_MR\_COUNT).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be zero.

Specifies the number of times that a failing message should be retried.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *MsgRetryInterval* (MQCFIN)

Message retry interval (parameter identifier: MQIACH\_MR\_INTERVAL).

- This parameter is supported in the following environments: AIX, AT&T GIS UNIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.
- On 32-bit Windows, the parameter is accepted but must be zero.

Specifies the minimum time interval in milliseconds between retries of failing messages.

Specify a value in the range 0 through 999 999 999.

This parameter is valid only for *ChannelType* values of MQCHT\_RECEIVER, MQCHT\_REQUESTER, or MQCHT\_CLUSRCVR.

### *HeartbeatInterval* (MQCFIN)

Heartbeat interval (parameter identifier: MQIACH\_HB\_INTERVAL).

The interpretation of this parameter depends on the channel type, as follows:

- For a channel type of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_RECEIVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR, this is the time in seconds between heartbeat flows passed from the sending MCA when there are no messages on the transmission queue. This gives the receiving MCA the opportunity to quiesce the channel. To be useful, *HeartbeatInterval* should be significantly less than *DiscInterval*. However, the only check is that the value is within the permitted range.

This type of heartbeat is supported in the following environments: AIX, HP-UX, OS/390, OS/2, OS/400, Sun Solaris, Windows NT.

- For a channel type of MQCHT\_CLNTCONN or MQCHT\_SVRCONN, this is the time in seconds between heartbeat flows passed from the server MCA when that MCA has issued an MQGET call with the MQGMO\_WAIT option on behalf of a client application. This allows the server MCA to handle situations where the client connection fails during an MQGET with MQGMO\_WAIT.

This type of heartbeat is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value must be in the range 0 through 999 999. A value of 0 means that no heartbeat exchange occurs. The value that is actually used is the larger of the values specified at the sending side and receiving side.

#### *NonPersistentMsgSpeed* (MQCFIN)

Speed at which non-persistent messages are to be sent (parameter identifier: MQIACH\_NPM\_SPEED).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, 32-bit Windows, Windows NT.

Specifying MQNPMS\_FAST means that non-persistent messages on a channel need not wait for a syncpoint before being made available for retrieval. The advantage of this is that non-persistent messages become available for retrieval far more quickly. The disadvantage is that because they do not wait for a syncpoint, they may be lost if there is a transmission failure.

This parameter is valid only for *ChannelType* values of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_RECEIVER, MQCHT\_REQUESTER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR. The value may be:

MQNPMS\_NORMAL

Normal speed.

MQNPMS\_FAST

Fast speed.

#### *BatchInterval* (MQCFIN)

Batch interval (parameter identifier: MQIACH\_BATCH\_INTERVAL).

This is the approximate time in milliseconds that a channel will keep a batch open, if fewer than *BatchSize* messages have been transmitted in the current batch.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

If *BatchInterval* is greater than zero, the batch is terminated by whichever of the following occurs first:

- *BatchSize* messages have been sent, or
- *BatchInterval* milliseconds have elapsed since the start of the batch.

If *BatchInterval* is zero, the batch is terminated by whichever of the following occurs first:

- *BatchSize* messages have been sent, or
- the transmission queue becomes empty.

*BatchInterval* must be in the range 0 through 999 999 999.

This parameter applies only to channels with a *ChannelType* of MQCHT\_SENDER, MQCHT\_SERVER, MQCHT\_CLUSSDR, or MQCHT\_CLUSRCVR,

#### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the channel belongs. *ClusterName* and *ClusterNameList* should not be specified together.

## Create Channel

This parameter applies only to channels with a *ChannelType* of:

MQCHT\_CLUSSDR  
MQCHT\_CLUSRCVR

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *ClusterNameList* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the channel belongs. *ClusterName* and *ClusterNameList* should not be specified together.

This parameter applies only to channels with a *ChannelType* of:

MQCHT\_CLUSSDR  
MQCHT\_CLUSRCVR

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

### *NetworkPriority* (MQCFIN)

Network priority (parameter identifier: MQIACH\_NETWORK\_PRIORITY).

The priority for the network connection. If there are multiple paths available, distributed queuing selects the path with the highest priority.

The value must be in the range 0 (lowest) through 9 (highest).

This parameter applies only to channels with a *ChannelType* of MQCHT\_CLUSRCVR

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

### *Reason* (MQLONG)

The value may be:

MQRCCF\_BATCH\_INT\_ERROR

Batch interval not valid.

MQRCCF\_BATCH\_INT\_WRONG\_TYPE

Batch interval parameter not allowed for this channel type.

MQRCCF\_BATCH\_SIZE\_ERROR

Batch size not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFSL\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFSL\_TOTAL\_LENGTH\_ERROR  
Total string length error.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_ALREADY\_EXISTS  
Channel already exists.

MQRCCF\_CHANNEL\_NAME\_ERROR  
Channel name error.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_CONN\_NAME\_ERROR  
Error in connection name parameter.

MQRCCF\_DISC\_INT\_ERROR  
Disconnection interval not valid.

MQRCCF\_DISC\_INT\_WRONG\_TYPE  
Disconnection interval not allowed for this channel type.

MQRCCF\_HB\_INTERVAL\_ERROR  
Heartbeat interval not valid.

MQRCCF\_HB\_INTERVAL\_WRONG\_TYPE  
Heartbeat interval parameter not allowed for this channel type.

MQRCCF\_LONG\_RETRY\_ERROR  
Long retry count not valid.

MQRCCF\_LONG\_RETRY\_WRONG\_TYPE  
Long retry parameter not allowed for this channel type.

MQRCCF\_LONG\_TIMER\_ERROR  
Long timer not valid.

MQRCCF\_LONG\_TIMER\_WRONG\_TYPE  
Long timer parameter not allowed for this channel type.

MQRCCF\_MAX\_MSG\_LENGTH\_ERROR  
Maximum message length not valid.

MQRCCF\_MCA\_NAME\_ERROR  
Message channel agent name error.

## Create Channel

MQRCCF\_MCA\_NAME\_WRONG\_TYPE  
Message channel agent name not allowed for this channel type.

MQRCCF\_MCA\_TYPE\_ERROR  
Message channel agent type not valid.

MQRCCF\_MISSING\_CONN\_NAME  
Connection name parameter required but missing.

MQRCCF\_MR\_COUNT\_ERROR  
Message retry count not valid.

MQRCCF\_MR\_COUNT\_WRONG\_TYPE  
Message-retry count parameter not allowed for this channel type.

MQRCCF\_MR\_EXIT\_NAME\_ERROR  
Channel message-retry exit name error.

MQRCCF\_MR\_EXIT\_NAME\_WRONG\_TYPE  
Message-retry exit parameter not allowed for this channel type.

MQRCCF\_MR\_INTERVAL\_ERROR  
Message retry interval not valid.

MQRCCF\_MR\_INTERVAL\_WRONG\_TYPE  
Message-retry interval parameter not allowed for this channel type.

MQRCCF\_MSG\_EXIT\_NAME\_ERROR  
Channel message exit name error.

MQRCCF\_NET\_PRIORITY\_ERROR  
Network priority value error.

MQRCCF\_NET\_PRIORITY\_WRONG\_TYPE  
Network priority attribute not allowed for this channel type.

MQRCCF\_NPM\_SPEED\_ERROR  
Nonpersistent message speed not valid.

MQRCCF\_NPM\_SPEED\_WRONG\_TYPE  
Nonpersistent message speed parameter not allowed for this channel type.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_PUT\_AUTH\_ERROR  
Put authority value not valid.

MQRCCF\_PUT\_AUTH\_WRONG\_TYPE  
Put authority parameter not allowed for this channel type.

MQRCCF\_RCV\_EXIT\_NAME\_ERROR  
Channel receive exit name error.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_SEC\_EXIT\_NAME\_ERROR  
Channel security exit name error.

MQRCCF\_SEND\_EXIT\_NAME\_ERROR  
Channel send exit name error.

MQRCCF\_SEQ\_NUMBER\_WRAP\_ERROR  
Sequence wrap number not valid.

MQRCCF\_SHORT\_RETRY\_ERROR  
Short retry count not valid.

MQRCCF\_SHORT\_RETRY\_WRONG\_TYPE  
Short retry parameter not allowed for this channel type.

MQRCCF\_SHORT\_TIMER\_ERROR  
Short timer value not valid.

MQRCCF\_SHORT\_TIMER\_WRONG\_TYPE  
Short timer parameter not allowed for this channel type.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

MQRCCF\_XMIT\_PROTOCOL\_TYPE\_ERR  
Transmission protocol type not valid.

MQRCCF\_XMIT\_Q\_NAME\_ERROR  
Transmission queue name error.

MQRCCF\_XMIT\_Q\_NAME\_WRONG\_TYPE  
Transmission queue name not allowed for this channel type.

---

### Create Namelist

The Create Namelist (MQCMD\_CREATE\_NAMELIST) command creates a new MQSeries namelist definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*NamelistName*

**Optional parameters:**

*Names, Replace, NamelistDesc*

### Required parameters

*NamelistName* (MQCFST)

The name of the new namelist definition to be created (parameter identifier: MQCA\_NAMELIST\_NAME).

If a namelist definition with this name already exists, *Replace* must be specified as MQRP\_YES.

The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

### Optional parameters

*Names* (MQCFSL)

The names to be placed in the namelist (parameter identifier: MQCA\_NAMES).

The number of names in the list is given by the *Count* field in the MQCFSL structure. The length of each name is given by the *StringLength* field in that structure. The maximum length of a name is MQ\_OBJECT\_NAME\_LENGTH.

*Replace* (MQCFIN)

Replace namelist definition (parameter identifier: MQIACF\_REPLACE).

If a namelist definition with the same name as *NamelistName* already exists, this specifies whether it is to be replaced. The value may be:

MQRP\_YES

Replace existing definition.

MQRP\_NO

Do not replace existing definition.

*NamelistDesc* (MQCFST)

Description of namelist definition (parameter identifier: MQCA\_NAMELIST\_DESC).

This is a plain-text comment that provides descriptive information about the namelist definition. It should contain only displayable characters.

If characters that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing are used, they may be translated incorrectly.

The maximum length of the string is MQ\_NAMELIST\_DESC\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
Attribute value not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFSL\_COUNT\_ERROR  
Name count not valid.

MQRCCF\_CFSL\_STRING\_LENGTH\_ERROR  
String length value not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_OBJECT\_ALREADY\_EXISTS  
Object already exists.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Create Process

The Create Process (MQCMD\_CREATE\_PROCESS) command creates a new MQSeries process definition. Any attributes that are not defined explicitly are set to the default values on the destination queue manager.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:**

*ProcessName*

**Optional parameters:**

*Replace, ProcessDesc, ApplType, ApplId, EnvData, UserData*

### Required parameters

*ProcessName* (MQCFST)

The new process definition to be created (parameter identifier: MQCA\_PROCESS\_NAME).

If a process definition with this name already exists, *Replace* must be specified as MGRP\_YES.

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

### Optional parameters

*Replace* (MQCFIN)

Replace process definition (parameter identifier: MQIACF\_REPLACE).

If a process definition with the same name as *ProcessName* already exists, this specifies whether it is to be replaced.

The value may be:

MGRP\_YES

Replace existing definition.

MGRP\_NO

Do not replace existing definition.

*ProcessDesc* (MQCFST)

Description of process definition (parameter identifier: MQCA\_PROCESS\_DESC).

A plain-text comment that provides descriptive information about the process definition. It should contain only displayable characters.

If characters that are not in the coded character set identifier (CCSID) for the queue manager on which the command is executing are used, they may be translated incorrectly.

The maximum length of the string is MQ\_PROCESS\_DESC\_LENGTH.

*ApplType* (MQCFIN)

Application type (parameter identifier: MQIA\_APPL\_TYPE).

Valid application types are:

MQAT\_OS400

OS/400 application.

MQAT\_OS2  
OS/2 or Presentation Manager application.

MQAT\_WINDOWS\_NT  
Windows NT or 32-bit Windows application.

MQAT\_DOS  
DOS client application.

MQAT\_WINDOWS  
Windows client or 16-bit Windows application.

MQAT\_UNIX  
UNIX application.

MQAT\_AIX  
AIX application (same value as MQAT\_UNIX).

MQAT\_CICS  
CICS transaction.

MQAT\_VMS  
Digital OpenVMS application.

MQAT\_NSK  
Tandem NonStop Kernel application.

MQAT\_DEFAULT  
Default application type.

*user-value*: User defined application type in the range 65 536 through 999 999 999 (not checked).

Only application types (other than user-defined types) that are supported on the platform at which the command is executed should be used:

- On Digital OpenVMS:  
MQAT\_VMS (default),  
MQAT\_DOS,  
MQAT\_WINDOWS, and  
MQAT\_DEFAULT are supported.
- On OS/400:  
MQAT\_OS400 (default),  
MQAT\_CICS and  
MQAT\_DEFAULT are supported.
- On OS/2:  
MQAT\_OS2 (default),  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_AIX,  
MQAT\_CICS and  
MQAT\_DEFAULT are supported.
- On Tandem NonStop Kernel:  
MQAT\_NSK (default),  
MQAT\_DOS,  
MQAT\_WINDOWS, and  
MQAT\_DEFAULT are supported.

## Create Process

- On Windows NT:  
MQAT\_WINDOWS\_NT (default),  
MQAT\_OS2  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_CICS and  
MQAT\_DEFAULT are supported.
- On UNIX systems:  
MQAT\_UNIX (default),  
MQAT\_OS2,  
MQAT\_DOS,  
MQAT\_WINDOWS,  
MQAT\_CICS and  
MQAT\_DEFAULT are supported.

### *AppId* (MQCFST)

Application identifier (parameter identifier: MQCA\_APPL\_ID).

This is the name of the application to be started, on the platform for which the command is executing, and might typically be a program name and library name.

The maximum length of the string is MQ\_PROCESS\_APPL\_ID\_LENGTH.

### *EnvData* (MQCFST)

Environment data (parameter identifier: MQCA\_ENV\_DATA).

A character string that contains environment information pertaining to the application to be started.

The maximum length of the string is  
MQ\_PROCESS\_ENV\_DATA\_LENGTH.

### *UserData* (MQCFST)

User data (parameter identifier: MQCA\_USER\_DATA).

A character string that contains user information pertaining to the application (defined by *AppId*) that is to be started.

The maximum length of the string is  
MQ\_PROCESS\_USER\_DATA\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

### *Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
Attribute value not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_OBJECT\_ALREADY\_EXISTS  
Object already exists.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

## Create Queue

The Create Queue (MQCMD\_CREATE\_Q) command creates a queue definition with the specified attributes. All attributes that are not specified are set to the default value for the type of queue that is created.

This PCF is supported on all platforms.

**Required parameters:**

*QName, QType*

**Optional parameters (any QType):**

*Replace, QDesc, InhibitPut, DefPriority, DefPersistence*

**Optional parameters (alias QType):**

*InhibitGet, BaseQName, Scope, ClusterName, ClusterNamelist, DefBind*

**Optional parameters (local QType):**

*InhibitGet, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DistLists, Usage, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, Scope, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent ClusterName, ClusterNamelist, DefBind*

**Optional parameters (remote QType):**

*RemoteQName, RemoteQMgrName, XmitQName, Scope, ClusterName, ClusterNamelist, DefBind*

**Optional parameters (model QType):**

*InhibitGet, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DistLists, Usage, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, DefinitionType, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent*

## Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The name of the queue to be created. The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

Queue name must be unique; if a queue definition already exists with the name and type of the new queue, *Replace* must be specified as MQRP\_YES. If a queue definition exists with the same name as and a different type from the new queue, the command will fail.

*QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

The value may be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_LOCAL  
Local queue.

MQQT\_REMOTE  
Local definition of a remote queue.

The following is supported on all platforms, but on OS/400 for receipt by MQSeries for AS/400 V4R2, or later.:

MQQT\_MODEL  
Model queue definition.

## Optional parameters

*Replace* (MQCFIN)

Replace attributes (parameter identifier: MQIACF\_REPLACE).

If the object already exists, the effect is similar to issuing the Change Queue command without the MQFC\_YES option on the *Force* parameter, and with *all* of the other attributes specified. In particular, note that any messages which are on the existing queue are retained.

(The difference between the Change Queue command without MQFC\_YES on the *Force* parameter, and the Create Queue command with MGRP\_YES on the *Replace* parameter, is that the Change Queue command does not change unspecified attributes, but Create Queue with MGRP\_YES sets *all* the attributes. When you use MGRP\_YES, unspecified attributes are taken from the default definition, and the attributes of the object being replaced, if one exists, are ignored.)

The command fails if both of the following are true:

- The command sets attributes that would require the use of MQFC\_YES on the *Force* parameter if you were using the Change Queue command
- The object is open

The Change Queue command with MQFC\_YES on the *Force* parameter succeeds in this situation.

If MQSCO\_CELL is specified on the *Scope* parameter on OS/2 or UNIX systems, and there is already a queue with the same name in the cell directory, the command fails, whether or not MGRP\_YES is specified.

The value may be:

MGRP\_YES  
Replace existing definition.

MGRP\_NO  
Do not replace existing definition.

*QDesc* (MQCFST)

Queue description (parameter identifier: MQCA\_Q\_DESC).

Text that briefly describes the object. The maximum length of the string is MQ\_Q\_DESC\_LENGTH.

## Create Queue

Use characters from the character set identified by the coded character set identifier (CCSID) for the queue manager on which the command is executing to ensure that the text is translated correctly.

### *InhibitPut* (MQCFIN)

Whether put operations are allowed (parameter identifier: MQIA\_INHIBIT\_PUT).

Specifies whether messages can be put on the queue.

The value may be:

MQQA\_PUT\_ALLOWED  
Put operations are allowed.

MQQA\_PUT\_INHIBITED  
Put operations are inhibited.

### *DefPriority* (MQCFIN)

Default priority (parameter identifier: MQIA\_DEF\_PRIORITY).

Specifies the default priority of messages put on the queue. The value must be in the range zero through to the maximum priority value that is supported (9).

### *DefPersistence* (MQCFIN)

Default persistence (parameter identifier: MQIA\_DEF\_PERSISTENCE).

Specifies the default for message-persistence on the queue. Message persistence determines whether or not messages are preserved across restarts of the queue manager.

The value may be:

MQPER\_PERSISTENT  
Message is persistent.

MQPER\_NOT\_PERSISTENT  
Message is not persistent.

### *InhibitGet* (MQCFIN)

Whether get operations are allowed (parameter identifier: MQIA\_INHIBIT\_GET).

The value may be:

MQQA\_GET\_ALLOWED  
Get operations are allowed.

MQQA\_GET\_INHIBITED  
Get operations are inhibited.

### *BaseQName* (MQCFST)

Queue name to which the alias resolves (parameter identifier: MQCA\_BASE\_Q\_NAME).

This is the name of a queue that is defined to the local queue manager.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ProcessName* (MQCFST)

Name of process definition for the queue (parameter identifier: MQCA\_PROCESS\_NAME).

Specifies the local name of the MQSeries process that identifies the application that should be started when a trigger event occurs.

- On AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT, if the queue is a transmission queue the process name can be left as all blanks.
- On 32-bit Windows, this parameter is accepted but ignored.
- In other environments, the process name must be nonblank for a trigger event to occur (although it can be set after the queue has been created).

*MaxQDepth* (MQCFIN)

Maximum queue depth (parameter identifier: MQIA\_MAX\_Q\_DEPTH).

The maximum number of messages allowed on the queue. Note that other factors may cause the queue to be treated as full; for example, it will appear to be full if there is no storage available for a message.

Specify a value in the range 0 through 640 000.

*MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIA\_MAX\_MSG\_LENGTH).

Specifies the maximum length for messages on the queue. Because applications may use the value of this attribute to determine the size of buffer they need to retrieve messages from the queue, the value should be changed only if it is known that this will not cause an application to operate incorrectly.

You are recommended not to set a value that is greater than the queue manager's *MaxMsgLength* attribute.

The lower limit for this parameter is 0. The upper limit depends on the environment:

- On AIX, HP-UX, OS/2, Sun Solaris, and Windows NT, the maximum message length is 100 MB (104 857 600 bytes).
- On Digital OpenVMS, OS/400, Tandem NonStop Kernel, UNIX systems not listed above, and 32-bit Windows, the maximum message length is 4 MB (4 194 304 bytes).

*BackoutThreshold* (MQCFIN)

Backout threshold (parameter identifier: MQIA\_BACKOUT\_THRESHOLD).

That is, the number of times a message can be backed out before it is transferred to the backout queue specified by *BackoutRequeueName*.

If the value is subsequently reduced, any messages already on the queue that have been backed out at least as many times as the new value remain on the queue, but such messages are transferred if they are backed out again.

Specify a value in the range 0 through 999 999 999.

## Create Queue

### *BackoutRequeueName* (MQCFST)

Excessive backout requeue name (parameter identifier: MQCA\_BACKOUT\_REQ\_Q\_NAME).

Specifies the local name of the queue (not necessarily a local queue) to which a message is transferred if it is backed out more times than the value of *BackoutThreshold*.

The backout queue does not need to exist at this time but it must exist when the *BackoutThreshold* value is exceeded.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *Shareability* (MQCFIN)

Whether queue can be shared (parameter identifier: MQIA\_SHAREABILITY).

Specifies whether multiple instances of applications, can open this queue for input.

The value may be:

MQQA\_SHAREABLE  
Queue is shareable.

MQQA\_NOT\_SHAREABLE  
Queue is not shareable.

### *DefInputOpenOption* (MQCFIN)

Default input open option (parameter identifier: MQIA\_DEF\_INPUT\_OPEN\_OPTION).

Specifies the default share option for applications opening this queue for input.

The value may be:

MQOO\_INPUT\_EXCLUSIVE  
Open queue to get messages with exclusive access.

MQOO\_INPUT\_SHARED  
Open queue to get messages with shared access.

### *HardenGetBackout* (MQCFIN)

Whether to harden backout (parameter identifier: MQIA\_HARDEN\_GET\_BACKOUT).

Specifies whether the count of backed out messages should be saved (hardened) across restarts of the queue manager.

**Note:** MQSeries for AS/400 always hardens the count, regardless of the setting of this attribute.

The value may be:

MQQA\_BACKOUT\_HARDENED  
Backout count remembered.

MQQA\_BACKOUT\_NOT\_HARDENED  
Backout count may not be remembered.

*MsgDeliverySequence* (MQCFIN)

Whether priority is relevant (parameter identifier: MQIA\_MSG\_DELIVERY\_SEQUENCE).

The value may be:

MQMDS\_PRIORITY

Messages are returned in priority order.

MQMDS\_FIFO

Messages are returned in FIFO order (first in, first out).

*RetentionInterval* (MQCFIN)

Retention interval (parameter identifier: MQIA\_RETENTION\_INTERVAL).

The number of hours for which the queue may be needed, based on the date and time when the queue was created.

This information is available to a housekeeping application or an operator and may be used to determine when a queue is no longer required. The queue manager does not delete queues nor does it prevent queues from being deleted if their retention interval has not expired. It is the user's responsibility to take any required action.

Specify a value in the range 0 through 999 999 999.

*DistLists* (MQCFIN)

Distribution list support (parameter identifier: MQIA\_DIST\_LISTS).

Specifies whether distribution-list messages can be placed on the queue.

**Note:** This attribute is set by the sending message channel agent (MCA) which removes messages from the queue; this happens each time the sending MCA establishes a connection to a receiving MCA on a partnering queue manager. The attribute should not normally be set by administrators, although it can be set if the need arises.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQDL\_SUPPORTED

Distribution lists supported.

MQDL\_NOT\_SUPPORTED

Distribution lists not supported.

*Usage* (MQCFIN)

Usage (parameter identifier: MQIA\_USAGE).

Specifies whether the queue is for normal usage or for transmitting messages to a remote message queue manager.

The value may be:

MQUS\_NORMAL

Normal usage.

MQUS\_TRANSMISSION

Transmission queue.

### *InitiationQName* (MQCFST)

Initiation queue name (parameter identifier: MQCA\_INITIATION\_Q\_NAME).

The local queue for trigger messages relating to the new, or changed, queue. The initiation queue must be on the same queue manager.

On 32-bit Windows, this parameter is accepted but ignored.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *TriggerControl* (MQCFIN)

Trigger control (parameter identifier: MQIA\_TRIGGER\_CONTROL).

Specifies whether trigger messages are written to the initiation queue.

The value may be:

MQTC\_OFF

Trigger messages not required.

MQTC\_ON

Trigger messages required.

This value is not supported on 32-bit Windows.

### *TriggerType* (MQCFIN)

Trigger type (parameter identifier: MQIA\_TRIGGER\_TYPE).

Specifies the condition that initiates a trigger event. When the condition is true, a trigger message is sent to the initiation queue.

On 32-bit Windows, this parameter is accepted but ignored.

The value may be:

MQTT\_NONE

No trigger messages.

MQTT EVERY

Trigger message for every message.

MQTT\_FIRST

Trigger message when queue depth goes from 0 to 1.

MQTT\_DEPTH

Trigger message when depth threshold exceeded.

### *TriggerMsgPriority* (MQCFIN)

Threshold message priority for triggers (parameter identifier: MQIA\_TRIGGER\_MSG\_PRIORITY).

Specifies the minimum priority that a message must have before it can cause, or be counted for, a trigger event. The value must be in the range of priority values that are supported (0 through 9).

On 32-bit Windows, this parameter is accepted but ignored.

### *TriggerDepth* (MQCFIN)

Trigger depth (parameter identifier: MQIA\_TRIGGER\_DEPTH).

Specifies (when *TriggerType* is MQTT\_DEPTH) the number of messages that will initiate a trigger message to the initiation queue. The value must be in the range 1 through 999 999 999.

On 32-bit Windows, this parameter is accepted but ignored.

#### *TriggerData* (MQCFST)

Trigger data (parameter identifier: MQCA\_TRIGGER\_DATA).

Specifies user data that the queue manager includes in the trigger message. This data is made available to the monitoring application that processes the initiation queue and to the application that is started by the monitor.

On 32-bit Windows, this parameter is accepted but ignored.

The maximum length of the string is MQ\_TRIGGER\_DATA\_LENGTH.

#### *RemoteQName* (MQCFST)

Name of remote queue as known locally on the remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_NAME).

If this definition is used for a local definition of a remote queue, *RemoteQName* must not be blank when the open occurs.

If this definition is used for a queue-manager alias definition, *RemoteQName* must be blank when the open occurs.

If this definition is used for a reply-to alias, this name is the name of the queue that is to be the reply-to queue.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

#### *RemoteQMgrName* (MQCFST)

Name of remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_MGR\_NAME).

If an application opens the local definition of a remote queue, *RemoteQMgrName* must not be blank or the name of the connected queue manager. If *XmitQName* is blank there must be a local queue of this name, which is to be used as the transmission queue.

If this definition is used for a queue-manager alias, *RemoteQMgrName* is the name of the queue manager, which can be the name of the connected queue manager. Otherwise, if *XmitQName* is blank, when the queue is opened there must be a local queue of this name, which is to be used as the transmission queue.

If this definition is used for a reply-to alias, this name is the name of the queue manager that is to be the reply-to queue manager.

This parameter can itself be the name of a cluster queue manager within the cluster, therefore, the advertised queue-manager name can be mapped to another name locally.

It is possible for the *RemoteQname* and the *RemoteQMgrName* to have the same name, even if *RemoteQMgrName* is itself a cluster Queue Manager.

If this definition is also advertised using a *ClusterName* attribute, you should take care not to choose the local queue manager in the cluster workload exit. If you do, you will create a cyclic definition.

If *RemoteQMgrName* resolves to this queue manager, the queue manager uses the queue name to resolve itself again.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

## Create Queue

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

Specifies the local name of the transmission queue to be used for messages destined for the remote queue, for either a remote queue or for a queue-manager alias definition.

If *XmitQName* is blank, a queue with the same name as *RemoteQMgrName* is used as the transmission queue.

This attribute is ignored if the definition is being used as a queue-manager alias and *RemoteQMgrName* is the name of the connected queue manager.

It is also ignored if the definition is used as a reply-to queue alias definition.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *DefinitionType* (MQCFIN)

Queue definition type (parameter identifier: MQIA\_DEFINITION\_TYPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQQDT\_PERMANENT\_DYNAMIC  
Dynamically defined permanent queue.

MQQDT\_TEMPORARY\_DYNAMIC  
Dynamically defined temporary queue.

### *Scope* (MQCFIN)

Scope of the queue definition (parameter identifier: MQIA\_SCOPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

Specifies whether the scope of the queue definition does not extend beyond the queue manager which owns the queue, or whether the queue name is contained in a cell directory, so that it is known to all of the queue managers within the cell.

Model and dynamic queues cannot have cell scope.

The command fails if the new queue has a *Scope* attribute of MQSCO\_CELL, but no name service supporting a cell directory has been configured.

The value may be:

MQSCO\_Q\_MGR  
Queue-manager scope.

MQSCO\_CELL  
Cell scope.

This value is not supported on OS/400 and 32-bit Windows.

### *QDepthHighLimit* (MQCFIN)

High limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth High event.

This event indicates that an application has put a message to a queue, and this has caused the number of messages on the queue to become greater than or equal to the queue depth high threshold. See the *QDepthHighEvent* parameter.

The value is expressed as a percentage of the maximum queue depth (*MaxQDepth* attribute), and must be greater than or equal to zero and less than or equal to 100.

#### *QDepthLowLimit* (MQCFIN)

Low limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth Low event.

This event indicates that an application has retrieved a message from a queue, and this has caused the number of messages on the queue to become less than or equal to the queue depth low threshold. See the *QDepthLowEvent* parameter.

The value is expressed as a percentage of the maximum queue depth (*MaxQDepth* attribute), and must be greater than or equal to zero and less than or equal to 100.

#### *QDepthMaxEvent* (MQCFIN)

Controls whether Queue Full events are generated (parameter identifier: MQIA\_Q\_DEPTH\_MAX\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Full event indicates that an **MQPUT** call to a queue has been rejected because the queue is full, that is, the queue depth has already reached its maximum value.

**Note:** The value of this attribute can change implicitly. See Chapter 3, "Understanding performance events" on page 17.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

#### *QDepthHighEvent* (MQCFIN)

Controls whether Queue Depth High events are generated (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Depth High event indicates that an application has put a message on a queue, and this has caused the number of messages on the queue to become greater than or equal to the queue depth high threshold (see the *QDepthHighLimit* parameter).

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

**MQEVR\_DISABLED**  
Event reporting disabled.

**MQEVR\_ENABLED**  
Event reporting enabled.

### *QDepthLowEvent* (MQCFIN)

Controls whether Queue Depth Low events are generated (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Depth Low event indicates that an application has retrieved a message from a queue, and this has caused the number of messages on the queue to become less than or equal to the queue depth low threshold (see the *QDepthLowLimit* parameter).

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

**MQEVR\_DISABLED**  
Event reporting disabled.

**MQEVR\_ENABLED**  
Event reporting enabled.

### *QServiceInterval* (MQCFIN)

Target for queue service interval (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The service interval used for comparison to generate Queue Service Interval High and Queue Service Interval OK events. See the *QServiceIntervalEvent* parameter.

The value is in units of milliseconds, and must be greater than or equal to zero, and less than or equal to 999 999 999.

### *QServiceIntervalEvent* (MQCFIN)

Controls whether Queue Service Interval High or Queue Service Interval OK events are generated (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

A Queue Service Interval High event is generated when a check indicates that no messages have been retrieved from the queue for at least the time indicated by the *QServiceInterval* attribute.

A Queue Service Interval OK event is generated when a check indicates that messages have been retrieved from the queue within the time indicated by the *QServiceInterval* attribute.

**Note:** The value of this attribute can change implicitly. See Chapter 3, “Understanding performance events” on page 17.

The value may be:

**MQQSIE\_HIGH**

Queue Service Interval High events enabled.

- Queue Service Interval High events are **enabled** and
- Queue Service Interval OK events are **disabled**.

**MQQSIE\_OK**

Queue Service Interval OK events enabled.

- Queue Service Interval High events are **disabled** and
- Queue Service Interval OK events are **enabled**.

**MQQSIE\_NONE**

No queue service interval events enabled.

- Queue Service Interval High events are **disabled** and
- Queue Service Interval OK events are also **disabled**.

*DefBind* (MQCFIN)

Bind definition (parameter identifier: MQIA\_DEF\_BIND).

The parameter specifies the binding to be used when MQOO\_BIND\_AS\_Q\_DEF is specified on the MQOPEN call. The value may be:

**MQBND\_BIND\_ON\_OPEN**

The binding is fixed by the MQOPEN call.

**MQBND\_BIND\_NOT\_FIXED**

The binding is not fixed.

Changes to this parameter do not affect instances of the queue that are open.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

*ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the queue belongs.

Changes to this parameter do not affect instances of the queue that are open.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

*ClusterName* and *ClusterNameList* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

*ClusterNameList* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the queue belongs.

## Create Queue

Changes to this parameter do not affect instances of the queue that are open.

*ClusterName* and *ClusterNameList* should not be specified together.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_ATTR\_VALUE\_ERROR  
Attribute value not valid.

MQRCCF\_CELL\_DIR\_NOT\_AVAILABLE  
Cell directory is not available.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CLUSTER\_NAME\_CONFLICT  
Cluster name conflict.

MQRCCF\_CLUSTER\_Q\_USAGE\_ERROR  
Cluster usage conflict.

MQRCCF\_DYNAMIC\_Q\_SCOPE\_ERROR  
Dynamic queue scope error.

MQRCCF\_LIKE\_OBJECT\_WRONG\_TYPE  
New and existing objects have different type.

MQRCCF\_OBJECT\_ALREADY\_EXISTS  
Object already exists.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_OBJECT\_OPEN  
Object is open.

MQRCCF\_OBJECT\_WRONG\_TYPE  
Object has wrong type.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR  
Parameter sequence not valid.

MQRCCF\_Q\_ALREADY\_IN\_CELL  
Queue already exists in cell.

MQRCCF\_Q\_TYPE\_ERROR  
Queue type not valid.

MQRCCF\_REPLACE\_VALUE\_ERROR  
Replace value not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Delete Channel

The Delete Channel (MQCMD\_DELETE\_CHANNEL) command deletes the specified channel definition.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*

**Optional parameters:**

*ChannelTable*

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the channel definition to be deleted. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### Optional parameters

*ChannelTable* (MQCFIN)

Channel table (parameter identifier: MQIACH\_CHANNEL\_TABLE).

Specifies the ownership of the channel definition table that contains the specified channel definition.

The value may be:

MQCHTAB\_Q\_MGR

Queue-manager table.

This is the default. This table contains channel definitions for channels of all types except MQCHT\_CLNTCONN.

MQCHTAB\_CLNTCONN

Client-connection table.

This table only contains channel definitions for channels of type MQCHT\_CLNTCONN.

On OS/400 and 32-bit Windows, this value is not supported.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TABLE\_ERROR  
Channel table value not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Delete Namelist

The Delete Namelist (MQCMD\_DELETE\_NAMELIST) command deletes an existing MQSeries namelist definition.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*NamelistName*

**Optional parameters:**

None

### Required parameters

*NamelistName* (MQCFST)

Namelist name (parameter identifier: MQCA\_NAMELIST\_NAME).

This is the name of the namelist definition to be deleted. The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_OBJECT\_OPEN  
Object is open.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Delete Process

The Delete Process (MQCMD\_DELETE\_PROCESS) command deletes an existing MQSeries process definition.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:**

*ProcessName*

**Optional parameters:**

None

## Required parameters

*ProcessName* (MQCFST)

Process name (parameter identifier: MQCA\_PROCESS\_NAME).

The process definition to be deleted. The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_OBJECT\_OPEN  
Object is open.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Delete Queue

The Delete Queue (MQCMD\_DELETE\_Q) command deletes an MQSeries queue.

This PCF is supported on all platforms.

**Required parameters:**

*QName*

**Optional parameters (any QType):**

*QType*

**Optional parameters (local QType only):**

*Purge*

### Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The name of the queue to be deleted.

If the *Scope* attribute of the queue is MQSCO\_CELL, the entry for the queue is deleted from the cell directory.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### Optional parameters

*QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

If this parameter is present, the queue must be of the specified type.

The value may be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_LOCAL

Local queue.

MQQT\_REMOTE

Local definition of a remote queue.

The following is supported on all platforms, but on OS/400 for receipt by MQSeries for AS/400 V4R2, or later.:

MQQT\_MODEL

Model queue definition.

*Purge* (MQCFIN)

Purge queue (parameter identifier: MQIACF\_PURGE).

If there are messages on the queue MQPO\_YES must be specified, otherwise the command will fail. If this parameter is not present the queue is not purged.

Valid only for queue of type local.

The value may be:

MQPO\_YES

Purge the queue.

MQPO\_NO

Do not purge the queue.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_Q\_NOT\_EMPTY

(2055, X'807') Queue contains one or more messages or uncommitted put or get requests.

MQRC\_UNKNOWN\_OBJECT\_NAME

(2085, X'825') Unknown object name.

MRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

MRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MRCCF\_OBJECT\_OPEN

Object is open.

MRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MRCCF\_PURGE\_VALUE\_ERROR

Purge value not valid.

MRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

---

## Escape

The Escape (MQCMD\_ESCAPE) command conveys any MQSeries command (MQSC) to a remote queue manager. Use it when the queue manager (or application) sending the command does not support the functionality of the particular MQSeries command, and so does not recognize it and cannot construct the required PCF command.

The Escape command can also be used to send a command for which no Programmable Command Format has been defined.

The only type of command that can be carried is one that is identified as an MQSC, that is recognized at the receiving queue manager.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:**

*EscapeType, EscapeText*

**Optional parameters:**

None

## Required parameters

*EscapeType* (MQCFIN)

Escape type (parameter identifier: MQIACF\_ESCAPE\_TYPE).

The only value supported is:

MQET\_MQSC

MQSeries command.

*EscapeText* (MQCFST)

Escape text (parameter identifier: MQCACF\_ESCAPE\_TEXT).

A string to hold a command. The length of the string is limited only by the size of the message.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_ESCAPE\_TYPE\_ERROR

Escape type not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MQRCCF\_PARM\_SEQUENCE\_ERROR

Parameter sequence not valid.

---

## Escape (Response)

The response to the Escape (MQCMD\_ESCAPE) command consists of the response header followed by two parameter structures, one containing the escape type, and the other containing the text response. More than one such message may be issued, depending upon the command contained in the Escape request.

The *Command* field in the response header MQCFH contains the MQCMD\_\* command identifier of the text command contained in the *EscapeText* parameter in the original Escape command. For example, if *EscapeText* in the original Escape command specified PING QMGR, *Command* in the response has the value MQCMD\_PING\_Q\_MGR.

If it is possible to determine the outcome of the command, the *CompCode* in the response header identifies whether the command was successful. The success or otherwise can therefore be determined without the recipient of the response having to parse the text of the response.

If it is not possible to determine the outcome of the command, *CompCode* in the response header has the value MQCC\_UNKNOWN, and *Reason* is MQRC\_NONE.

This response is not supported on 32-bit Windows.

**Always returned:**

*EscapeType*, *EscapeText*

**Returned if requested:**

None

## Parameters

*EscapeType* (MQCFIN)

Escape type (parameter identifier: MQIACF\_ESCAPE\_TYPE).

The only value supported is:

MQET\_MQSC

MQSeries command.

*EscapeText* (MQCFST)

Escape text (parameter identifier: MQCACF\_ESCAPE\_TEXT).

A string holding the response to the original command.

---

### Inquire Channel

The Inquire Channel (MQCMD\_INQUIRE\_CHANNEL) command inquires about the attributes of MQSeries channel definitions.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*

**Optional parameters:**

*ChannelType, ChannelAttrs*

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all channels having names that start with the selected character string. An asterisk on its own matches all possible names.

The channel name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### Optional parameters

*ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

If this parameter is present, eligible channels are limited to those of the specified type. Any attribute selector specified in the *ChannelAttrs* list which is only valid for channels of a different type or types is ignored; no error is raised.

If this parameter is not present (or if MQCHT\_ALL is specified), channels of all types except MQCHT\_CLNTCONN are eligible. Each attribute specified must be a valid channel attribute selector (that is, it must be one of those in the following list), but it may not be applicable to all (or any) of the channels actually returned. Channel attribute selectors that are valid but not applicable to the channel are ignored, no error messages occur, and no attribute is returned.

The value may be:

MQCHT\_SENDER  
Sender.

MQCHT\_SERVER  
Server.

MQCHT\_RECEIVER  
Receiver.

MQCHT\_REQUESTER  
Requester.

## MQCHT\_SVRCONN

Server-connection (for use by clients).

This value is not supported in the following environment: 32-bit Windows.

## MQCHT\_CLNTCONN

Client connection.

This value is not supported in the following environments: OS/400, 32-bit Windows.

## MQCHT\_CLUSRCVR

Cluster-receiver.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## MQCHT\_CLUSSDR

Cluster-sender.

This value is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

## MQCHT\_ALL

All types.

The default value if this parameter is not specified is MQCHT\_ALL.

**Note:** If this parameter is present, it must occur immediately after the *ChannelName* parameter. Failure to do this can result in a MQRCCF\_MSG\_LENGTH\_ERROR error message.

*ChannelAttrs* (MQCFIL)

Channel attributes (parameter identifier: MQIACF\_CHANNEL\_ATTRS).

The attribute list may specify the following on its own (this is the default value used if the parameter is not specified):

## MQIACF\_ALL

All attributes.

or a combination of the following:

***Relevant for any channel type:***

## MQCACH\_CHANNEL\_NAME

Channel name.

## MQIACH\_CHANNEL\_TYPE

Channel type.

## MQIACH\_XMIT\_PROTOCOL\_TYPE

Transport (transmission protocol) type.

## MQCACH\_DESC

Description.

## MQCACH\_SEC\_EXIT\_NAME

Security exit name.

## MQCACH\_MSG\_EXIT\_NAME

Message exit name.

MQCACH\_SEND\_EXIT\_NAME  
Send exit name.

MQCACH\_RCV\_EXIT\_NAME  
Receive exit name.

MQIACH\_MAX\_MSG\_LENGTH  
Maximum message length.

MQCACH\_SEC\_EXIT\_USER\_DATA  
Security exit user data.

MQCACH\_MSG\_EXIT\_USER\_DATA  
Message exit user data.

MQCACH\_SEND\_EXIT\_USER\_DATA  
Send exit user data.

MQCACH\_RCV\_EXIT\_USER\_DATA  
Receive exit user data.

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCA\_ALTERATION\_DATE  
Date on which the definition was last altered.

MQCA\_ALTERATION\_TIME  
Time at which the definition was last altered.

***Relevant for sender or server channel types:***

MQCACH\_XMIT\_Q\_NAME  
Transmission queue name.

MQCACH\_MCA\_NAME  
Message channel agent name.

MQCACH\_MODE\_NAME  
Mode name.

MQCACH\_TP\_NAME  
Transaction program name.

MQIACH\_BATCH\_SIZE  
Batch size.

MQIACH\_DISC\_INTERVAL  
Disconnection interval.

MQIACH\_SHORT\_RETRY  
Short retry count.

MQIACH\_SHORT\_TIMER  
Short timer.

MQIACH\_LONG\_RETRY  
Long retry count.

MQIACH\_LONG\_TIMER  
Long timer.

MQIACH\_SEQUENCE\_NUMBER\_WRAP  
Sequence number wrap.

MQIACH\_DATA\_CONVERSION

Whether sender should convert application data.

MQIACH\_MCA\_TYPE

MCA type.

MQCACH\_MCA\_USER\_ID

MCA user identifier.

The following is supported on Digital OpenVMS, OS/2, OS/400, Tandem NonStop Kernel, UNIX systems, 32-bit Windows, and Windows NT:

MQCACH\_CONNECTION\_NAME

Connection name.

The following are supported on Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems, and Windows NT:

MQCACH\_USER\_ID

User identifier.

MQCACH\_PASSWORD

Password.

The following are supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, and Windows NT:

MQIACH\_BATCH\_INTERVAL

Batch wait interval (seconds).

MQIACH\_HB\_INTERVAL

Heartbeat interval (seconds).

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, 32-bit Windows, and Windows NT:

MQIACH\_NPM\_SPEED

Speed of nonpersistent messages.

***Relevant for requester channel type:***

MQCACH\_MCA\_NAME

Message channel agent name.

MQCACH\_MODE\_NAME

Mode name.

MQCACH\_TP\_NAME

Transaction program name.

MQIACH\_BATCH\_SIZE

Batch size.

MQIACH\_SEQUENCE\_NUMBER\_WRAP

Sequence number wrap.

MQIACH\_PUT\_AUTHORITY

Put authority.

MQCACH\_MR\_EXIT\_NAME

Message-retry exit name.

MQCACH\_MR\_EXIT\_USER\_DATA

Message-retry exit user data.

MQIACH\_MR\_COUNT

Message retry count.

MQIACH\_MR\_INTERVAL

Message retry interval (milliseconds).

MQIACH\_MCA\_TYPE

MCA type.

MQCACH\_MCA\_USER\_ID

MCA user identifier.

The following is supported on Digital OpenVMS, OS/2, OS/400, Tandem NonStop Kernel, UNIX systems, 32-bit Windows, and Windows NT:

MQCACH\_CONNECTION\_NAME

Connection name.

The following are supported on Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems, and Windows NT:

MQCACH\_USER\_ID

User identifier.

MQCACH\_PASSWORD

Password.

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, and Windows NT:

MQIACH\_HB\_INTERVAL

Heartbeat interval (seconds).

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, 32-bit Windows, and Windows NT:

MQIACH\_NPM\_SPEED

Speed of nonpersistent messages.

***Relevant for receiver channel type:***

MQIACH\_BATCH\_SIZE

Batch size.

MQIACH\_SEQUENCE\_NUMBER\_WRAP

Sequence number wrap.

MQIACH\_PUT\_AUTHORITY

Put authority.

MQCACH\_MR\_EXIT\_NAME

Message-retry exit name.

MQCACH\_MR\_EXIT\_USER\_DATA

Message-retry exit user data.

MQIACH\_MR\_COUNT

Message retry count.

MQIACH\_MR\_INTERVAL  
Message retry interval (milliseconds).

MQCACH\_MCA\_USER\_ID  
MCA user identifier.

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, and Windows NT:

MQIACH\_HB\_INTERVAL  
Heartbeat interval (seconds).

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, 32-bit Windows, and Windows NT:

MQIACH\_NPM\_SPEED  
Speed of nonpersistent messages.

***Relevant for server-connection channel type***

The following is supported on Digital OpenVMS, OS/2, OS/400, Tandem NonStop Kernel, UNIX systems, and Windows NT:

MQCACH\_MCA\_USER\_ID  
MCA user identifier.

***Relevant for client-connection channel type***

The following are supported on Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems, and Windows NT:

MQCACH\_MODE\_NAME  
Mode name.

MQCACH\_TP\_NAME  
Transaction program name.

MQCA\_Q\_MGR\_NAME  
Name of local queue manager.

MQCACH\_CONNECTION\_NAME  
Connection name.

The following are supported on Digital OpenVMS, OS/2 Tandem NonStop Kernel, and UNIX systems:

MQCACH\_USER\_ID  
User identifier.

MQCACH\_PASSWORD  
Password.

***Relevant for cluster-receiver channel type***

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCACH\_MODE\_NAME  
Mode name.

MQCACH\_TP\_NAME  
Transaction program name.

## Inquire Channel

	MQCACH_CONNECTION_NAME
	Connection name.
	MQIACH_DISC_INTERVAL
	Disconnection interval.
	MQIACH_SHORT_RETRY
	Short retry count.
	MQIACH_SHORT_TIMER
	Short timer.
	MQIACH_LONG_RETRY
	Long retry count.
	MQIACH_LONG_TIMER
	Long timer.
	MQIACH_DATA_CONVERSION
	Whether sender should convert application data.
	MQIACH_BATCH_SIZE
	Batch size.
	MQIACH_PUT_AUTHORITY
	Put authority.
	MQIACH_SEQUENCE_NUMBER_WRAP
	Sequence number wrap.
	MQCACH_MCA_USER_ID
	MCA user identifier.
	MQCACH_MR_EXIT_NAME
	Message-retry exit name.
	MQCACH_MR_EXIT_USER_DATA
	Message-retry exit user data.
	MQIACH_MR_COUNT
	Message retry count.
	MQIACH_MR_INTERVAL
	Message retry interval (milliseconds).
	MQIACH_HB_INTERVAL
	Heartbeat interval (seconds).
	MQIACH_NPM_SPEED
	Speed of nonpersistent messages.
	MQIACH_BATCH_INTERVAL
	Batch wait interval (seconds).
	MQCA_CLUSTER_NAME
	Cluster name.
	MQCA_CLUSTER_NAMELIST
	Cluster namelist.
	MQIACH_NETWORK_PRIORITY
	Network priority.
	<b><i>Relevant for cluster-sender channel type</i></b>

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCACH\_MODE\_NAME

Mode name.

MQCACH\_TP\_NAME

Transaction program name.

MQCACH\_CONNECTION\_NAME

Connection name.

MQIACH\_DISC\_INTERVAL

Disconnection interval.

MQIACH\_SHORT\_RETRY

Short retry count.

MQIACH\_SHORT\_TIMER

Short timer.

MQIACH\_LONG\_RETRY

Long retry count.

MQIACH\_LONG\_TIMER

Long timer.

MQIACH\_DATA\_CONVERSION

Whether sender should convert application data.

MQIACH\_BATCH\_SIZE

Batch size.

MQIACH\_SEQUENCE\_NUMBER\_WRAP

Sequence number wrap.

MQIACH\_MCA\_TYPE

MCA type.

MQCACH\_MCA\_NAME

Message channel agent name.

MQCACH\_MCA\_USER\_ID

MCA user identifier.

MQCACH\_USER\_ID

User identifier.

MQCACH\_PASSWORD

Password.

MQIACH\_HB\_INTERVAL

Heartbeat interval (seconds).

MQIACH\_NPM\_SPEED

Speed of nonpersistent messages.

MQIACH\_BATCH\_INTERVAL

Batch wait interval (seconds).

MQCA\_CLUSTER\_NAME

Cluster name.

MQCA\_CLUSTER\_NAMELIST

Cluster namelist.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR  
(2067, X'813') Attribute selector not valid.

MQRCCF\_CFIL\_COUNT\_ERROR  
Count of parameter values not valid.

MQRCCF\_CFIL\_DUPLICATE\_VALUE  
Duplicate parameter.

MQRCCF\_CFIL\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIL\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_NAME\_ERROR  
Channel name error.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Inquire Channel (Response)

The response to the Inquire Channel (MQCMD\_INQUIRE\_CHANNEL) command consists of the response header followed by the *ChannelName* structure and the requested combination of attribute parameter structures (where applicable). If a generic channel name was specified, one such message is generated for each channel found.

This response is supported on all platforms.

**Always returned:**

*ChannelName*

**Returned if requested:**

*ChannelType, TransportType, ModeName, TpName, QMgrName, XmitQName, ConnectionName, MCAName, ChannelDesc, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, DataConversion, SecurityExit, MsgExit, SendExit, ReceiveExit, PutAuthority, SeqNumberWrap, MaxMsgLength, SecurityUserData, MsgUserData, SendUserData, ReceiveUserData, MCAType, MCAUserIdentifier, UserIdentifier, Password, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, AlterationDate, AlterationTime, ClusterName, ClusterNameList, NetworkPriority*

## Response data

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

The value may be:

MQCHT\_SENDER

Sender.

MQCHT\_SERVER

Server.

MQCHT\_RECEIVER

Receiver.

MQCHT\_REQUESTER

Requester.

MQCHT\_SVRCONN

Server-connection (for use by clients).

MQCHT\_CLNTCONN

Client connection.

MQCHT\_CLUSRCVR

Cluster-receiver.

MQCHT\_CLUSSDR

Cluster-sender.

## Inquire Channel (Response)

### *TransportType* (MQCFIN)

Transmission protocol type (parameter identifier: MQIACH\_XMIT\_PROTOCOL\_TYPE).

The value may be:

MQXPT\_LU62  
LU 6.2.  
MQXPT\_TCP  
TCP.  
MQXPT\_NETBIOS  
NetBIOS.  
MQXPT\_SPX  
SPX.  
MQXPT\_DECNET  
DECnet.  
MQXPT\_UDP  
UDP.

### *ModeName* (MQCFST)

Mode name (parameter identifier: MQCACH\_MODE\_NAME).

The maximum length of the string is MQ\_MODE\_NAME\_LENGTH.

### *TpName* (MQCFST)

Transaction program name (parameter identifier: MQCACH\_TP\_NAME).

The maximum length of the string is MQ\_TP\_NAME\_LENGTH.

### *QMgrName* (MQCFST)

Queue manager name (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

### *MCAName* (MQCFST)

Message channel agent name (parameter identifier: MQCACH\_MCA\_NAME).

The maximum length of the string is MQ\_MCA\_NAME\_LENGTH.

### *ChannelDesc* (MQCFST)

Channel description (parameter identifier: MQCACH\_DESC).

The maximum length of the string is MQ\_CHANNEL\_DESC\_LENGTH.

### *BatchSize* (MQCFIN)

Batch size (parameter identifier: MQIACH\_BATCH\_SIZE).

### *DiscInterval* (MQCFIN)

Disconnection interval (parameter identifier: MQIACH\_DISC\_INTERVAL).

*ShortRetryCount* (MQCFIN)

Short retry count (parameter identifier: MQIACH\_SHORT\_RETRY).

*ShortRetryInterval* (MQCFIN)

Short timer (parameter identifier: MQIACH\_SHORT\_TIMER).

*LongRetryCount* (MQCFIN)

Long retry count (parameter identifier: MQIACH\_LONG\_RETRY).

*LongRetryInterval* (MQCFIN)

Long timer (parameter identifier: MQIACH\_LONG\_TIMER).

*DataConversion* (MQCFIN)

Whether sender should convert application data (parameter identifier: MQIACH\_DATA\_CONVERSION).

The value may be:

MQCDC\_NO\_SENDER\_CONVERSION

No conversion by sender.

MQCDC\_SENDER\_CONVERSION

Conversion by sender.

*SecurityExit* (MQCFST)

Security exit name (parameter identifier: MQCACH\_SEC\_EXIT\_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

*MsgExit* (MQCFSL)

Message exit name (parameter identifier: MQCACH\_MSG\_EXIT\_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, if more than one message exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*SendExit* (MQCFSL)

Send exit name (parameter identifier: MQCACH\_SEND\_EXIT\_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, if more than one send exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

## Inquire Channel (Response)

### *ReceiveExit* (MQCFSL)

Receive exit name (parameter identifier: MQCACH\_RCV\_EXIT\_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running.

MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

In the following environments, if more than one receive exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

### *PutAuthority* (MQCFIN)

Put authority (parameter identifier: MQIACH\_PUT\_AUTHORITY).

The value may be:

MQPA\_DEFAULT

Default user identifier is used.

MQPA\_CONTEXT

Context user identifier is used.

### *SeqNumberWrap* (MQCFIN)

Sequence wrap number (parameter identifier: MQIACH\_SEQUENCE\_NUMBER\_WRAP).

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIACH\_MAX\_MSG\_LENGTH).

### *SecurityUserData* (MQCFST)

Security exit user data (parameter identifier: MQCACH\_SEC\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

### *MsgUserData* (MQCFSL)

Message exit user data (parameter identifier: MQCACH\_MSG\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, if more than one message exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

### *SendUserData* (MQCFSL)

Send exit user data (parameter identifier: MQCACH\_SEND\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, if more than one send exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*ReceiveUserData* (MQCFSL)

Receive exit user data (parameter identifier: MQCACH\_RCV\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, if more than one receive exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*MCAType* (MQCFIN)

Message channel agent type (parameter identifier: MQIACH\_MCA\_TYPE).

The value may be:

MQMCAT\_PROCESS

Process.

MQMCAT\_THREAD

Thread (OS/2 and Windows NT only).

*MCAUserIdentifier* (MQCFST)

Message channel agent user identifier (parameter identifier: MQCACH\_MCA\_USER\_ID).

The maximum length of the MCA user identifier depends on the environment in which the MCA is running. MQ\_MCA\_USER\_ID\_LENGTH gives the maximum length for the environment for which your application is running. MQ\_MAX\_MCA\_USER\_ID\_LENGTH gives the maximum for all supported environments.

On Windows NT, the user identifier may be qualified with the domain name in the following format:

user@domain

*UserIdentifier* (MQCFST)

Task user identifier (parameter identifier: MQCACH\_USER\_ID).

The maximum length of the string is MQ\_USER\_ID\_LENGTH. However, only the first 10 characters are used.

*Password* (MQCFST)

Password (parameter identifier: MQCACH\_PASSWORD).

If a nonblank password is defined, it is returned as asterisks. Otherwise, it is returned as blanks.

The maximum length of the string is MQ\_PASSWORD\_LENGTH. However, only the first 10 characters are used.

*MsgRetryExit* (MQCFST)

Message retry exit name (parameter identifier: MQCACH\_MR\_EXIT\_NAME).

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

## Inquire Channel (Response)

### *MsgRetryUserData* (MQCFST)

Message retry exit user data (parameter identifier: MQCACH\_MR\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

### *MsgRetryCount* (MQCFIN)

Message retry count (parameter identifier: MQIACH\_MR\_COUNT).

### *MsgRetryInterval* (MQCFIN)

Message retry interval (parameter identifier: MQIACH\_MR\_INTERVAL).

### *BatchInterval* (MQCFIN)

Batch interval (parameter identifier: MQIACH\_BATCH\_INTERVAL).

### *HeartbeatInterval* (MQCFIN)

Heartbeat interval (parameter identifier: MQIACH\_HB\_INTERVAL).

### *NonPersistentMsgSpeed* (MQCFIN)

Speed at which non-persistent messages are to be sent (parameter identifier: MQIACH\_NPM\_SPEED).

The value may be:

MQNPMS\_NORMAL

Normal speed.

MQNPMS\_FAST

Fast speed.

### *AlterationDate* (MQCFST)

Alteration date (parameter identifier: MQCA\_ALTERATION\_DATE).

The date when the information was last altered.

### *AlterationTime* (MQCFST)

Alteration time (parameter identifier: MQCA\_ALTERATION\_TIME).

The time when the information was last altered.

### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

### *ClusterNamelist* (MQCFSL)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

### *NetworkPriority* (MQCFIN)

Network priority (parameter identifier: MQIACH\_NETWORK\_PRIORITY).

## Inquire Channel Names

The Inquire Channel Names (MQCMD\_INQUIRE\_CHANNEL\_NAMES) command inquires a list of MQSeries channel names that match the generic channel name, and the optional channel type specified.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*

**Optional parameters:**

*ChannelType*

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### Optional parameters

*ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

If present, this parameter limits the channel names returned to channels of the specified type.

The value may be:

MQCHT\_SENDER  
Sender.

MQCHT\_SERVER  
Server.

MQCHT\_RECEIVER  
Receiver.

MQCHT\_REQUESTER  
Requester.

MQCHT\_SVRCONN  
Server-connection (for use by clients).

This value is not supported in the following environment: 32-bit Windows.

MQCHT\_CLNTCONN  
Client connection.

This value is not supported in the following environments: OS/400, 32-bit Windows.

MQCHT\_CLUSRCVR  
Cluster-receiver.

## Inquire Channel Names

| MQCHT\_CLUSSDR  
| Cluster-sender.

MQCHT\_ALL  
All types.

The default value if this parameter is not specified is MQCHT\_ALL, which means that channels of all types except MQCHT\_CLNTCONN are eligible.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_NAME\_ERROR  
Channel name error.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

## Inquire Channel Names (Response)

The response to the Inquire Channel Names (MQCMD\_INQUIRE\_CHANNEL\_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified channel name.

This response is supported on all platforms.

**Always returned:**

*ChannelNames*

**Returned if requested:**

None

## Response data

*ChannelNames* (MQCFSL)

Channel names (parameter identifier: MQCACH\_CHANNEL\_NAMES).

---

### Inquire Channel Status

The Inquire Channel Status (MQCMD\_INQUIRE\_CHANNEL\_STATUS) command inquires about the status of one or more MQSeries channel instances.

This command cannot be used for client-connection channels.

You must specify the name of the channel for which you want to inquire status information. This can be a specific channel name or a generic channel name. By using a generic channel name, you can inquire either:

- Status information for all channels, or
- Status information for one or more channels that match the specified name.

You must also specify whether you want:

- The current status data (of current channels only), or
- The saved status data of all channels.

Status for all channels that meet the selection criteria is given, whether the channels were defined manually or automatically.

Before explaining the syntax and options for this command, it is necessary to describe the format of the status data that is available for channels and the states that channels may have.

There are two classes of data available for channel status. These are **saved** and **current**. The status fields available for saved data are a subset of the fields available for current data and are called **common** status fields. Note that although the common data *fields* are the same, the data *values* may be different for saved and current status. The rest of the fields available for current data are called **current-only** status fields.

- **Saved** data consists of the common status fields noted in the syntax diagram. This data is reset at the following times:
  - For all channels:
    - When the channel enters or leaves STOPPED or RETRY state
  - For a sending channel:
    - Before requesting confirmation that a batch of messages has been received
    - When confirmation has been received
  - For a receiving channel:
    - Just before confirming that a batch of messages has been received
  - For a server connection channel:
    - No data is saved

Therefore, a channel which has never been current will not have any saved status.

- **Current** data consists of the common status fields and current-only status fields as noted in the syntax diagram. The data fields are continually updated as messages are sent or received.

This method of operation has the following consequences:

- An inactive channel may not have any saved status – if it has never been current or has not yet reached a point where saved status is reset.

- The “common” data fields may have different values for saved and current status.
- A current channel always has current status and may have saved status.

Channels may be current or inactive:

### Current channels

These are channels that have been started, or on which a client has connected, and that have not finished or disconnected normally. They may not yet have reached the point of transferring messages, or data, or even of establishing contact with the partner. Current channels have **current** status and may also have **saved** status.

The term **Active** is used to describe the set of current channels which are not stopped.

### Inactive channels

These are channels that have either not been started or on which a client has not connected, or that have finished or disconnected normally. (Note that if a channel is stopped, it is not yet considered to have finished normally – and is, therefore, still current.) Inactive channels have either **saved** status or no status at all.

There can be more than one instance of a receiver, requester, cluster-sender, cluster-receiver, or server-connection channel current at the same time (the requester is acting as a receiver). This occurs if several senders, at different queue managers, each initiate a session with this receiver, using the same channel name. For channels of other types, there can only be one instance current at any time.

For all channel types, however, there can be more than one set of saved status information available for a given channel name. At most one of these sets relates to a current instance of the channel, the rest relate to previously current instances. Multiple instances arise if different transmission queue names or connection names have been used in connection with the same channel. This can happen in the following cases:

- At a sender or server:
  - If the same channel has been connected to by different requesters (servers only),
  - If the transmission queue name has been changed in the definition, or
  - If the connection name has been changed in the definition.
- At a receiver or requester:
  - If the same channel has been connected to by different senders or servers, or
  - If the connection name has been changed in the definition (for requester channels initiating connection).

The number of sets returned for a given channel can be limited by using the *XmitQName*, *ConnectionName* and *ChannelInstanceType* parameters.

This PCF is supported on all platforms.

**Required parameters:** *ChannelName*

## Inquire Channel Status

**Optional parameters:** *XmitQName*, *ConnectionName*, *ChannelInstanceType*,  
*ChannelInstanceAttrs*

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The channel name is always returned, regardless of the instance attributes requested.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### Optional parameters

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

If this parameter is present, eligible channel instances are limited to those using this transmission queue. If it is not specified, eligible channel instances are not limited in this way.

The transmission queue name is always returned, regardless of the instance attributes requested.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

If this parameter is present, eligible channel instances are limited to those using this connection name. If it is not specified, eligible channel instances are not limited in this way.

The connection name is always returned, regardless of the instance attributes requested.

If the *TransportType* has a value of MQXPT\_TCP, the saved channel status omits any part number from the connection name. A connection name specified when requesting saved channel status should therefore never include a part number. It should only specify the TCP address.

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

*ChannelInstanceType* (MQCFIN)

Channel instance type (parameter identifier: MQIACH\_CHANNEL\_INSTANCE\_TYPE).

It is always returned regardless of the channel instance attributes requested.

The value may be:

**MQOT\_CURRENT\_CHANNEL**

Current channel status.

This is the default, and indicates that only current status information for active channels is to be returned.

Both common status information and active-only status information can be requested for current channels.

**MQOT\_SAVED\_CHANNEL**

Saved channel status.

Specify this to cause saved status information for both active and inactive channels to be returned.

Only common status information can be returned. Active-only status information is not returned for active channels if this keyword is specified.

The default value if this parameter is not specified is

**MQOT\_CURRENT\_CHANNEL**.

*ChannelInstanceAttrs* (MQCFIL)

Channel instance attributes (parameter identifier:

**MQIACH\_CHANNEL\_INSTANCE\_ATTRS**).

If status information is requested which is not relevant for the particular channel type, this is not an error. Similarly, it is not an error to request status information that is applicable only to active channels for saved channel instances. In both of these cases, no structure is returned in the response for the information concerned.

For a saved channel instance, the **MQCACH\_CURRENT\_LUWID**, **MQIACH\_CURRENT\_MSGS**, and **MQIACH\_CURRENT\_SEQ\_NUMBER** attributes have meaningful information only if the channel instance is in doubt. However, the attribute values are still returned when requested, even if the channel instance is not in-doubt.

The attribute list may specify the following on its own (this is the default value used if the parameter is not specified):

**MQIACF\_ALL**

All attributes.

or a combination of the following:

### ***Common status***

The following information applies to all sets of channel status, whether or not the set is current.

**MQCACH\_CHANNEL\_NAME**

Channel name.

**MQCACH\_XMIT\_Q\_NAME**

Transmission queue name.

**MQCACH\_CONNECTION\_NAME**

Connection name.

## Inquire Channel Status

MQIACH\_CHANNEL\_INSTANCE\_TYPE

Channel instance type.

MQCACH\_CURRENT\_LUWID

Logical unit of work identifier for current batch.

MQCACH\_LAST\_LUWID

Logical unit of work identifier for last committed batch.

MQIACH\_CURRENT\_MSGS

Number of messages sent or received in current batch.

MQIACH\_CURRENT\_SEQ\_NUMBER

Sequence number of last message sent or received.

MQIACH\_INDOUBT\_STATUS

Whether the channel is currently in-doubt.

MQIACH\_LAST\_SEQ\_NUMBER

Sequence number of last message in last committed batch.

MQCACH\_CURRENT\_LUWID, MQCACH\_LAST\_LUWID, MQIACH\_CURRENT\_MSGS, MQIACH\_CURRENT\_SEQ\_NUMBER, MQIACH\_INDOUBT\_STATUS and MQIACH\_LAST\_SEQ\_NUMBER do not apply to server-connection channels, and no values are returned. If specified on the command they are ignored.

### ***Current-only status***

The following information applies only to current channel instances. The information applies to all channel types, except where stated.

MQCACH\_CHANNEL\_START\_DATE

Date channel was started.

MQCACH\_CHANNEL\_START\_TIME

Time channel was started.

MQCACH\_LAST\_MSG\_DATE

Date last message was sent, or MQI call was handled.

MQCACH\_LAST\_MSG\_TIME

Time last message was sent, or MQI call was handled.

MQCACH\_MCA\_JOB\_NAME

Name of MCA job.

MQIACH\_BATCHES

Number of completed batches.

MQIACH\_BUFFERS\_SENT

Number of buffers sent.

MQIACH\_BUFFERS\_RCVD

Number of buffers received.

MQIACH\_BYTES\_SENT

Number of bytes sent.

MQIACH\_BYTES\_RCVD

Number of bytes received.

MQIACH\_LONG\_RETRIES\_LEFT  
Number of long retry attempts remaining.

MQIACH\_MCA\_STATUS  
MCA status.

MQIACH\_MSGS  
Number of messages sent or received, or number of MQI calls handled.

MQIACH\_SHORT\_RETRIES\_LEFT  
Number of short retry attempts remaining.

MQIACH\_STOP\_REQUESTED  
Whether user stop request has been received.

The following are supported on Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems, and Windows NT:

MQIACH\_BATCH\_SIZE  
Batch size.

MQIACH\_HB\_INTERVAL  
Heartbeat interval (seconds).

The following is supported on Digital OpenVMS, OS/2, Tandem NonStop Kernel, UNIX systems, 32-bit Windows, and Windows NT:

MQIACH\_NPM\_SPEED  
Speed of nonpersistent messages.

MQIACH\_BATCHES, MQIACH\_LONG\_RETRIES\_LEFT, MQIACH\_SHORT\_RETRIES\_LEFT, MQIACH\_BATCH\_SIZE, MQIACH\_HB\_INTERVAL and MQIACH\_NPM\_SPEED do not apply to server-connection channels, and no values are returned. If specified on the command they are ignored.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR  
(2067, X'813') Attribute selector not valid.

MQRCCF\_CFIL\_COUNT\_ERROR  
Count of parameter values not valid.

MQRCCF\_CFIL\_DUPLICATE\_VALUE  
Duplicate parameter.

MQRCCF\_CFIL\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIL\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

## Inquire Channel Status

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_NAME\_ERROR  
Channel name error.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHL\_INST\_TYPE\_ERROR  
Channel instance type not valid.

MQRCCF\_CHL\_STATUS\_NOT\_FOUND  
Channel status not found.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

MQRCCF\_XMIT\_Q\_NAME\_ERROR  
Transmission queue name error.

## Inquire Channel Status (Response)

The response to the Inquire Channel Status (MQCMD\_INQUIRE\_CHANNEL\_STATUS) command consists of the response header followed by

- The *ChannelName* structure,
- The *XmitQName* structure,
- The *ConnectionName* structure,
- The *ChannelInstanceType* structure,
- The *ChannelType* structure, and
- The *ChannelStatus* structure

which are followed by the requested combination of status attribute parameter structures. One such message is generated for each channel instance found which matches the criteria specified on the command.

This response is supported on all platforms.

### **Always returned:**

*ChannelName, XmitQName, ConnectionName, ChannelInstanceType, ChannelType, ChannelStatus*

### **Returned if requested:**

*InDoubtStatus, LastSequenceNumber, LastLUWID, CurrentMsgs, CurrentSequenceNumber, CurrentLUWID, LastMsgTime, LastMsgDate, Msgs, BytesSent, BytesReceived, Batches, ChannelStartTime, ChannelStartDate, BuffersSent, BuffersReceived, LongRetriesLeft, ShortRetriesLeft, MCAJobName, MCAStatus, StopRequested, BatchSize, HeartbeatInterval, NonPersistentMsgSpeed*

## Response data

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

*ChannelInstanceType* (MQCFIN)

Channel instance type (parameter identifier: MQIACH\_CHANNEL\_INSTANCE\_TYPE).

The value may be:

MQOT\_CURRENT\_CHANNEL  
Current channel status.

MQOT\_SAVED\_CHANNEL  
Saved channel status.

## Inquire Channel Status (Response)

### *ChannelType* (MQCFIN)

Channel type (parameter identifier: MQIACH\_CHANNEL\_TYPE).

The value may be:

MQCHT\_SENDER  
Sender.

MQCHT\_SERVER  
Server.

MQCHT\_RECEIVER  
Receiver.

MQCHT\_REQUESTER  
Requester.

MQCHT\_SVRCONN  
Server-connection (for use by clients).

This value is not supported in the following environment: 32-bit Windows.

MQCHT\_CLNTCONN  
Client connection.

This value is not supported in the following environments: OS/400, 32-bit Windows.

MQCHT\_CLUSRCVR  
Cluster-receiver.

MQCHT\_CLUSSDR  
Cluster-sender.

### *ChannelStatus* (MQCFIN)

Channel status (parameter identifier: MQIACH\_CHANNEL\_STATUS).

The value may be:

MQCHS\_BINDING  
Channel is negotiating with the partner.

MQCHS\_STARTING  
Channel is waiting to become active.

MQCHS\_RUNNING  
Channel is transferring or waiting for messages.

MQCHS\_PAUSED  
Channel is paused.

MQCHS\_STOPPING  
Channel is in process of stopping.

MQCHS\_RETRYING  
Channel is reattempting to establish connection.

MQCHS\_STOPPED  
Channel is stopped.

MQCHS\_REQUESTING  
Requester channel is requesting connection.

MQCHS\_INITIALIZING  
Channel is initializing.

### *InDoubtStatus* (MQCFIN)

Whether the channel is currently in doubt (parameter identifier: MQIACH\_INDOUBT\_STATUS).

A sending channel is only in doubt while the sending Message Channel Agent is waiting for an acknowledgment that a batch of messages, which it has sent, has been successfully received. It is not in doubt at all other times, including the period during which messages are being sent, but before an acknowledgment has been requested.

A receiving channel is never in doubt.

The value may be:

MQCHIDS\_NOT\_INDOUBT  
Channel is not in-doubt.

MQCHIDS\_INDOUBT  
Channel is in-doubt.

### *LastSequenceNumber* (MQCFIN)

Sequence number of last message in last committed batch (parameter identifier: MQIACH\_LAST\_SEQ\_NUMBER).

### *LastLUWID* (MQCFST)

Logical unit of work identifier for last committed batch (parameter identifier: MQCACH\_LAST\_LUWID).

The maximum length is MQ\_LUWID\_LENGTH.

### *CurrentMsgs* (MQCFIN)

Number of messages in-doubt (parameter identifier: MQIACH\_CURRENT\_MSGS).

For a sending channel, this is the number of messages that have been sent in the current batch. It is incremented as each message is sent, and when the channel becomes in-doubt it is the number of messages that are in-doubt.

For a receiving channel, it is the number of messages that have been received in the current batch. It is incremented as each message is received.

The value is reset to zero, for both sending and receiving channels, when the batch is committed.

### *CurrentSequenceNumber* (MQCFIN)

Sequence number of last message in in-doubt batch (parameter identifier: MQIACH\_CURRENT\_SEQ\_NUMBER).

For a sending channel, this is the message sequence number of the last message sent. It is updated as each message is sent, and when the channel becomes in-doubt it is the message sequence number of the last message in the in-doubt batch.

For a receiving channel, it is the message sequence number of the last message that was received. It is updated as each message is received.

## Inquire Channel Status (Response)

### *CurrentLUWID* (MQCFST)

Logical unit of work identifier for in-doubt batch (parameter identifier: MQCACH\_CURRENT\_LUWID).

The logical unit of work identifier associated with the current batch, for a sending or a receiving channel.

For a sending channel, when the channel is in-doubt it is the LUWID of the in-doubt batch.

It is updated with the LUWID of the next batch when this is known.

The maximum length is MQ\_LUWID\_LENGTH.

### *LastMsgTime* (MQCFST)

Time last message was sent, or MQI call was handled (parameter identifier: MQCACH\_LAST\_MSG\_TIME).

The maximum length of the string is MQ\_CHANNEL\_TIME\_LENGTH.

### *LastMsgDate* (MQCFST)

Date last message was sent, or MQI call was handled (parameter identifier: MQCACH\_LAST\_MSG\_DATE).

The maximum length of the string is MQ\_CHANNEL\_DATE\_LENGTH.

### *Msgs* (MQCFIN)

Number of messages sent or received, or number of MQI calls handled (parameter identifier: MQIACH\_MSGS).

### *BytesSent* (MQCFIN)

Number of bytes sent (parameter identifier: MQIACH\_BYTES\_SENT).

### *BytesReceived* (MQCFIN)

Number of bytes received (parameter identifier: MQIACH\_BYTES\_RCVD).

### *Batches* (MQCFIN)

Number of completed batches (parameter identifier: MQIACH\_BATCHES).

### *ChannelStartTime* (MQCFST)

Time channel started (parameter identifier: MQCACH\_CHANNEL\_START\_TIME).

The maximum length of the string is MQ\_CHANNEL\_TIME\_LENGTH.

### *ChannelStartDate* (MQCFST)

Date channel started (parameter identifier: MQCACH\_CHANNEL\_START\_DATE).

The maximum length of the string is MQ\_CHANNEL\_DATE\_LENGTH.

### *BuffersSent* (MQCFIN)

Number of buffers sent (parameter identifier: MQIACH\_BUFFERS\_SENT).

### *BuffersReceived* (MQCFIN)

Number of buffers received (parameter identifier: MQIACH\_BUFFERS\_RCVD).

### *LongRetriesLeft* (MQCFIN)

Number of long retry attempts remaining (parameter identifier: MQIACH\_LONG\_RETRIES\_LEFT).

### *ShortRetriesLeft* (MQCFIN)

Number of short retry attempts remaining (parameter identifier: MQIACH\_SHORT\_RETRIES\_LEFT).

### *MCAJobName* (MQCFST)

Name of MCA job (parameter identifier: MQCACH\_MCA\_JOB\_NAME).

The maximum length of the string is MQ\_MCA\_JOB\_NAME\_LENGTH.

### *MCAStatus* (MQCFIN)

MCA status (parameter identifier: MQIACH\_MCA\_STATUS).

The value may be:

MQMCAS\_STOPPED

Message channel agent stopped.

MQMCAS\_RUNNING

Message channel agent running.

### *StopRequested* (MQCFIN)

Whether user stop request is outstanding (parameter identifier: MQIACH\_STOP\_REQUESTED).

The value may be:

MQCHSR\_STOP\_NOT\_REQUESTED

User stop request has not been received.

MQCHSR\_STOP\_REQUESTED

User stop request has been received.

### *BatchSize* (MQCFIN)

Negotiated batch size (parameter identifier: MQIACH\_BATCH\_SIZE).

### *HeartbeatInterval* (MQCFIN)

Heartbeat interval (parameter identifier: MQIACH\_HB\_INTERVAL).

### *NonPersistentMsgSpeed* (MQCFIN)

Speed at which nonpersistent messages are to be sent (parameter identifier: MQIACH\_NPM\_SPEED).

The value may be:

MQNPMS\_NORMAL

Normal speed.

MQNPMS\_FAST

Fast speed.

---

### Inquire Cluster Queue Manager

The Inquire Cluster Queue Manager (MQCMD\_INQUIRE\_CLUSTER\_Q\_MGR) command inquires about the attributes of MQSeries queue managers in a cluster.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*ClusterQMgrName*

**Optional parameters:**

*Channel, ClusterName, ClusterQMgrAttrs*

### Required parameters

*ClusterQMgrName* (MQCFST)

Queue manager name (parameter identifier: MQCA\_CLUSTER\_Q\_MGR\_NAME).

Generic queue manager names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all queue managers having names that start with the selected character string. An asterisk on its own matches all possible names.

The queue manager name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### Optional parameters

*Channel* (MQCFST)

Channel name (parameter identifier: MQCA\_CHANNEL\_NAME).

Generic channel names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all channels having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

If you do not specify a value for this parameter, channel information about *all* queue managers in the cluster is automatically returned.

*ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

Generic cluster names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all clusters having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

If you do not specify a value for this parameter, cluster information about *all* queue managers inquired is automatically returned.

*ClusterQMgrAttrs* (MQCFIL)

Attributes (parameter identifier: MQIACF\_CLUSTER\_Q\_MGR\_ATTRS).

The attribute list may specify the following on its own (this is the default value used if the parameter is not specified):

MQIACF\_ALL

All attributes.

or a combination of the following:

MQCA\_ALTERATION\_DATE

The date on which the information was last altered, in the form yyyy-mm-dd.

MQCA\_ALTERATION\_TIME

The time at which the information was last altered, in the form hh.mm.ss.

MQCA\_CLUSTER\_DATE

The date on which the information became available to the local queue manager.

MQCA\_CLUSTER\_NAME

The name of the cluster to which the channel belongs.

MQCA\_CLUSTER\_TIME

The time at which the information became available to the local queue manager.

MQCA\_Q\_MGR\_IDENTIFIER

The unique identifier of the queue manager.

MQCACH\_CONNECTION\_NAME

Connection name.

MQCACH\_DESCRIPTION

Description.

MQCACH\_MCA\_NAME

Message channel agent name.

MQCACH\_MCA\_USER\_ID

MCA user identifier.

MQCACH\_MODE\_NAME

Mode name.

MQCACH\_MR\_EXIT\_NAME

Message-retry exit name.

MQCACH\_MR\_EXIT\_USER\_DATA

Message-retry exit user data.

MQCACH\_MSG\_EXIT\_NAME

Message exit name.

MQCACH\_MSG\_EXIT\_USER\_DATA

Message exit user data.

MQCACH\_PASSWORD

Password.

## Inquire Cluster Queue Manager

| MQCACH\_RCV\_EXIT\_NAME  
| Receive exit name.

| MQCACH\_RCV\_EXIT\_USER\_DATA  
| Receive exit user data.

| MQCACH\_SEC\_EXIT\_NAME  
| Security exit name.

| MQCACH\_SEC\_EXIT\_USER\_DATA  
| Security exit user data.

| MQCACH\_SEND\_EXIT\_NAME  
| Send exit name.

| MQCACH\_SEND\_EXIT\_USER\_DATA  
| Send exit user data.

| MQCACH\_TP\_NAME  
| Transaction program name.

| MQCACH\_USER\_ID  
| User identifier.

| MQCACH\_XMIT\_Q\_NAME  
| Transmission queue name.

| MQIACF\_Q\_MGR\_DEFINITION\_TYPE  
| How the cluster queue manager was defined.

| MQIACF\_Q\_MGR\_TYPE  
| The function of the queue manager in the cluster.

| MQIACF\_SUSPEND  
| Whether the queue manager is suspended from the cluster.

| MQIACH\_BATCH\_INTERVAL  
| Batch wait interval (seconds).

| MQIACH\_BATCH\_SIZE  
| Batch size.

| MQIACH\_CHANNEL\_STATUS  
| Channel status.

| MQIACH\_DATA\_CONVERSION  
| Whether sender should convert application data.

| MQIACH\_DISC\_INTERVAL  
| Disconnection interval.

| MQIACH\_HB\_INTERVAL  
| Heartbeat interval (seconds).

| MQIACH\_LONG\_RETRY  
| Long retry count.

| MQIACH\_LONG\_TIMER  
| Long timer.

| MQIACH\_MAX\_MSG\_LENGTH  
| Maximum message length.

| MQIACH\_MCA\_TYPE  
| MCA type.

MQIACH\_MR\_COUNT  
 Message retry count.

MQIACH\_MR\_INTERVAL  
 Message retry interval (milliseconds).

MQIACH\_NETWORK\_PRIORITY  
 Network priority.

MQIACH\_NPM\_SPEED  
 Speed of nonpersistent messages.

MQIACH\_PUT\_AUTHORITY  
 Put authority.

MQIACH\_SEQUENCE\_NUMBER\_WRAP  
 Sequence number wrap.

MQIACH\_SHORT\_RETRY  
 Short retry count.

MQIACH\_SHORT\_TIMER  
 Short timer.

MQIACH\_XMIT\_PROTOCOL\_TYPE  
 Transmission protocol type.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR  
 (2067, X'813') Attribute selector not valid.

MQRCCF\_CFIL\_COUNT\_ERROR  
 Count of parameter values not valid.

MQRCCF\_CFIL\_DUPLICATE\_VALUE  
 Duplicate parameter.

MQRCCF\_CFIL\_LENGTH\_ERROR  
 Structure length not valid.

MQRCCF\_CFIL\_PARM\_ID\_ERROR  
 Parameter identifier is not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
 Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
 Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
 Structure type not valid.

---

### Inquire Cluster Queue Manager (Response)

The response to the Inquire Cluster Queue Manager (MQCMD\_INQUIRE\_CLUSTER\_Q\_MGR) command consists of the response header followed by the *QMgrName* structure and the requested combination of attribute parameter structures.

This response is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Always returned:**

*QMgrName, ChannelName, ClusterName*

**Returned if requested:**

*ChannelName, TransportType, ModeName, TpName, QMgrName, XmitQName, ConnectionName, MCAName, ChannelDesc, BatchSize, DiscInterval, ShortRetryCount, ShortRetryInterval, LongRetryCount, LongRetryInterval, DataConversion, SecurityExit, MsgExit, SendExit, ReceiveExit, PutAuthority, SeqNumberWrap, MaxMsgLength, SecurityUserData, MsgUserData, SendUserData, ReceiveUserData, MCAType, MCAUserIdentifier, UserIdentifier, Password, MsgRetryExit, MsgRetryUserData, MsgRetryCount, MsgRetryInterval, HeartbeatInterval, NonPersistentMsgSpeed, BatchInterval, AlterationDate, AlterationTime, ClusterInfo, ClusterName, QMgrDefinitionType, QMgrType, QMgrIdentifier, ClusterDate, ClusterTime, ChannelStatus, Suspend, NetworkPriority*

### Response data

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*TransportType* (MQCFIN)

Transmission protocol type (parameter identifier: MQIACH\_XMIT\_PROTOCOL\_TYPE).

The value may be:

MQXPT\_LU62  
LU 6.2.  
MQXPT\_TCP  
TCP.  
MQXPT\_NETBIOS  
NetBIOS.  
MQXPT\_SPX  
SPX.  
MQXPT\_DECNET  
DECnet.  
MQXPT\_UDP  
UDP.

*ModeName* (MQCFST)

Mode name (parameter identifier: MQCACH\_MODE\_NAME).

The maximum length of the string is MQ\_MODE\_NAME\_LENGTH.

*TpName* (MQCFST)

Transaction program name (parameter identifier: MQCACH\_TP\_NAME).

The maximum length of the string is MQ\_TP\_NAME\_LENGTH.

*QMgrName* (MQCFST)

Queue manager name (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier:  
MQCACH\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*ConnectionName* (MQCFST)

Connection name (parameter identifier: MQCACH\_CONNECTION\_NAME).

The maximum length of the string is MQ\_CONN\_NAME\_LENGTH.

*MCAName* (MQCFST)

Message channel agent name (parameter identifier:  
MQCACH\_MCA\_NAME).

The maximum length of the string is MQ\_MCA\_NAME\_LENGTH.

*ChannelDesc* (MQCFST)

Channel description (parameter identifier: MQCACH\_DESC).

The maximum length of the string is MQ\_CHANNEL\_DESC\_LENGTH.

*BatchSize* (MQCFIN)

Batch size (parameter identifier: MQIACH\_BATCH\_SIZE).

*DiscInterval* (MQCFIN)

Disconnection interval (parameter identifier: MQIACH\_DISC\_INTERVAL).

*ShortRetryCount* (MQCFIN)

Short retry count (parameter identifier: MQIACH\_SHORT\_RETRY).

*ShortRetryInterval* (MQCFIN)

Short timer (parameter identifier: MQIACH\_SHORT\_TIMER).

*LongRetryCount* (MQCFIN)

Long retry count (parameter identifier: MQIACH\_LONG\_RETRY).

*LongRetryInterval* (MQCFIN)

Long timer (parameter identifier: MQIACH\_LONG\_TIMER).

*DataConversion* (MQCFIN)

Whether sender should convert application data (parameter identifier:  
MQIACH\_DATA\_CONVERSION).

The value may be:

MQCDC\_NO\_SENDER\_CONVERSION

No conversion by sender.

MQCDC\_SENDER\_CONVERSION

Conversion by sender.

## Inquire Cluster Queue Manager (Response)

### *SecurityExit* (MQCFST)

Security exit name (parameter identifier: MQCACH\_SEC\_EXIT\_NAME).

The maximum length of the string is MQ\_EXIT\_NAME\_LENGTH.

### *MsgExit* (MQCFSL)

Message exit name (parameter identifier: MQCACH\_MSG\_EXIT\_NAME).

The maximum length of the string is MQ\_EXIT\_NAME\_LENGTH.

In the following environments, if more than one message exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

### *SendExit* (MQCFSL)

Send exit name (parameter identifier: MQCACH\_SEND\_EXIT\_NAME).

The maximum length of the string is MQ\_EXIT\_NAME\_LENGTH.

In the following environments, if more than one send exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

### *ReceiveExit* (MQCFSL)

Receive exit name (parameter identifier: MQCACH\_RCV\_EXIT\_NAME).

The maximum length of the string is MQ\_EXIT\_NAME\_LENGTH.

In the following environments, if more than one receive exit has been defined for the channel, the list of names is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

### *PutAuthority* (MQCFIN)

Put authority (parameter identifier: MQIACH\_PUT\_AUTHORITY).

The value may be:

MQPA\_DEFAULT

Default user identifier is used.

MQPA\_CONTEXT

Context user identifier is used.

### *SeqNumberWrap* (MQCFIN)

Sequence wrap number (parameter identifier:

MQIACH\_SEQUENCE\_NUMBER\_WRAP).

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier:

MQIACH\_MAX\_MSG\_LENGTH).

### *SecurityUserData* (MQCFST)

Security exit user data (parameter identifier:

MQCACH\_SEC\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

*MsgUserData* (MQCFSL)

Message exit user data (parameter identifier: MQCACH\_MSG\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, if more than one message exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*SendUserData* (MQCFSL)

Send exit user data (parameter identifier: MQCACH\_SEND\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, if more than one send exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*ReceiveUserData* (MQCFSL)

Receive exit user data (parameter identifier: MQCACH\_RCV\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

In the following environments, if more than one receive exit user data string has been defined for the channel, the list of strings is returned in an MQCFSL structure instead of an MQCFST structure: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*MCAType* (MQCFIN)

Message channel agent type (parameter identifier: MQIACH\_MCA\_TYPE).

The value may be:

MQMCAT\_PROCESS  
Process.

MQMCAT\_THREAD  
Thread (OS/2 and Windows NT only).

*MCAUserIdentifier* (MQCFST)

Message channel agent user identifier (parameter identifier: MQCACH\_MCA\_USER\_ID).

The maximum length of the string is MQ\_USER\_ID\_LENGTH.

*UserIdentifier* (MQCFST)

Task user identifier (parameter identifier: MQCACH\_USER\_ID).

The maximum length of the string is MQ\_USER\_ID\_LENGTH. However, only the first 10 characters are used.

*Password* (MQCFST)

Password (parameter identifier: MQCACH\_PASSWORD).

If a nonblank password is defined, it is returned as asterisks. Otherwise, it is returned as blanks.

## Inquire Cluster Queue Manager (Response)

The maximum length of the string is MQ\_PASSWORD\_LENGTH.  
However, only the first 10 characters are used.

### *MsgRetryExit* (MQCFST)

Message retry exit name (parameter identifier:  
MQCACH\_MR\_EXIT\_NAME).

The maximum length of the string is MQ\_EXIT\_NAME\_LENGTH.

### *MsgRetryUserData* (MQCFST)

Message retry exit user data (parameter identifier:  
MQCACH\_MR\_EXIT\_USER\_DATA).

The maximum length of the string is MQ\_EXIT\_DATA\_LENGTH.

### *MsgRetryCount* (MQCFIN)

Message retry count (parameter identifier: MQIACH\_MR\_COUNT).

### *MsgRetryInterval* (MQCFIN)

Message retry interval (parameter identifier: MQIACH\_MR\_INTERVAL).

### *BatchInterval* (MQCFIN)

Batch interval (parameter identifier: MQIACH\_BATCH\_INTERVAL).

### *AlterationDate* (MQCFST) (parameter identifier: MQCA\_ALTERATION\_DATE).

**The date at which the information was last altered.**

### *AlterationTime* (MQCFST) (parameter identifier: MQCA\_ALTERATION\_TIME).

**The time at which the information was last altered.**

### *HeartbeatInterval* (MQCFIN)

Heartbeat interval (parameter identifier: MQIACH\_HB\_INTERVAL).

### *NonPersistentMsgSpeed* (MQCFIN)

Speed at which non-persistent messages are to be sent (parameter  
identifier: MQIACH\_NPM\_SPEED).

The value may be:

MQNPMS\_NORMAL  
Normal speed.

MQNPMS\_FAST  
Fast speed.

### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

### *QMgrDefinitionType* (MQCFIN)

Queue manager definition type (parameter identifier:  
MQIACF\_Q\_MGR\_DEFINITION\_TYPE).

The value may be:

MQQMDT\_EXPLICIT\_CLUSTER\_SENDER  
A cluster-sender channel from an explicit definition.

MQQMDT\_AUTO\_CLUSTER\_SENDER  
A cluster-sender channel by auto-definition.

MQQMDT\_CLUSTER\_RECEIVER

A cluster-receiver channel.

MQQMDT\_AUTO\_EXP\_CLUSTER\_SENDER

A cluster-sender channel, both from an explicit definition and by auto-definition.

*QMgrType* (MQCFIN)

Queue manager type (parameter identifier: MQIACF\_Q\_MGR\_TYPE).

The value may be:

MQQMT\_NORMAL

A normal queue manager.

MQQMT\_REPOSITORY

A repository queue manager.

*QMgrIdentifier* (MQCFST)

Queue manager identifier (parameter identifier: MQCA\_Q\_MGR\_IDENTIFIER).

The unique identifier of the queue manager.

*ClusterDate* (MQCFST)

Cluster date (parameter identifier: MQCA\_CLUSTER\_DATE).

The date at which the information became available to the local queue manager.

*ClusterInfo* (MQCFIN)

Cluster information (parameter identifier: MQIACF\_CLUSTER\_INFO).

The cluster information available to the local queue manager.

*ClusterTime* (MQCFST)

Cluster time (parameter identifier: MQCA\_CLUSTER\_TIME).

The time at which the information became available to the local queue manager.

*ChannelStatus* (MQCFIN)

Channel status (parameter identifier: MQIACH\_CHANNEL\_STATUS).

The value may be:

MQCHS\_BINDING

Channel is negotiating with the partner.

MQCHS\_INACTIVE

Channel is not active.

MQCHS\_STARTING

Channel is waiting to become active.

MQCHS\_RUNNING

Channel is transferring or waiting for messages.

MQCHS\_PAUSED

Channel is paused.

## Inquire Cluster Queue Manager (Response)

MQCHS\_STOPPING

Channel is in process of stopping.

MQCHS\_RETRYING

Channel is reattempting to establish connection.

MQCHS\_STOPPED

Channel is stopped.

MQCHS\_REQUESTING

Requester channel is requesting connection.

MQCHS\_INITIALIZING

Channel is initializing.

This parameter is returned if the channel is a cluster-sender channel (CLUSSDR) only.

*Suspend* (MQCFIN)

Whether the queue manager is suspended (parameter identifier: MQIACF\_SUSPEND).

The value may be:

MQSUS\_NO

The queue manager is not suspended from the cluster.

MQSUS\_YES

The queue manager is suspended from the cluster.

*NetworkPriority* (MQCFIN)

Network priority (parameter identifier: MQIACF\_NETWORK\_PRIORITY).

## Inquire Namelist

The Inquire Namelist (MQCMD\_INQUIRE\_NAMELIST) command inquires about the attributes of existing MQSeries namelists.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:** *NamelistName*

**Optional parameters:** *NamelistAttrs*

## Required parameters

*NamelistName* (MQCFST)

Namelist name (parameter identifier: MQCA\_NAMELIST\_NAME).

This is the name of the namelist whose attributes are required. Generic namelist names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all namelists having names that start with the selected character string. An asterisk on its own matches all possible names.

The namelist name is always returned regardless of the attributes requested.

The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

## Optional parameters

*NamelistAttrs* (MQCFIL)

Namelist attributes (parameter identifier: MQIACF\_NAMELIST\_ATTRS).

The attribute list may specify the following on its own (this is the default value if the parameter is not specified):

MQIACF\_ALL  
All attributes.

or a combination of the following:

MQCA\_NAMELIST\_NAME  
Name of namelist object.

MQCA\_NAMELIST\_DESC  
Namelist description.

MQCA\_NAMES  
Names in the namelist.

MQCA\_ALTERATION\_DATE  
The date on which the information was last altered, in the form yyyy-mm-dd.

MQCA\_ALTERATION\_TIME  
The time at which the information was last altered, in the form hh.mm.ss.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR  
(2067, X'813') Attribute selector not valid.

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_CFIL\_COUNT\_ERROR  
Count of parameter values not valid.

MQRCCF\_CFIL\_DUPLICATE\_VALUE  
Duplicate parameter.

MQRCCF\_CFIL\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIL\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Inquire Namelist (Response)

The response to the Inquire Namelist (MQCMD\_INQUIRE\_NAMELIST) command consists of the response header followed by the *NamelistName* structure and the requested combination of attribute parameter structures. If a generic namelist name was specified, one such message is generated for each namelist found.

This response is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Always returned:**

*NamelistName*

**Returned if requested:**

*NamelistDesc, Names, AlterationDate, AlterationTime*

## Response data

*NamelistName* (MQCFST)

The name of the namelist definition (parameter identifier: MQCA\_NAMELIST\_NAME).

The maximum length of the string is MQ\_NAMELIST\_NAME\_LENGTH.

*NamelistDesc* (MQCFST)

Description of namelist definition (parameter identifier: MQCA\_NAMELIST\_DESC).

The maximum length of the string is MQ\_NAMELIST\_DESC\_LENGTH.

*Names* (MQCFSL)

The names contained in the namelist (parameter identifier: MQCA\_NAMES).

The number of names in the list is given by the *Count* field in the MQCFSL structure. The length of each name is given by the *StringLength* field in that structure. The maximum length of a name is MQ\_OBJECT\_NAME\_LENGTH.

*AlterationDate* (MQCFST)

Alteration date (parameter identifier: MQCA\_ALTERATION\_DATE).

The date when the information was last altered.

*AlterationTime* (MQCFST)

Alteration time (parameter identifier: MQCA\_ALTERATION\_TIME).

The time when the information was last altered.

---

### Inquire Namelist Names

The Inquire Namelist Names (MQCMD\_INQUIRE\_NAMELIST\_NAMES) command inquires for a list of namelist names that match the generic namelist name specified.

This command is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

**Required parameters:**

*NamelistName*

**Optional parameters:**

None

### Required parameters

*NamelistName* (MQCFST)

Name of namelist (parameter identifier: MQCA\_NAMELIST\_NAME).

Generic namelist names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

## Inquire Namelist Names (Response)

The response to the Inquire Namelist Names (MQCMD\_INQUIRE\_NAMELIST\_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified namelist name.

This response is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

**Always returned:**

*NamelistNames*

**Returned if requested:**

None

## Response data

*NamelistNames* (MQCFSL)

Namelist Names (parameter identifier: MQCACF\_NAMELIST\_NAMES).

---

### Inquire Process

The Inquire Process (MQCMD\_INQUIRE\_PROCESS) command inquires about the attributes of existing MQSeries processes.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:** *ProcessName*

**Optional parameters:** *ProcessAttrs*

### Required parameters

*ProcessName* (MQCFST)

Process name (parameter identifier: MQCA\_PROCESS\_NAME).

Generic process names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all processes having names that start with the selected character string. An asterisk on its own matches all possible names.

The process name is always returned regardless of the attributes requested.

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

### Optional parameters

*ProcessAttrs* (MQCFIL)

Process attributes (parameter identifier: MQIACF\_PROCESS\_ATTRS).

The attribute list may specify the following on its own (this is the default value used if the parameter is not specified):

MQIACF\_ALL

All attributes.

or a combination of the following:

MQCA\_PROCESS\_NAME

Name of process definition.

MQCA\_PROCESS\_DESC

Description of process definition.

MQIA\_APPL\_TYPE

Application type.

MQCA\_APPL\_ID

Application identifier.

MQCA\_ENV\_DATA

Environment data.

MQCA\_USER\_DATA

User data.

MQCA\_ALTERATION\_DATE

The date at which the information was last altered, in the form yyyy-mm-dd.

This attribute is supported on AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

## MQCA\_ALTERATION\_TIME

The time at which the information was last altered, in the form  
hh.mm.ss.

This attribute is supported on AIX, HP-UX, OS/2, Sun Solaris, and  
Windows NT only.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

## MQRC\_SELECTOR\_ERROR

(2067, X'813') Attribute selector not valid.

## MQRC\_UNKNOWN\_OBJECT\_NAME

(2085, X'825') Unknown object name.

## MQRCCF\_CFIL\_COUNT\_ERROR

Count of parameter values not valid.

## MQRCCF\_CFIL\_DUPLICATE\_VALUE

Duplicate parameter.

## MQRCCF\_CFIL\_LENGTH\_ERROR

Structure length not valid.

## MQRCCF\_CFIL\_PARM\_ID\_ERROR

Parameter identifier is not valid.

## MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

## MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

## MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

## MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

## MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

## MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

## MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

---

### Inquire Process (Response)

The response to the Inquire Process (MQCMD\_INQUIRE\_PROCESS) command consists of the response header followed by the *ProcessName* structure and the requested combination of attribute parameter structures. If a generic process name was specified, one such message is generated for each process found.

This response is not supported on 32-bit Windows.

**Always returned:**

*ProcessName*

**Returned if requested:**

*ProcessDesc, ApplType, ApplId, EnvData, UserData, AlterationDate, AlterationTime*

### Response data

*ProcessName* (MQCFST)

The name of the process definition (parameter identifier: MQCA\_PROCESS\_NAME).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

*ProcessDesc* (MQCFST)

Description of process definition (parameter identifier: MQCA\_PROCESS\_DESC).

The maximum length of the string is MQ\_PROCESS\_DESC\_LENGTH.

*ApplType* (MQCFIN)

Application type (parameter identifier: MQIA\_APPL\_TYPE).

The value may be:

MQAT\_OS400  
OS/400 application.

MQAT\_OS2  
OS/2 or Presentation Manager application.

MQAT\_DOS  
DOS client application.

MQAT\_WINDOWS  
Windows client or 16-bit Windows application.

MQAT\_WINDOWS\_NT  
Windows NT or 32-bit Windows application.

MQAT\_UNIX  
UNIX application.

MQAT\_AIX  
AIX application (same value as MQAT\_UNIX).

MQAT\_CICS  
CICS transaction.

*user-value*: User-defined application type in the range 65 536 through 999 999 999.

*ApplId* (MQCFST)

Application identifier (parameter identifier: MQCA\_APPL\_ID).

The maximum length of the string is MQ\_PROCESS\_APPL\_ID\_LENGTH.

*EnvData* (MQCFST)

Environment data (parameter identifier: MQCA\_ENV\_DATA).

The maximum length of the string is  
MQ\_PROCESS\_ENV\_DATA\_LENGTH.

*UserData* (MQCFST)

User data (parameter identifier: MQCA\_USER\_DATA).

The maximum length of the string is  
MQ\_PROCESS\_USER\_DATA\_LENGTH.

| *AlterationDate* (MQCFST)

| Alteration date (parameter identifier: MQCA\_ALTERATION\_DATE).

| The date when the information was last altered.

| *AlterationTime* (MQCFST)

| Alteration time (parameter identifier: MQCA\_ALTERATION\_TIME).

| The time when the information was last altered.

---

### Inquire Process Names

The Inquire Process Names (MQCMD\_INQUIRE\_PROCESS\_NAMES) command inquires for a list of process names that match the generic process name specified.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:**

*ProcessName*

**Optional parameters:**

None

### Required parameters

*ProcessName* (MQCFST)

Name of process-definition for queue (parameter identifier: MQCA\_PROCESS\_NAME).

Generic process names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

## Inquire Process Names (Response)

The response to the Inquire Process Names (MQCMD\_INQUIRE\_PROCESS\_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified process name.

This response is not supported on 32-bit Windows.

**Always returned:**

*ProcessNames*

**Returned if requested:**

None

## Response data

*ProcessNames* (MQCFSL)

Process Names (parameter identifier: MQCACF\_PROCESS\_NAMES).

---

### Inquire Queue

The Inquire Queue (MQCMD\_INQUIRE\_Q) command inquires about the attributes of MQSeries queues.

This PCF is supported on all platforms.

**Required parameters:**

*QName*

**Optional parameters:**

*QType, ClusterName, ClusterNameList, ClusterInfo, QAttrs*

### Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

Generic queue names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all queues having names that start with the selected character string. An asterisk on its own matches all possible names.

The queue name is always returned, regardless of the attributes requested.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### Optional parameters

*QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

If this parameter is present, eligible queues are limited to those of the specified type. Any attribute selector specified in the *QAttrs* list which is only valid for queues of a different type or types is ignored; no error is raised.

If this parameter is not present (or if MQQT\_ALL is specified), queues of all types are eligible. Each attribute specified must be a valid queue attribute selector (that is, it must be one of those in the following list), but it may not be applicable to all (or any) of the queues actually returned. Queue attribute selectors that are valid but not applicable to the queue are ignored, no error messages occur and no attribute is returned. The value may be:

MQQT\_ALL

All queue types.

MQQT\_LOCAL

Local queue.

MQQT\_ALIAS

Alias queue definition.

MQQT\_REMOTE

Local definition of a remote queue.

MQQT\_CLUSTER

Cluster queue.

The following is supported on all platforms, but on OS/400 for receipt by MQSeries for AS/400 V4R2, or later.:

#### MQQT\_MODEL

Model queue definition.

The default value if this parameter is not specified is MQQT\_ALL.

**Note:** If this parameter is present, it must occur immediately after the *QName* parameter.

#### *ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to which the channel belongs.

Generic cluster names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all clusters having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

#### *ClusterNameList* (MQCFST)

Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name, of the namelist, that specifies a list of clusters to which the channel belongs.

Generic cluster namelists are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all cluster namelists having names that start with the selected character string. An asterisk on its own matches all possible names.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

#### *ClusterInfo* (MQCFIN)

Cluster information (parameter identifier: MQIACF\_CLUSTER\_INFO).

This parameter requests that, in addition to information about attributes of queues defined on this queue manager, cluster information about these and other queues in the repository that match the selection criteria will be displayed.

In this case, there may be multiple queues with the same name displayed. The cluster information is shown with a queue type of MQQT\_CLUSTER.

The cluster information is obtained locally from the queue manager.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

#### *QAttrs* (MQCFIL)

Queue attributes (parameter identifier: MQIACF\_Q\_ATTRS).

The attribute list may specify the following on its own (this is the default value used if the parameter is not specified):

#### MQIACF\_ALL

All attributes.

or a combination of the following:

***Relevant for any QType:***

MQCA\_Q\_NAME  
Queue name.

MQIA\_Q\_TYPE  
Queue type.

MQCA\_Q\_DESC  
Queue description.

MQIA\_INHIBIT\_PUT  
Whether put operations are allowed.

MQIA\_DEF\_PRIORITY  
Default message priority.

MQIA\_DEF\_PERSISTENCE  
Default message persistence.

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, Windows NT.

MQCA\_ALTERATION\_DATE  
The date on which the information was last altered, in the form yyyy-mm-dd.

MQCA\_ALTERATION\_TIME  
The time at which the information was last altered, in the form hh.mm.ss.

***Relevant for alias QType:***

MQIA\_INHIBIT\_GET  
Whether get operations are allowed.

MQCA\_BASE\_Q\_NAME  
Name of queue that alias resolves to.

MQIA\_SCOPE  
Queue definition scope.

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, and Windows NT:

MQCA\_CLUSTER\_NAME  
Cluster name.

MQCA\_CLUSTER\_NAMELIST  
Cluster namelist.

MQIA\_DEF\_BIND  
Default binding.

***Relevant for cluster QType:***

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, and Windows NT:

MQCA\_CLUSTER\_NAME  
Cluster name.

MQCA\_CLUSTER\_Q\_MGR\_NAME  
Queue manager name that hosts the queue.

MQCA\_Q\_MGR\_IDENTIFIER  
Internally generated queue manager name.

MQCA\_CLUSTER\_DATE  
Date when the definition became available to the local queue manager.

MQCA\_CLUSTER\_TIME  
Time when the definition became available to the local queue manager.

MQIA\_CLUSTER\_Q\_TYPE  
Cluster queue type.

**Relevant for local QType:**

MQIA\_INHIBIT\_GET  
Whether get operations are allowed.

MQCA\_PROCESS\_NAME  
Name of process definition.

MQIA\_MAX\_Q\_DEPTH  
Maximum number of messages allowed on queue.

MQIA\_MAX\_MSG\_LENGTH  
Maximum message length.

MQIA\_BACKOUT\_THRESHOLD  
Backout threshold.

MQCA\_BACKOUT\_REQ\_Q\_NAME  
Excessive backout requeue name.

MQIA\_SHAREABILITY  
Whether queue can be shared.

MQIA\_DEF\_INPUT\_OPEN\_OPTION  
Default open-for-input option.

MQIA\_HARDEN\_GET\_BACKOUT  
Whether to harden backout count.

MQIA\_MSG\_DELIVERY\_SEQUENCE  
Whether message priority is relevant.

MQIA\_RETENTION\_INTERVAL  
Queue retention interval.

MQIA\_DEFINITION\_TYPE  
Queue definition type.

MQIA\_USAGE  
Usage.

MQIA\_OPEN\_INPUT\_COUNT  
Number of MQOPEN calls that have the queue open for input.

MQIA\_OPEN\_OUTPUT\_COUNT  
Number of MQOPEN calls that have the queue open for output.

## Inquire Queue

MQIA\_CURRENT\_Q\_DEPTH  
Number of messages on queue.

MQCA\_CREATION\_DATE  
Queue creation date.

MQCA\_CREATION\_TIME  
Queue creation time.

MQCA\_INITIATION\_Q\_NAME  
Initiation queue name.

MQIA\_TRIGGER\_CONTROL  
Trigger control.

MQIA\_TRIGGER\_TYPE  
Trigger type.

MQIA\_TRIGGER\_MSG\_PRIORITY  
Threshold message priority for triggers.

MQIA\_TRIGGER\_DEPTH  
Trigger depth.

MQCA\_TRIGGER\_DATA  
Trigger data.

MQIA\_SCOPE  
Queue definition scope.

MQIA\_Q\_DEPTH\_HIGH\_LIMIT  
High limit for queue depth.

MQIA\_Q\_DEPTH\_LOW\_LIMIT  
Low limit for queue depth.

MQIA\_Q\_DEPTH\_MAX\_EVENT  
Control attribute for queue depth max events.

MQIA\_Q\_DEPTH\_HIGH\_EVENT  
Control attribute for queue depth high events.

MQIA\_Q\_DEPTH\_LOW\_EVENT  
Control attribute for queue depth low events.

MQIA\_Q\_SERVICE\_INTERVAL  
Limit for queue service interval.

MQIA\_Q\_SERVICE\_INTERVAL\_EVENT  
Control attribute for queue service interval events.

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, and Windows NT:

MQIA\_DIST\_LISTS  
Distribution list support.

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, and Windows NT:

MQCA\_CLUSTER\_NAME  
Cluster name.

MQCA\_CLUSTER\_NAMELIST

Cluster name.

MQIA\_DEF\_BIND

Default binding.

***Relevant for remote QType:***

MQCA\_REMOTE\_Q\_NAME

Name of remote queue as known locally on the remote queue manager.

MQCA\_REMOTE\_Q\_MGR\_NAME

Name of remote queue manager.

MQCA\_XMIT\_Q\_NAME

Transmission queue name.

MQIA\_SCOPE

Queue definition scope.

The following are supported on AIX, HP-UX, OS/2, Sun Solaris, and Windows NT:

MQCA\_CLUSTER\_NAME

Cluster name.

MQCA\_CLUSTER\_NAMELIST

Cluster name.

MQIA\_DEF\_BIND

Default binding.

***Relevant for model QType:***

MQIA\_INHIBIT\_GET

Whether get operations are allowed.

MQCA\_PROCESS\_NAME

Name of process definition.

MQIA\_MAX\_Q\_DEPTH

Maximum number of messages allowed on queue.

MQIA\_MAX\_MSG\_LENGTH

Maximum message length.

MQIA\_BACKOUT\_THRESHOLD

Backout threshold.

MQCA\_BACKOUT\_REQ\_Q\_NAME

Excessive backout requeue name.

MQIA\_SHAREABILITY

Whether queue can be shared.

MQIA\_DEF\_INPUT\_OPEN\_OPTION

Default open-for-input option.

MQIA\_HARDEN\_GET\_BACKOUT

Whether to harden backout count.

MQIA\_MSG\_DELIVERY\_SEQUENCE

Whether message priority is relevant.

## Inquire Queue

MQIA\_RETENTION\_INTERVAL  
Queue retention interval.

MQIA\_DEFINITION\_TYPE  
Queue definition type.

MQIA\_USAGE  
Usage.

MQCA\_CREATION\_DATE  
Queue creation date.

MQCA\_CREATION\_TIME  
Queue creation time.

MQCA\_INITIATION\_Q\_NAME  
Initiation queue name.

MQIA\_TRIGGER\_CONTROL  
Trigger control.

MQIA\_TRIGGER\_TYPE  
Trigger type.

MQIA\_TRIGGER\_MSG\_PRIORITY  
Threshold message priority for triggers.

MQIA\_TRIGGER\_DEPTH  
Trigger depth.

MQCA\_TRIGGER\_DATA  
Trigger data.

MQIA\_Q\_DEPTH\_HIGH\_LIMIT  
High limit for queue depth.

MQIA\_Q\_DEPTH\_LOW\_LIMIT  
Low limit for queue depth.

MQIA\_Q\_DEPTH\_MAX\_EVENT  
Control attribute for queue depth max events.

MQIA\_Q\_DEPTH\_HIGH\_EVENT  
Control attribute for queue depth high events.

MQIA\_Q\_DEPTH\_LOW\_EVENT  
Control attribute for queue depth low events.

MQIA\_Q\_SERVICE\_INTERVAL  
Limit for queue service interval.

MQIA\_Q\_SERVICE\_INTERVAL\_EVENT  
Control attribute for queue service interval events.

The following is supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, and Windows NT:

MQIA\_DIST\_LISTS  
Distribution list support.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR  
(2067, X'813') Attribute selector not valid.

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_CFIL\_COUNT\_ERROR  
Count of parameter values not valid.

MQRCCF\_CFIL\_DUPLICATE\_VALUE  
Duplicate parameter.

MQRCCF\_CFIL\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIL\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_Q\_TYPE\_ERROR  
Queue type not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Inquire Queue (Response)

The response to the Inquire Queue (MQCMD\_INQUIRE\_Q) command consists of the response header followed by the *QName* structure and the requested combination of attribute parameter structures. If a generic queue name was specified, or cluster queues requested (either by using MQQT\_CLUSTER or MQIACF\_CLUSTER\_INFO), one such message is generated for each queue found.

This PCF is supported on all platforms.

**Always returned:**

*QName*

**Returned if requested:**

*QType, QDesc, InhibitGet, InhibitPut, DefPriority, DefPersistence, ProcessName, MaxQDepth, MaxMsgLength, BackoutThreshold, BackoutRequeueName, Shareability, DefInputOpenOption, HardenGetBackout, MsgDeliverySequence, RetentionInterval, DefinitionType, DistLists, Usage, OpenInputCount, OpenOutputCount, CurrentQDepth, CreationDate, CreationTime, InitiationQName, TriggerControl, TriggerType, TriggerMsgPriority, TriggerDepth, TriggerData, BaseQName, RemoteQName, RemoteQMgrName, XmitQName, Scope, QDepthHighLimit, QDepthLowLimit, QDepthMaxEvent, QDepthHighEvent, QDepthLowEvent, QServiceInterval, QServiceIntervalEvent, AlterationDate, AlterationTime, ClusterDate, ClusterTime, ClusterName, ClusterNamelist, ClusterQType, DefBind, QMgrName, QMgrIdentifier*

### Response data

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

The value may be:

MQQT\_ALIAS

Alias queue definition.

MQQT\_CLUSTER

Cluster queue definition.

MQQT\_LOCAL

Local queue.

MQQT\_REMOTE

Local definition of a remote queue.

MQQT\_MODEL

Model queue definition.

*QDesc* (MQCFST)

Queue description (parameter identifier: MQCA\_Q\_DESC).

The maximum length of the string is MQ\_Q\_DESC\_LENGTH.

*InhibitGet* (MQCFIN)

Whether get operations are allowed (parameter identifier: MQIA\_INHIBIT\_GET).

The value may be:

MQQA\_GET\_ALLOWED

Get operations are allowed.

MQQA\_GET\_INHIBITED

Get operations are inhibited.

*InhibitPut* (MQCFIN)

Whether put operations are allowed (parameter identifier: MQIA\_INHIBIT\_PUT).

The value may be:

MQQA\_PUT\_ALLOWED

Put operations are allowed.

MQQA\_PUT\_INHIBITED

Put operations are inhibited.

*DefPriority* (MQCFIN)

Default priority (parameter identifier: MQIA\_DEF\_PRIORITY).

*DefPersistence* (MQCFIN)

Default persistence (parameter identifier: MQIA\_DEF\_PERSISTENCE).

The value may be:

MQPER\_PERSISTENT

Message is persistent.

MQPER\_NOT\_PERSISTENT

Message is not persistent.

*ProcessName* (MQCFST)

Name of process definition for queue (parameter identifier: MQCA\_PROCESS\_NAME).

The maximum length of the string is MQ\_PROCESS\_NAME\_LENGTH.

*MaxQDepth* (MQCFIN)

Maximum queue depth (parameter identifier: MQIA\_MAX\_Q\_DEPTH).

*MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIA\_MAX\_MSG\_LENGTH).

*BackoutThreshold* (MQCFIN)

Backout threshold (parameter identifier: MQIA\_BACKOUT\_THRESHOLD).

*BackoutRequeueName* (MQCFST)

Excessive backout requeue name (parameter identifier: MQCA\_BACKOUT\_REQ\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

## Inquire Queue (Response)

### *Shareability* (MQCFIN)

Whether queue can be shared (parameter identifier: MQIA\_SHAREABILITY).

The value may be:

MQQA\_SHAREABLE

Queue is shareable.

MQQA\_NOT\_SHAREABLE

Queue is not shareable.

### *DefInputOpenOption* (MQCFIN)

Default input open option for defining whether queues can be shared (parameter identifier: MQIA\_DEF\_INPUT\_OPEN\_OPTION).

The value may be:

MQOO\_INPUT\_EXCLUSIVE

Open queue to get messages with exclusive access.

MQOO\_INPUT\_SHARED

Open queue to get messages with shared access.

### *HardenGetBackout* (MQCFIN)

Whether to harden backout (parameter identifier: MQIA\_HARDEN\_GET\_BACKOUT).

The value may be:

MQQA\_BACKOUT\_HARDENED

Backout count remembered.

MQQA\_BACKOUT\_NOT\_HARDENED

Backout count may not be remembered.

### *MsgDeliverySequence* (MQCFIN)

Whether priority is relevant (parameter identifier: MQIA\_MSG\_DELIVERY\_SEQUENCE).

The value may be:

MQMDS\_PRIORITY

Messages are returned in priority order.

MQMDS\_FIFO

Messages are returned in FIFO order (first in, first out).

### *RetentionInterval* (MQCFIN)

Retention interval (parameter identifier: MQIA\_RETENTION\_INTERVAL).

### *DefinitionType* (MQCFIN)

Queue definition type (parameter identifier: MQIA\_DEFINITION\_TYPE).

The value may be:

MQQDT\_PREDEFINED

Predefined permanent queue.

MQQDT\_PERMANENT\_DYNAMIC  
Dynamically defined permanent queue.

MQQDT\_TEMPORARY\_DYNAMIC  
Dynamically defined temporary queue.

*DistLists* (MQCFIN)

Distribution list support (parameter identifier: MQIA\_DIST\_LISTS).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQDL\_SUPPORTED  
Distribution lists supported.

MQDL\_NOT\_SUPPORTED  
Distribution lists not supported.

*Usage* (MQCFIN)

Usage (parameter identifier: MQIA\_USAGE).

The value may be:

MQUS\_NORMAL  
Normal usage.

MQUS\_TRANSMISSION  
Transmission queue.

*OpenInputCount* (MQCFIN)

Number of MQOPEN calls that have the queue open for input (parameter identifier: MQIA\_OPEN\_INPUT\_COUNT).

*OpenOutputCount* (MQCFIN)

Number of MQOPEN calls that have the queue open for output (parameter identifier: MQIA\_OPEN\_OUTPUT\_COUNT).

*CurrentQDepth* (MQCFIN)

Current queue depth (parameter identifier: MQIA\_CURRENT\_Q\_DEPTH).

*CreationDate* (MQCFST)

Queue creation date (parameter identifier: MQCA\_CREATION\_DATE).

The maximum length of the string is MQ\_CREATION\_DATE\_LENGTH.

*CreationTime* (MQCFST)

Creation time (parameter identifier: MQCA\_CREATION\_TIME).

The maximum length of the string is MQ\_CREATION\_TIME\_LENGTH.

*InitiationQName* (MQCFST)

Initiation queue name (parameter identifier: MQCA\_INITIATION\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TriggerControl* (MQCFIN)

Trigger control (parameter identifier: MQIA\_TRIGGER\_CONTROL).

## Inquire Queue (Response)

The value may be:

MQTC\_OFF

Trigger messages not required.

MQTC\_ON

Trigger messages required.

*TriggerType* (MQCFIN)

Trigger type (parameter identifier: MQIA\_TRIGGER\_TYPE).

The value may be:

MQTT\_NONE

No trigger messages.

MQTT\_FIRST

Trigger message when queue depth goes from 0 to 1.

MQTT EVERY

Trigger message for every message.

MQTT\_DEPTH

Trigger message when depth threshold exceeded.

*TriggerMsgPriority* (MQCFIN)

Threshold message priority for triggers (parameter identifier: MQIA\_TRIGGER\_MSG\_PRIORITY).

*TriggerDepth* (MQCFIN)

Trigger depth (parameter identifier: MQIA\_TRIGGER\_DEPTH).

*TriggerData* (MQCFST)

Trigger data (parameter identifier: MQCA\_TRIGGER\_DATA).

The maximum length of the string is MQ\_TRIGGER\_DATA\_LENGTH.

*BaseQName* (MQCFST)

Queue name to which the alias resolves (parameter identifier: MQCA\_BASE\_Q\_NAME).

This is the name of a queue that is defined to the local queue manager.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*RemoteQName* (MQCFST)

Name of remote queue as known locally on the remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*RemoteQMgrName* (MQCFST)

Name of remote queue manager (parameter identifier: MQCA\_REMOTE\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*XmitQName* (MQCFST)

Transmission queue name (parameter identifier: MQCA\_XMIT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*Scope* (MQCFIN)

Scope of the queue definition (parameter identifier: MQIA\_SCOPE).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQSCO\_Q\_MGR

Queue-manager scope.

MQSCO\_CELL

Cell scope.

*QDepthHighLimit* (MQCFIN)

High limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth High event.

*QDepthLowLimit* (MQCFIN)

Low limit for queue depth (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_LIMIT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The threshold against which the queue depth is compared to generate a Queue Depth Low event.

*QDepthMaxEvent* (MQCFIN)

Controls whether Queue Full events are generated (parameter identifier: MQIA\_Q\_DEPTH\_MAX\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVN\_DISABLED

Event reporting disabled.

MQEVN\_ENABLED

Event reporting enabled.

*QDepthHighEvent* (MQCFIN)

Controls whether Queue Depth High events are generated (parameter identifier: MQIA\_Q\_DEPTH\_HIGH\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVN\_DISABLED

Event reporting disabled.

MQEVN\_ENABLED

Event reporting enabled.

*QDepthLowEvent* (MQCFIN)

Controls whether Queue Depth Low events are generated (parameter identifier: MQIA\_Q\_DEPTH\_LOW\_EVENT).

## Inquire Queue (Response)

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

**MQEVR\_DISABLED**

Event reporting disabled.

**MQEVR\_ENABLED**

Event reporting enabled.

*QServiceInterval* (MQCFIN)

Target for queue service interval (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The service interval used for comparison to generate Queue Service Interval High and Queue Service Interval OK events.

*QServiceIntervalEvent* (MQCFIN)

Controls whether Service Interval High or Service Interval OK events are generated (parameter identifier: MQIA\_Q\_SERVICE\_INTERVAL\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

**MQQSIE\_HIGH**

Queue Service Interval High events enabled.

**MQQSIE\_OK**

Queue Service Interval OK events enabled.

**MQQSIE\_NONE**

No queue service interval events enabled.

| *AlterationDate* (MQCFST)

| Alteration date (parameter identifier: MQCA\_ALTERATION\_DATE).

| The date when the information was last altered.

| *AlterationTime* (MQCFST)

| Alteration time (parameter identifier: MQCA\_ALTERATION\_TIME).

| The time when the information was last altered.

| *ClusterDate* (MQCFST)

| Cluster date (parameter identifier: MQCA\_CLUSTER\_DATE).

| The date on which the information became available to the local queue manager.

| *ClusterName* (MQCFST)

| Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

| *ClusterNameList* (MQCFST)

| Cluster namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

| *ClusterTime* (MQCFST)

| Cluster time (parameter identifier: MQCA\_CLUSTER\_TIME).

| The time at which the information became available to the local queue manager.

| *ClusterQType* (MQCFIN)

| Cluster queue type (parameter identifier: MQIA\_CLUSTER\_Q\_TYPE).

| The value may be:

| MQCQT\_LOCAL\_Q

| The cluster queue represents a local queue.

| MQCQT\_ALIAS\_Q

| The cluster queue represents an alias queue.

| MQCQT\_REMOTE\_Q

| The cluster queue represents a remote queue.

| MQCQT\_Q\_MGR\_ALIAS

| The cluster queue represents a queue manager alias.

| *DefBind* (MQCFIN)

| Default binding (parameter identifier: MQIA\_DEF\_BIND).

| The value may be:

| MQBND\_BIND\_ON\_OPEN

| Binding fixed by MQOPEN call.

| MQBND\_BIND\_NOT\_FIXED

| Binding not fixed.

| *QMgrName* (MQCFST)

| Name of local queue manager (parameter identifier:  
| MQCA\_CLUSTER\_Q\_MGR\_NAME).

| The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

| *QMgrIdentifier* (MQCFST)

| Queue manager identifier (parameter identifier:  
| MQCA\_Q\_MGR\_IDENTIFIER).

| The unique identifier of the queue manager.

---

### Inquire Queue Manager

The Inquire Queue Manager (MQCMD\_INQUIRE\_Q\_MGR) command inquires about the attributes of a queue manager.

This PCF is supported on all platforms.

**Required parameters:**

None

**Optional parameters:**

*QMGrAttrs*

### Optional parameters

*QMGrAttrs* (MQCFIL)

Queue manager attributes (parameter identifier: MQIACF\_Q\_MGR\_ATTRS).

The attribute list may specify the following on its own (this is the default value used if the parameter is not specified):

MQIACF\_ALL  
All attributes.

or a combination of the following:

MQCA\_Q\_MGR\_NAME  
Name of local queue manager.

MQCA\_Q\_MGR\_DESC  
Queue manager description.

MQIA\_PLATFORM  
Platform on which the queue manager resides.

MQIA\_COMMAND\_LEVEL  
Command level supported by queue manager.

MQIA\_TRIGGER\_INTERVAL  
Trigger interval.

MQCA\_DEAD\_LETTER\_Q\_NAME  
Name of dead-letter queue.

MQIA\_MAX\_PRIORITY  
Maximum priority.

MQCA\_COMMAND\_INPUT\_Q\_NAME  
System command input queue name.

MQCA\_DEF\_XMIT\_Q\_NAME  
Default transmission queue name.

MQIA\_CODED\_CHAR\_SET\_ID  
Coded character set identifier.

MQIA\_MAX\_HANDLES  
Maximum number of handles.

MQIA\_MAX\_UNCOMMITTED\_MSGS  
Maximum number of uncommitted messages within a unit of work.

MQIA\_MAX\_MSG\_LENGTH  
Maximum message length.

MQIA\_SYNCPOINT  
Syncpoint availability.

MQIA\_AUTHORITY\_EVENT  
Control attribute for authority events.

MQIA\_INHIBIT\_EVENT  
Control attribute for inhibit events.

MQIA\_LOCAL\_EVENT  
Control attribute for local events.

MQIA\_REMOTE\_EVENT  
Control attribute for remote events.

MQIA\_START\_STOP\_EVENT  
Control attribute for start stop events.

MQIA\_PERFORMANCE\_EVENT  
Control attribute for performance events.

The following attributes are supported on AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT:

MQIA\_DIST\_LISTS  
Distribution list support.

MQIA\_CHANNEL\_AUTO\_DEF  
Control attribute for automatic channel definition.

MQIA\_CHANNEL\_AUTO\_DEF\_EVENT  
Control attribute for automatic channel definition events.

MQCA\_CHANNEL\_AUTO\_DEF\_EXIT  
Automatic channel definition exit name.

The following attributes are supported on AIX, HP-UX, OS/2, Sun Solaris, and Windows NT:

MQCA\_CLUSTER\_WORKLOAD\_DATA  
Data passed to the cluster workload exit.

MQCA\_CLUSTER\_WORKLOAD\_EXIT  
Name of the cluster workload exit.

MQIA\_CLUSTER\_WORKLOAD\_LENGTH  
Maximum length of the message passed to the cluster workload exit.

MQCA\_REPOSITORY\_NAME  
Cluster name for the queue manager repository.

MQIA\_REPOSITORY\_NAMELIST  
Name of the list of clusters for which the queue manager is providing a repository manager service.

MQCA\_Q\_MGR\_IDENTIFIER  
Internally generated unique queue manager name.

MQCA\_ALTERATION\_DATE  
Date at which the definition was last altered.

## Inquire Queue Manager

MQCA\_ALTERATION\_TIME

Time at which the definition was last altered.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR

(2067, X'813') Attribute selector not valid.

MQRCCF\_CFIL\_COUNT\_ERROR

Count of parameter values not valid.

MQRCCF\_CFIL\_DUPLICATE\_VALUE

Duplicate parameter.

MQRCCF\_CFIL\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIL\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

## Inquire Queue Manager (Response)

The response to the Inquire Queue Manager (MQCMD\_INQUIRE\_Q\_MGR) command consists of the response header followed by the *QMgrName* structure and the requested combination of attribute parameter structures.

This response is supported on all platforms.

### **Always returned:**

*QMgrName*

### **Returned if requested:**

*QmgrDesc, Platform, CommandLevel, TriggerInterval, DeadLetterQName, MaxPriority, CommandInputQName, DefXmitQName, CodedCharSetId, MaxHandles, MaxUncommittedMsgs, MaxMsgLength, DistLists, SyncPoint, AuthorityEvent, InhibitEvent, LocalEvent, RemoteEvent, StartStopEvent, PerformanceEvent, ChannelAutoDef, ChannelAutoDefEvent, ChannelAutoDefExit, AlterationDate, AlterationTime, ClusterWorkloadExit, ClusterWorkloadData, ClusterWorkloadLength, QMgrIdentifier, RepositoryName, RepositoryNameList*

## Response data

### *QMgrName* (MQCFST)

Name of local queue manager (parameter identifier: MQCA\_Q\_MGR\_NAME).

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

### *QmgrDesc* (MQCFST)

Queue manager description (parameter identifier: MQCA\_Q\_MGR\_DESC).

The maximum length of the string is MQ\_Q\_MGR\_DESC\_LENGTH.

### *Platform* (MQCFIN)

Platform on which the queue manager resides (parameter identifier: MQIA\_PLATFORM).

The value may be:

MQPL\_OS400  
OS/400.

MQPL\_OS2  
OS/2.

MQPL\_UNIX  
UNIX systems.

MQPL\_AIX  
AIX (same value as MQPL\_UNIX).

MQPL\_WINDOWS\_NT  
Windows NT or 32-bit Windows.

MQPL\_NSK  
Tandem NonStop Kernel.

MQPL\_VMS  
Digital OpenVMS.

## Inquire Queue Manager (Response)

### *CommandLevel* (MQCFIN)

Command level supported by queue manager (parameter identifier: MQIA\_COMMAND\_LEVEL).

The value may be:

#### MQCMDL\_LEVEL\_1

Level 1 of system control commands.

This value is returned by the following:

- MQSeries for AIX Version 2 Release 2
- MQSeries for MVS/ESA:
  - Version 1 Release 1.1
  - Version 1 Release 1.2
  - Version 1 Release 1.3
- MQSeries for OS/2 version 2 Release 0
- MQSeries for OS/400:
  - Version 2 Release 3
  - Version 3 Release 1
  - Version 3 Release 6
- MQSeries for Windows Version 2 Release 0.

#### MQCMDL\_LEVEL\_101

MQSeries for Windows Version 2 Release 0.1.

#### MQCMDL\_LEVEL\_110

MQSeries for Windows Version 2 Release 1.

#### MQCMDL\_LEVEL\_200

MQSeries for Windows NT Version 2 Release 0.

#### MQCMDL\_LEVEL\_201

MQSeries for OS/2 Version 2 Release 0.1.

#### MQCMDL\_LEVEL\_210

MQSeries for OS/390 Version 2 Release 1.

#### MQCMDL\_LEVEL\_220

Level 220 of system control commands.

This value is returned by the following:

- MQSeries for AT&T GIS UNIX Version 2 Release 2.
- MQSeries for SINIX and DC/OSx Version 2 Release 2.
- MQSeries for Tandem NonStop Kernel Version 2 Release 2.

#### MQCMDL\_LEVEL\_221

Level 221 of system control commands.

This value is returned by the following:

- MQSeries for AIX Version 2 Release 2.1.
- MQSeries for Digital OpenVMS Version 2 Release 2.

#### MQCMDL\_LEVEL\_320

MQSeries for OS/400 Version 3 Release 2, and Version 3 Release 7.

#### MQCMDL\_LEVEL\_420

MQSeries for AS/400 Version 4 Release 2, and Release 2.1.

MQCMDL\_LEVEL\_500

Level 500 of system control commands.

This value is returned by the following:

- MQSeries for AIX Version 5 Release 0
- MQSeries for HP-UX Version 5 Release 0
- MQSeries for OS/2 Warp Version 5 Release 0
- MQSeries for Solaris Version 5 Release 0
- MQSeries for Windows NT Version 5 Release 0

MQCMDL\_LEVEL\_510

Level 510 of system control commands.

This value is returned by the following:

- MQSeries for AIX Version 5 Release 1
- MQSeries for HP-UX Version 5 Release 1
- MQSeries for OS/2 Warp Version 5 Release 1
- MQSeries for Solaris Version 5 Release 1
- MQSeries for Windows NT Version 5 Release 1

The set of system control commands that corresponds to a particular value of the *CommandLevel* attribute varies according to the value of the *Platform* attribute; both must be used to decide which system control commands are supported.

*TriggerInterval* (MQCFIN)

Trigger interval (parameter identifier: MQIA\_TRIGGER\_INTERVAL).

Specifies the trigger time interval, expressed in milliseconds, for use only with queues where *TriggerType* has a value of MQTT\_FIRST.

In this case trigger messages are normally only generated when a suitable message arrives on the queue, and the queue was previously empty. Under certain circumstances, however, an additional trigger message can be generated with MQTT\_FIRST triggering, even if the queue was not empty. These additional trigger messages are not generated more often than every *TriggerInterval* milliseconds.

The value may be in the range 0 through 999 999 999.

*DeadLetterQName* (MQCFST)

Dead letter (undelivered message) queue name (parameter identifier: MQCA\_DEAD\_LETTER\_Q\_NAME).

Specifies the name of the local queue that is to be used for undelivered messages. Messages are put on this queue if they cannot be routed to their correct destination.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*MaxPriority* (MQCFIN)

Maximum priority (parameter identifier: MQIA\_MAX\_PRIORITY).

The value may be in the range 0-9.

*CommandInputQName* (MQCFST)

Command input queue name (parameter identifier: MQCA\_COMMAND\_INPUT\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

## Inquire Queue Manager (Response)

### *DefXmitQName* (MQCFST)

Default transmission queue name (parameter identifier: MQCA\_DEF\_XMIT\_Q\_NAME).

This is the name of the default transmission queue that is used for the transmission of messages to remote queue managers, if there is no other indication of which transmission queue to use.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### *CodedCharSetId* (MQCFIN)

Coded character set identifier (parameter identifier: MQIA\_CODED\_CHAR\_SET\_ID).

### *MaxHandles* (MQCFIN)

Maximum number of handles (parameter identifier: MQIA\_MAX\_HANDLES).

Specifies the maximum number of handles that any one job can have open at the same time.

The value may be in the range 1 through 999 999 999.

### *MaxUncommittedMsgs* (MQCFIN)

Maximum number of uncommitted messages within a unit of work (parameter identifier: MQIA\_MAX\_UNCOMMITTED\_MSGS).

That is:

- The number of messages that can be retrieved, plus
- The number of messages that can be put on a queue, plus
- Any trigger messages generated within this unit of work

under any one syncpoint. This limit does not apply to messages that are retrieved or put outside syncpoint.

The value may be in the range 1 through 10 000.

### *MaxMsgLength* (MQCFIN)

Maximum message length (parameter identifier: MQIA\_MAX\_MSG\_LENGTH).

### *DistLists* (MQCFIN)

Distribution list support (parameter identifier: MQIA\_DIST\_LISTS).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQDL\_SUPPORTED

Distribution lists supported.

MQDL\_NOT\_SUPPORTED

Distribution lists not supported.

### *SyncPoint* (MQCFIN)

Syncpoint availability (parameter identifier: MQIA\_SYNCPOINT).

The value may be:

MQSP\_AVAILABLE  
Units of work and syncpointing available.

MQSP\_NOT\_AVAILABLE  
Units of work and syncpointing not available.

### *AuthorityEvent* (MQCFIN)

Controls whether authorization (Not Authorized) events are generated (parameter identifier: MQIA\_AUTHORITY\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

### *InhibitEvent* (MQCFIN)

Controls whether inhibit (Inhibit Get and Inhibit Put) events are generated (parameter identifier: MQIA\_INHIBIT\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

### *LocalEvent* (MQCFIN)

Controls whether local error events are generated (parameter identifier: MQIA\_LOCAL\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

### *RemoteEvent* (MQCFIN)

Controls whether remote error events are generated (parameter identifier: MQIA\_REMOTE\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED  
Event reporting disabled.

MQEVR\_ENABLED  
Event reporting enabled.

## Inquire Queue Manager (Response)

### *StartStopEvent* (MQCFIN)

Controls whether start and stop events are generated (parameter identifier: MQIA\_START\_STOP\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED

Event reporting disabled.

MQEVR\_ENABLED

Event reporting enabled.

### *PerformanceEvent* (MQCFIN)

Controls whether performance-related events are generated (parameter identifier: MQIA\_PERFORMANCE\_EVENT).

On OS/400, this is valid for receipt by MQSeries for AS/400 V4R2, or later.

The value may be:

MQEVR\_DISABLED

Event reporting disabled.

MQEVR\_ENABLED

Event reporting enabled.

### *ChannelAutoDef* (MQCFIN)

Controls whether receiver and server-connection channels can be auto-defined (parameter identifier: MQIA\_CHANNEL\_AUTO\_DEF).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQCHAD\_DISABLED

Channel auto-definition disabled.

MQCHAD\_ENABLED

Channel auto-definition enabled.

### *ChannelAutoDefEvent* (MQCFIN)

Controls whether channel auto-definition events are generated (parameter identifier: MQIA\_CHANNEL\_AUTO\_DEF\_EVENT), when a receiver, server-connection, or cluster-sender channel is auto-defined.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

The value may be:

MQEVR\_DISABLED

Event reporting disabled.

MQEVR\_ENABLED

Event reporting enabled.

*ChannelAutoDefExit* (MQCFST)

Channel auto-definition exit name (parameter identifier: MQCA\_CHANNEL\_AUTO\_DEF\_EXIT).

This exit is invoked when an inbound request for an undefined channel is received, if:

1. The channel is a cluster-sender, or
2. Channel auto-definition is enabled (see *ChannelAutoDef*).

This exit is also invoked when a cluster-receiver channel is started. If a nonblank name is defined, this exit is invoked when an inbound request for an undefined cluster-sender channel is received or channel auto-definition is enabled (see *ChannelAutoDef*),

The format of the name is the same as for the *SecurityExit* parameter described in "Change Channel" on page 144.

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, OS/400, Sun Solaris, Windows NT.

*AlterationDate* (MQCFST)

Alteration date (parameter identifier: MQCA\_ALTERATION\_DATE).

The date when the information was last altered.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

*AlterationTime* (MQCFST)

Alteration time (parameter identifier: MQCA\_ALTERATION\_TIME).

The time when the information was last altered.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

*ClusterWorkLoadExit* (MQCFST)

Name of the cluster workload exit (parameter identifier: MQCA\_CLUSTER\_WORKLOAD\_EXIT).

The maximum length of the exit name depends on the environment in which the exit is running. MQ\_EXIT\_NAME\_LENGTH gives the maximum length for the environment in which your application is running. MQ\_MAX\_EXIT\_NAME\_LENGTH gives the maximum for all supported environments.

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

*ClusterWorkLoadData* (MQCFST)

Data passed to the cluster workload exit (parameter identifier: MQCA\_CLUSTER\_WORKLOAD\_DATA).

This parameter is supported in the following environments: AIX, HP-UX, OS/2, Sun Solaris, and Windows NT.

## Inquire Queue Manager (Response)

| *ClusterWorkLoadLength* (MQCFIN)

| Cluster workload length (parameter identifier:  
| MQIA\_CLUSTER\_WORKLOAD\_LENGTH).

| The maximum length of the message passed to the cluster workload exit.

| The value of this attribute must be in the range zero through  
| 999 999 999.

| This parameter is supported in the following environments: AIX, HP-UX,  
| OS/2, Sun Solaris, and Windows NT.

| *QMgrIdentifier* (MQCFST)

| Queue manager identifier (parameter identifier:  
| MQCA\_Q\_MGR\_IDENTIFIER).

| The unique identifier of the queue manager.

| *RepositoryName* (MQCFST)

| Repository name (parameter identifier: MQCA\_REPOSITORY\_NAME).

| The name of a cluster for which this queue manager is to provide a  
| repository service.

| This parameter is supported in the following environments: AIX, HP-UX,  
| OS/2, Sun Solaris, and Windows NT.

| *RepositoryNameList* (MQCFST)

| Repository name list (parameter identifier:  
| MQCA\_REPOSITORY\_NAMELIST).

| The name of a list of clusters for which this queue manager is to provide a  
| repository service.

| This parameter is supported in the following environments: AIX, HP-UX,  
| OS/2, Sun Solaris, and Windows NT.

---

## Inquire Queue Names

The Inquire Queue Names (MQCMD\_INQUIRE\_Q\_NAMES) command inquires a list of queue names that match the generic queue name, and the optional queue type specified.

This PCF is supported on all platforms.

**Required parameters:**

*QName*

**Optional parameters:**

*QType*

### Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

Generic queue names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### Optional parameters

*QType* (MQCFIN)

Queue type (parameter identifier: MQIA\_Q\_TYPE).

If present, this parameter limits the queue names returned to queues of the specified type. If this parameter is not present, queues of all types are eligible. The value may be:

MQQT\_ALL

All queue types.

MQQT\_LOCAL

Local queue.

MQQT\_ALIAS

Alias queue definition.

MQQT\_REMOTE

Local definition of a remote queue.

The following is supported on all platforms, but on OS/400 for receipt by MQSeries for AS/400 V4R2 or later:

MQQT\_MODEL

Model queue definition.

The default value if this parameter is not specified is MQQT\_ALL.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_Q\_TYPE\_ERROR  
Queue type not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

## Inquire Queue Names (Response)

The response to the Inquire Queue Names (MQCMD\_INQUIRE\_Q\_NAMES) command consists of the response header followed by a single parameter structure giving zero or more names that match the specified queue name.

This response is supported on all platforms.

**Always returned:**

*QNames*

**Returned if requested:**

None

## Response data

*QNames* (MQCFSL)

Queue names (parameter identifier: MQCACF\_Q\_NAMES).

---

### Ping Channel

The Ping Channel (MQCMD\_PING\_CHANNEL) command tests a channel by sending data as a special message to the remote message queue manager and checking that the data is returned. The data is generated by the local queue manager.

This command can only be used for channels with a *ChannelType* value of MQCHT\_SENDER, MQCHT\_SERVER, or MQCHT\_CLUSSDR.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

The command is not valid if the channel is running; however it is valid if the channel is stopped or in retry mode.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:**

*ChannelName*

**Optional parameters:**

*DataCount*

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the channel to be tested. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### Optional parameters

*DataCount* (MQCFIN)

Data count (parameter identifier: MQIACH\_DATA\_COUNT).

Specifies the length of the data.

Specify a value in the range 16 through 32 768. The default value is 64 bytes.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_ALLOCATE\_FAILED  
Allocation failed.

MQRCCF\_BIND\_FAILED  
Bind failed.

MQRCCF\_CCSID\_ERROR  
Coded character-set identifier error.

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_IN\_USE  
Channel in use.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_CONFIGURATION\_ERROR  
Configuration error.

MQRCCF\_CONNECTION\_CLOSED  
Connection closed.

MQRCCF\_CONNECTION\_REFUSED  
Connection refused.

MQRCCF\_DATA\_TOO\_LARGE  
Data too large.

MQRCCF\_ENTRY\_ERROR  
Invalid connection name.

MQRCCF\_HOST\_NOT\_AVAILABLE  
Remote system not available.

MQRCCF\_NO\_COMMS\_MANAGER  
Communications manager not available.

MQRCCF\_NO\_STORAGE  
Not enough storage available.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_PING\_DATA\_COMPARE\_ERROR  
Ping Channel command failed.

## Ping Channel

MQRCCF\_PING\_DATA\_COUNT\_ERROR

Data count not valid.

MQRCCF\_PING\_ERROR

Ping error.

MQRCCF\_RECEIVE\_FAILED

Receive failed.

MQRCCF\_RECEIVED\_DATA\_ERROR

Received data error.

MQRCCF\_REMOTE\_QM\_TERMINATING

Remote queue manager terminating.

MQRCCF\_REMOTE\_QM\_UNAVAILABLE

Remote queue manager not available.

MQRCCF\_SEND\_FAILED

Send failed.

MQRCCF\_NO\_STORAGE

Not enough storage available.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

MQRCCF\_TERMINATED\_BY\_SEC\_EXIT

Channel terminated by security exit.

MQRCCF\_UNKNOWN\_REMOTE\_CHANNEL

Remote channel not known.

MQRCCF\_USER\_EXIT\_NOT\_AVAILABLE

User exit not available.

---

## Ping Queue Manager

The Ping Queue Manager (MQCMD\_PING\_Q\_MGR) command tests whether the queue manager and its command server is responsive to commands. If the queue manager is responding a positive reply is returned.

This PCF is supported on all platforms.

**Required parameters:**

None

**Optional parameters:**

None

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

---

### Refresh Cluster

The Refresh Cluster (MQCMD\_REFRESH\_CLUSTER) command discards all locally held cluster information, including any auto-defined channels that are not in doubt, and forces the repository to be rebuilt.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*ClusterName*

### Required parameters

*ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to be refreshed.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR

(2067, X'813') Attribute selector not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

## Reset Channel

The Reset Channel (MQCMD\_RESET\_CHANNEL) command resets the message sequence number for an MQSeries channel with, optionally, a specified sequence number to be used the next time that the channel is started.

This command can be issued to a channel of any type (except MQCHT\_SVRCONN and MQCHT\_CLNTCONN). However, if it is issued to a sender (MQCHT\_SENDER), server (MQCHT\_SERVER), or cluster-sender (MQCHT\_CLUSSDR) channel, the value at both ends (issuing end and receiver or requester end), is reset when the channel is next initiated or resynchronised. The value at both ends is reset to be equal.

If the command is issued to a receiver (MQCHT\_RECEIVER), requester (MQCHT\_REQUESTER), or cluster-receiver (MQCHT\_CLUSRCVR) channel, the value at the other end is *not* reset as well; this must be done separately if necessary.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*

**Optional parameters:**

*MsgSeqNumber*

## Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the channel to be reset. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

## Optional parameters

*MsgSeqNumber* (MQCFIN)

Message sequence number (parameter identifier: MQIACH\_MSG\_SEQUENCE\_NUMBER).

Specifies the new message sequence number.

The value may be in the range 1-999 999 999. The default value is one.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFIN\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_MSG\_SEQ\_NUMBER\_ERROR  
Message sequence number not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Reset Cluster

The Reset Cluster (MQCMD\_RESET\_CLUSTER) command forces a queue manager to leave a cluster.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*ClusterName, QMgrName, Action*

## Required parameters

*ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster to be reset.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

*QMgrName* (MQCFST)

Queue manager name (parameter identifier: MQCA\_Q\_MGR\_NAME).

The name of the queue manager to be forcibly removed.

The maximum length of the string is MQ\_Q\_MGR\_NAME\_LENGTH.

*Action* (MQCFIN)

Action (parameter identifier: MQIACF\_ACTION).

Specifies the action to take place. This can be requested only by a repository queue manager.

The value may be:

MQACT\_FORCE\_REMOVE

Requests that a queue manager is forcibly removed from a cluster.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR

(2067, X'813') Attribute selector not valid.

MQRCCF\_ACTION\_VALUE\_ERROR

Value not valid.

MQRCCF\_CFIN\_DUPLICATE\_VALUE

Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

## Reset Cluster

	MQRCCF_CFST_LENGTH_ERROR
	Structure length not valid.
	MQRCCF_CFST_PARM_ID_ERROR
	Parameter identifier not valid.
	MQRCCF_CFST_STRING_LENGTH_ERR
	String length not valid.
	MQRCCF_PARM_COUNT_TOO_BIG
	Parameter count too big.
	MQRCCF_PARM_COUNT_TOO_SMALL
	Parameter count too small.
	MQRCCF_STRUCTURE_TYPE_ERROR
	Structure type not valid.

## Reset Queue Statistics

The Reset Queue Statistics (MQCMD\_RESET\_Q\_STATS) command reports the performance data for a queue and then resets the performance data.

This PCF is not supported if you are using MQSeries for Tandem NSK version 2.2.

Performance data is maintained for each local queue (including transmission queues). It is reset at the following times:

- When a Reset Queue Statistics command is issued
- When the queue manager is restarted

**Required parameters:**

*QName*

**Optional parameters:**

None

## Required parameters

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The name of the local queue to be tested and reset.

Generic queue names are supported. A generic name is a character string followed by an asterisk (\*), for example ABC\*, and it selects all objects having names that start with the selected character string. An asterisk on its own matches all possible names.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_UNKNOWN\_OBJECT\_NAME  
(2085, X'825') Unknown object name.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

## Reset Queue Statistics

MQRCCF\_Q\_WRONG\_TYPE

Action not valid for the queue of specified type.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

---

## Reset Queue Statistics (Response)

The response to the Reset Queue Statistics (MQCMD\_RESET\_Q\_STATS) command consists of the response header followed by the *QName* structure and the attribute parameter structures shown below. If a generic queue name was specified, one such message is generated for each queue found.

This response is supported on all platforms.

**Always returned:**

*QName, TimeSinceReset, HighQDepth, MsgEnqCount, MsgDeqCount*

## Response data

*QName* (MQCFST)

Queue name (parameter identifier: MQCA\_Q\_NAME).

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

*TimeSinceReset* (MQCFIN)

Time since statistics reset in seconds (parameter identifier: MQIA\_TIME\_SINCE\_RESET).

*HighQDepth* (MQCFIN)

Maximum number of messages on a queue (parameter identifier: MQIA\_HIGH\_Q\_DEPTH).

This count is the peak value of the *CurrentQDepth* local queue attribute since the last reset. The *CurrentQDepth* is incremented during an MQPUT call, and during backout of an MQGET call, and is decremented during a (nonbrowse) MQGET call, and during backout of an MQPUT call.

*MsgEnqCount* (MQCFIN)

Number of messages enqueued (parameter identifier: MQIA\_MSG\_ENQ\_COUNT).

This count includes messages that have been put to the queue, but have not yet been committed. The count is not decremented if the put is subsequently backed out.

*MsgDeqCount* (MQCFIN)

Number of messages dequeued (parameter identifier: MQIA\_MSG\_DEQ\_COUNT).

This count includes messages that have been successfully retrieved (with a nonbrowse MQGET) from the queue, even though the MQGET has not yet been committed. The count is not decremented if the MQGET is subsequently backed out.

---

### Resolve Channel

The Resolve Channel (MQCMD\_RESOLVE\_CHANNEL) command requests a channel to commit or back out in-doubt messages.

This command is used when the other end of a link fails during the confirmation stage, and for some reason it is not possible to reestablish the connection. In this situation the sending end remains in an in-doubt state, as to whether or not the messages were received. Any outstanding units of work must be resolved using Resolve Channel with either backout or commit.

Care must be exercised in the use of this command. If the resolution specified is not the same as the resolution at the receiving end, messages can be lost or duplicated.

This command can only be used for channels with a *ChannelType* value of MQCHT\_SENDER, MQCHT\_SERVER, or MQCHT\_CLUSSDR.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*, *InDoubt*

**Optional parameters:**

None

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the channel to be resolved. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

*InDoubt* (MQCFIN)

In-doubt resolution (parameter identifier: MQIACH\_IN\_DOUBT).

Specifies whether to commit or back out the in-doubt messages.

The value may be:

MQIDO\_COMMIT

Commit.

MQIDO\_BACKOUT

Backout.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_CHANNEL\_NOT\_FOUND

Channel not found.

MQRCCF\_INDOUBT\_VALUE\_ERROR

In-doubt value not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

MQRCCF\_PARM\_SEQUENCE\_ERROR

Parameter sequence not valid.

---

### Resume Queue Manager Cluster

The Resume Queue Manager Cluster (MQCMD\_RESUME\_Q\_MGR\_CLUSTER) command informs other queue managers in a cluster that the local queue manager is again available for processing, and can be sent messages.

It reverses the action of the Suspend Queue Manager Cluster (MQCMD\_SUSPEND\_Q\_MGR\_CLUSTER) command.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*ClusterName*, or *ClusterNamelist*

**Optional parameters:**

None

### Required parameters

*ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster for which availability is to be resumed.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

*ClusterNamelist* (MQCFST)

Cluster Namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name of the namelist specifying a list of clusters for which availability is to be resumed.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR

(2067, X'813') Attribute selector not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_CLUSTER\_NAME\_CONFLICT

Cluster name conflict.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

| MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
| Parameter count too small.  
| MQRCCF\_STRUCTURE\_TYPE\_ERROR  
| Structure type not valid.

---

### Start Channel

The Start Channel (MQCMD\_START\_CHANNEL) command starts an MQSeries channel.

Client connections on MQSeries Version 5, or later, products cannot initiate this command.

This command can be issued to a channel of any type (except MQCHT\_CLNTCONN). If, however, it is issued to a channel with a *ChannelType* value of MQCHT\_RECEIVER, MQCHT\_SVRCONN, or MQCHT\_CLUSRCVR, the only action is to enable the channel, not start it.

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*

**Optional parameters:**

None

### Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the channel to be started. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

MQRCCF\_CHANNEL\_INDOUBT

Channel in-doubt.

MQRCCF\_CHANNEL\_IN\_USE  
Channel in use.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_CHANNEL\_TYPE\_ERROR  
Channel type not valid.

MQRCCF\_MQCONN\_FAILED  
MQCONN call failed.

MQRCCF\_MQINQ\_FAILED  
MQINQ call failed.

MQRCCF\_MQOPEN\_FAILED  
MQOPEN call failed.

MQRCCF\_NOT\_XMIT\_Q  
Queue is not a transmission queue.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Start Channel Initiator

The Start Channel Initiator (MQCMD\_START\_CHANNEL\_INIT) command starts an MQSeries channel initiator.

This PCF is not supported if you are using MQSeries for Windows Version 2.1.

**Required parameters:**

*InitiationQName*

**Optional parameters:**

None

### Required parameters

*InitiationQName* (MQCFST)

Initiation queue name (parameter identifier: MQCA\_INITIATION\_Q\_NAME).

The name of the initiation queue for the channel initiation process. That is, the initiation queue that is specified in the definition of the transmission queue.

The maximum length of the string is MQ\_Q\_NAME\_LENGTH.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_MQCONN\_FAILED  
MQCONN call failed.

MQRCCF\_MQGET\_FAILED  
MQGET call failed.

MQRCCF\_MQOPEN\_FAILED  
MQOPEN call failed.

MQRCCF\_OBJECT\_NAME\_ERROR  
Object name not valid.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

---

### Start Channel Listener

The Start Channel Listener (MQCMD\_START\_CHANNEL\_LISTENER) command starts an MQSeries TCP listener.

This PCF is supported if you are using MQSeries for AS/400 V4R2, or later, MQSeries for OS/2 Warp V5, or MQSeries for Windows NT V5, only.

This command is valid only for TCP transmission protocols.

**Required parameters:**

None

**Optional parameters:**

*TransportType*

### Optional parameters

*TransportType* (MQCFIN)

Transmission protocol type (parameter identifier: MQIACH\_XMIT\_PROTOCOL\_TYPE).

The value may be:

MQXPT\_LU62

LU 6.2.

MQXPT\_TCP

TCP.

MQXPT\_NETBIOS

NetBIOS.

MQXPT\_SPX

SPX.

MQXPT\_UDP

UDP.

### Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_COMMS\_LIBRARY\_ERROR

Communications protocol library error.

MQRCCF\_LISTENER\_NOT\_STARTED

Listener not started.

MQRCCF\_NETBIOS\_NAME\_ERROR

NetBIOS listener name error.

MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

## Stop Channel

The Stop Channel (MQCMD\_STOP\_CHANNEL) command stops an MQSeries channel.

Client connections on MQSeries Version 5, or later, products cannot initiate this command.

This command can be issued to a channel of any type (except MQCHT\_CLNTCONN).

Where there is both a locally defined channel and an auto-defined cluster-sender channel of the same name, the command applies to the locally defined channel.

If there is no locally defined channel but more than one auto-defined cluster-sender channel, the command applies to the last channel added to the repository on the local queue manager.

This PCF is supported on all platforms.

**Required parameters:**

*ChannelName*

**Optional parameters:**

*Quiesce*

## Required parameters

*ChannelName* (MQCFST)

Channel name (parameter identifier: MQCACH\_CHANNEL\_NAME).

The name of the channel to be stopped. The maximum length of the string is MQ\_CHANNEL\_NAME\_LENGTH.

## Optional parameters

*Quiesce* (MQCFIN)

Quiesce channel (parameter identifier: MQIACF\_QUIESCE).

Specifies whether the channel should be quiesced or stopped immediately. If this parameter is not present the channel **is** quiesced. The value may be:

MQQO\_YES

Quiesce the channel.

MQQO\_NO

Do not quiesce the channel.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

## Stop Channel

MQRCCF\_CFIN\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFIN\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_DUPLICATE\_PARM  
Duplicate parameter.

MQRCCF\_CFST\_LENGTH\_ERROR  
Structure length not valid.

MQRCCF\_CFST\_PARM\_ID\_ERROR  
Parameter identifier is not valid.

MQRCCF\_CFST\_STRING\_LENGTH\_ERR  
String length not valid.

MQRCCF\_CHANNEL\_DISABLED  
Channel disabled.

MQRCCF\_CHANNEL\_NOT\_ACTIVE  
Channel not active.

MQRCCF\_CHANNEL\_NOT\_FOUND  
Channel not found.

MQRCCF\_MQCONN\_FAILED  
MQCONN call failed.

MQRCCF\_MQOPEN\_FAILED  
MQOPEN call failed.

MQRCCF\_MQSET\_FAILED  
MQSET call failed.

MQRCCF\_PARM\_COUNT\_TOO\_BIG  
Parameter count too big.

MQRCCF\_PARM\_COUNT\_TOO\_SMALL  
Parameter count too small.

MQRCCF\_QUIESCE\_VALUE\_ERROR  
Quiesce value not valid.

MQRCCF\_STRUCTURE\_TYPE\_ERROR  
Structure type not valid.

## Suspend Queue Manager Cluster

The Suspend Queue Manager Cluster (MQCMD\_SUSPEND\_Q\_MGR\_CLUSTER) command informs other queue managers in a cluster that the local queue manager is not available for processing, and cannot be sent messages.

Its action can be reversed by the Resume Queue Manager Cluster (MQCMD\_RESUME\_Q\_MGR\_CLUSTER) command.

This PCF is supported if you are using AIX, HP-UX, OS/2, Sun Solaris, and Windows NT only.

**Required parameters:**

*ClusterName* or *ClusterNameList*

**Optional parameters:**

*Quiesce*

## Required parameters

*ClusterName* (MQCFST)

Cluster name (parameter identifier: MQCA\_CLUSTER\_NAME).

The name of the cluster for which availability is to be suspended.

The maximum length of the string is MQ\_CLUSTER\_NAME\_LENGTH.

*ClusterNameList* (MQCFST)

Cluster Namelist (parameter identifier: MQCA\_CLUSTER\_NAMELIST).

The name of the namelist specifying a list of clusters for which availability is to be suspended.

## Optional parameters

*Quiesce* (MQCFIN)

Quiesce (parameter identifier: MQIACF\_QUIESCE).

Specifies how the suspension of availability is to take effect.

The value may be:

MQQO\_NO

All inbound and outbound channels to other queue managers in the cluster are stopped forcibly.

MQQO\_YES

Other queue managers in the cluster are advised that the local queue manager should not be sent further messages.

## Error codes

In addition to the values for any command shown on page 140, for this command the following may be returned in the response format header:

*Reason* (MQLONG)

The value may be:

MQRC\_SELECTOR\_ERROR

(2067, X'813') Attribute selector not valid.

## Suspend Queue Manager Cluster

	MQRCCF_CFST_DUPLICATE_PARM
	Duplicate parameter.
	MQRCCF_CFST_LENGTH_ERROR
	Structure length not valid.
	MQRCCF_CFST_PARM_ID_ERROR
	Parameter identifier not valid.
	MQRCCF_CFST_STRING_LENGTH_ERR
	String length not valid.
	MQRCCF_CLUSTER_NAME_CONFLICT
	Cluster name conflict.
	MQRCCF_PARM_COUNT_TOO_BIG
	Parameter count too big.
	MQRCCF_PARM_COUNT_TOO_SMALL
	Parameter count too small.
	MQRCCF_STRUCTURE_TYPE_ERROR
	Structure type not valid.

---

## Chapter 9. Structures used for commands and responses

Commands, responses, and events are of the form:

- PCF header (MQCFH) structure, (described on page 388) followed by
- Zero or more parameter structures. Each of these is one of the following:
  - PCF integer parameter (MQCFIN, page 395)
  - PCF string parameter (MQCFST, page 397)
  - PCF integer list parameter (MQCFIL, page 400)
  - PCF string list parameter (MQCFSL, page 403)

This chapter defines these parameter structures, and includes:

- “How the structures are shown”
- “Usage notes” on page 388
- “MQCFH - PCF header” on page 388
- “MQCFIN - PCF integer parameter” on page 395
- “MQCFST - PCF string parameter” on page 397
- “MQCFIL - PCF integer list parameter” on page 400
- “MQCFSL - PCF string list parameter” on page 403

---

### How the structures are shown

The structures are described in a language-independent form. The declarations are shown in the following programming languages:

- C
- COBOL
- PL/I
- S/390 assembler
- Visual Basic

### Data types

For each field of the structure the data type is given in brackets after the field name. These are the elementary data types described in Chapter 1, “Data type descriptions - elementary” in the *MQSeries Application Programming Reference* manual.

### Initial values and default structures

The *initial value* of each field is shown under its description. This is the value of the field in the *default structure*.

The default structures are supplied in the following header files:

C	CMQCFC	PL/I	CMQCFP
<b>Assembler</b>	CMQCFA CMQCFINA CMQCFILA CMQCFSTA CMQCFSLA CMQCFHA	<b>Visual Basic</b>	CMQB CMQFB CMQXB
<b>COBOL</b>	CMQCFV CMQCFHL CMQCFHV CMQCFINL CMQCFINV CMQCFSL CMQCFSLV CMQCFSTL CMQCFSTV CMQCFILL CMQCFILV		

## Usage notes

If all of the strings in a PCF message have the same coded character-set identifier, the *CodedCharSetId* field in the message descriptor MQMD should be set to that identifier when the message is put, and the *CodedCharSetId* fields in the MQCFST and MQCFSL structures within the message should be set to MQCCSI\_DEFAULT.

If some of the strings in the message have different character-set identifiers, the *CodedCharSetId* field in MQMD should be set to MQCCSI\_EMBEDDED when the message is put, and the *CodedCharSetId* fields in the MQCFST and MQCFSL structures within the message should be set to the identifiers that apply.

This enables conversions of the strings within the message, to the *CodedCharSetId* value in the MQMD specified on the MQGET call, if the MQGMO\_CONVERT option is also specified.

**Note:** If you request conversion of the internal strings in the message, the conversion will occur only if the value of the *CodedCharSetId* field in the MQMD of the message is different from the *CodedCharSetId* field of the MQMD specified on the MQGET call.

Do not specify MQCCSI\_EMBEDDED in MQMD when the message is put, with MQCCSI\_DEFAULT in the MQCFST or MQCFSL structures within the message, as this will prevent conversion of the message.

## MQCFH - PCF header

The MQCFH structure describes the information that is present at the start of the message data of a command message, or a response to a command message. In either case, the message descriptor *Format* field is MQFMT\_ADMIN.

The PCF structures are also used for event messages. In this case the message descriptor *Format* field is MQFMT\_EVENT.

The PCF structures can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT\_PCF (see “Message descriptor for a PCF command” on page 131). Also in this case, not all of the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength* and *ParameterCount* fields to the values appropriate to the data.

*Type* (MQLONG)

Structure type.

This indicates the content of the message. The following are valid:

MQCFT\_COMMAND

Message is a command.

MQCFT\_RESPONSE

Message is a response to a command.

MQCFT\_EVENT

Message is reporting an event.

The initial value of this field is MQCFT\_COMMAND.

*StrucLength* (MQLONG)

Structure length.

This is the length in bytes of the MQCFH structure. The value must be:

MQCFH\_STRUC\_LENGTH

Length of command format header structure.

The initial value of this field is MQCFH\_STRUC\_LENGTH.

*Version* (MQLONG)

Structure version number.

The value must be:

MQCFH\_VERSION\_1

Version number for command format header structure.

The following constant specifies the version number of the current version:

MQCFH\_CURRENT\_VERSION

Current version of command format header structure.

The initial value of this field is MQCFH\_VERSION\_1.

*Command* (MQLONG)

Command identifier.

For a command message, this identifies the function to be performed. For a response message, it identifies the command to which this is the reply.

The following are valid:

MQCMD\_CHANGE\_Q\_MGR

Change queue manager.

MQCMD\_INQUIRE\_Q\_MGR

Inquire queue manager.

MQCMD\_CHANGE\_PROCESS

Change process.

MQCMD\_COPY\_PROCESS  
Copy process.

MQCMD\_CREATE\_PROCESS  
Create process.

MQCMD\_DELETE\_PROCESS  
Delete process.

MQCMD\_INQUIRE\_PROCESS  
Inquire process.

|  
| MQCMD\_CHANGE\_NAMELIST  
Change namelist.

|  
| MQCMD\_COPY\_NAMELIST  
Copy namelist.

|  
| MQCMD\_CREATE\_NAMELIST  
Create namelist.

|  
| MQCMD\_DELETE\_NAMELIST  
Delete namelist.

|  
| MQCMD\_INQUIRE\_NAMELIST  
Inquire namelist.

MQCMD\_CHANGE\_Q  
Change queue.

MQCMD\_CLEAR\_Q  
Clear queue.

MQCMD\_COPY\_Q  
Copy queue.

MQCMD\_CREATE\_Q  
Create queue.

MQCMD\_DELETE\_Q  
Delete queue.

MQCMD\_INQUIRE\_Q  
Inquire queue.

MQCMD\_RESET\_Q\_STATS  
Reset queue statistics.

MQCMD\_INQUIRE\_Q\_NAMES  
Inquire queue names.

MQCMD\_INQUIRE\_PROCESS\_NAMES  
Inquire process-definition names.

MQCMD\_INQUIRE\_CHANNEL\_NAMES  
Inquire channel names.

|  
| MQCMD\_INQUIRE\_NAMELIST\_NAMES  
Inquire namelist names.

MQCMD\_CHANGE\_CHANNEL  
Change channel.

MQCMD\_COPY\_CHANNEL  
Copy channel.

MQCMD\_CREATE\_CHANNEL  
Create channel.

MQCMD\_DELETE\_CHANNEL  
Delete channel.

MQCMD\_INQUIRE\_CHANNEL  
Inquire channel.

MQCMD\_PING\_CHANNEL  
Ping channel.

MQCMD\_RESET\_CHANNEL  
Reset channel.

MQCMD\_START\_CHANNEL  
Start channel.

MQCMD\_STOP\_CHANNEL  
Stop channel.

MQCMD\_START\_CHANNEL\_INIT  
Start channel initiator.

MQCMD\_START\_CHANNEL\_LISTENER  
Start channel listener.

MQCMD\_ESCAPE  
Escape.

MQCMD\_RESOLVE\_CHANNEL  
Resolve channel.

MQCMD\_PING\_Q\_MGR  
Ping queue manager.

MQCMD\_INQUIRE\_CHANNEL\_STATUS  
Inquire channel status.

MQCMD\_Q\_MGR\_EVENT  
Queue manager event.

MQCMD\_PERFM\_EVENT  
Performance event.

MQCMD\_CHANNEL\_EVENT  
Channel event.

| MQCMD\_INQUIRE\_CLUSTER\_Q\_MGR  
| Inquire cluster queue manager.

| MQCMD\_RESUME\_Q\_MGR\_CLUSTER  
| Resume queue manager cluster.

| MQCMD\_SUSPEND\_Q\_MGR\_CLUSTER  
| Suspend queue manager cluster.

| MQCMD\_REFRESH\_CLUSTER  
| Refresh cluster.

| MQCMD\_RESET\_CLUSTER  
| Reset cluster.

The initial value of this field is 0.

*MsgSeqNumber* (MQLONG)

Message sequence number.

This is the sequence number of the message within a group of related messages. For a command, this field must have the value one (because a command is always contained within a single message). For a response, the field has the value one for the first (or only) response to a command, and increases by one for each successive response to that command.

The last (or only) message in a group has the MQCFC\_LAST flag set in the *Control* field.

The initial value of this field is 1.

*Control* (MQLONG)

Control options.

The following are valid:

## MQCFC\_LAST

Last message in the group.

For a command, this value must always be set.

## MQCFC\_NOT\_LAST

Not the last message in the group.

The initial value of this field is MQCFC\_LAST.

*CompCode* (MQLONG)

Completion code.

This field is meaningful only for a response; its value is not significant for a command. The following are possible:

## MQCC\_OK

Command completed successfully.

## MQCC\_WARNING

Command completed with warning.

## MQCC\_FAILED

Command failed.

## MQCC\_UNKNOWN

Whether command succeeded is not known.

The initial value of this field is MQCC\_OK.

*Reason* (MQLONG)

Reason code qualifying completion code.

This field is meaningful only for a response; its value is not significant for a command.

The possible reason codes that could be returned in response to a command are listed at the end of each command format definition in Chapter 8, "Definitions of the Programmable Command Formats" on page 139. The reason codes are listed in alphabetic order, with complete descriptions in Appendix A, "Error codes" on page 535.

The initial value of this field is MQRC\_NONE.

*ParameterCount* (MQLONG)

Count of parameter structures.

This is the number of parameter structures (MQCFIL, MQCFIN, MQCFSL, and MQCFST) that follow the MQCFH structure. The value of this field is zero or greater.

The initial value of this field is 0.

Table 18. Initial values of fields in MQCFH

Field name	Name of constant	Value of constant
<i>Type</i>	MQCFT_COMMAND	1
<i>StrucLength</i>	MQCFH_STRUC_LENGTH	36
<i>Version</i>	MQCFH_VERSION_1	1
<i>Command</i>	None	0
<i>MsgSeqNumber</i>	None	1
<i>Control</i>	MQCFC_LAST	1
<i>CompCode</i>	MQCC_OK	0
<i>Reason</i>	MQRC_NONE	0
<i>ParameterCount</i>	None	0

**Note:**

In the C programming language, the macro variable MQCFH\_DEFAULT contains the values listed above. It can be used in the following way to provide initial values for the fields in the structure:

```
MQCFH MyCFH = {MQCFH_DEFAULT};
```

## C language declaration

```
typedef struct tagMQCFH {
    MQLONG Type;           /* Structure type */
    MQLONG StrucLength;    /* Structure length */
    MQLONG Version;       /* Structure version number */
    MQLONG Command;       /* Command identifier */
    MQLONG MsgSeqNumber;  /* Message sequence number */
    MQLONG Control;       /* Control options */
    MQLONG CompCode;      /* Completion code */
    MQLONG Reason;        /* Reason code qualifying completion code */
    MQLONG ParameterCount; /* Count of parameter structures */
} MQCFH;
```

## COBOL language declaration

```
** MQCFH structure
10 MQCFH.
** Structure type
15 MQCFH-TYPE          PIC S9(9) BINARY.
** Structure length
15 MQCFH-STRULENGTH   PIC S9(9) BINARY.
** Structure version number
15 MQCFH-VERSION      PIC S9(9) BINARY.
** Command identifier
15 MQCFH-COMMAND      PIC S9(9) BINARY.
** Message sequence number
```

## MQCFH

```
15 MQCFH-MSGSEQNUMBER PIC S9(9) BINARY.
** Control options
15 MQCFH-CONTROL PIC S9(9) BINARY.
** Completion code
15 MQCFH-COMPCODE PIC S9(9) BINARY.
** Reason code qualifying completion code
15 MQCFH-REASON PIC S9(9) BINARY.
** Count of parameter structures
15 MQCFH-PARAMETERCOUNT PIC S9(9) BINARY.
```

## PL/I language declaration (AIX, OS/2, OS/390, and Windows NT)

```
dc1
1 MQCFH based,
3 Type fixed bin(31), /* Structure type */
3 StrucLength fixed bin(31), /* Structure length */
3 Version fixed bin(31), /* Structure version number */
3 Command fixed bin(31), /* Command identifier */
3 MsgSeqNumber fixed bin(31), /* Message sequence number */
3 Control fixed bin(31), /* Control options */
3 CompCode fixed bin(31), /* Completion code */
3 Reason fixed bin(31), /* Reason code qualifying completion
code */
3 ParameterCount fixed bin(31); /* Count of parameter structures */
```

## System/390 assembler-language declaration (OS/390 only)

```
MQCFH DSECT
MQCFH_TYPE DS F Structure type
MQCFH_STRUCLNGTH DS F Structure length
MQCFH_VERSION DS F Structure version number
MQCFH_COMMAND DS F Command identifier
MQCFH_MSGSEQNUMBER DS F Message sequence number
MQCFH_CONTROL DS F Control options
MQCFH_COMPCODE DS F Completion code
MQCFH_REASON DS F Reason code qualifying
* completion code
MQCFH_PARAMETERCOUNT DS F Count of parameter
* structures
MQCFH_LENGTH EQU *-MQCFH Length of structure
ORG MQCFH
MQCFH_AREA DS CL(MQCFH_LENGTH)
```

## Visual Basic language declaration (Windows only)

```
| Type MQCFH
| Type As Long 'Structure type
| StrucLength As Long 'Structure length
| Version As Long 'Structure version number
| Command As Long 'Command identifier
| MsgSeqNumber As Long 'Message sequence number
| Control As Long 'Control options
| CompCode As Long 'Completion code
| Reason As Long 'Reason code qualifying completion code
| ParameterCount As Long 'Count of parameter structures
| End Type
|
| Global MQCFH_DEFAULT As MQCFH
```

---

## MQCFIN - PCF integer parameter

The MQCFIN structure describes an integer parameter in a message that is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT\_ADMIN.

The MQCFIN structure is also used for event messages. In this case the message descriptor *Format* field is MQFMT\_EVENT.

The MQCFIN structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT\_PCF (see “Message descriptor for a PCF command” on page 131). Also in this case, not all of the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *Value* field to the value appropriate to the data.

### *Type* (MQLONG)

Structure type.

This indicates that the structure is a MQCFIN structure describing an integer parameter. The value must be:

MQCFT\_INTEGER

Structure defining an integer.

The initial value of this field is MQCFT\_INTEGER.

### *StructLength* (MQLONG)

Structure length.

This is the length in bytes of the MQCFIN structure. The value must be:

MQCFIN\_STRUC\_LENGTH

Length of command format integer-parameter structure.

The initial value of this field is MQCFIN\_STRUC\_LENGTH.

### *Parameter* (MQLONG)

Parameter identifier.

This identifies the parameter whose value is contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see page 388 for details.

The initial value of this field is 0.

### *Value* (MQLONG)

Parameter value.

This is the value of the parameter identified by the *Parameter* field.

The initial value of this field is 0.

Table 19. Initial values of fields in MQCFIN		
Field name	Name of constant	Value of constant
Type	MQCFT_INTEGER	3
StrucLength	MQCFIN_STRUC_LENGTH	16
Parameter	None	0
Value	None	0
<p><b>Note:</b></p> <p>In the C programming language, the macro variable MQCFIN_DEFAULT contains the values listed above. It can be used in the following way to provide initial values for the fields in the structure:</p> <pre>MQCFIN MyCFIN = {MQCFIN_DEFAULT};</pre>		

## C language declaration

```
typedef struct tagMQCFIN {
    MQLONG Type;          /* Structure type */
    MQLONG StrucLength;  /* Structure length */
    MQLONG Parameter;    /* Parameter identifier */
    MQLONG Value;        /* Parameter value */
} MQCFIN;
```

## COBOL language declaration

```
** MQCFIN structure
10 MQCFIN.
** Structure type
15 MQCFIN-TYPE PIC S9(9) BINARY.
** Structure length
15 MQCFIN-STRULENGTH PIC S9(9) BINARY.
** Parameter identifier
15 MQCFIN-PARAMETER PIC S9(9) BINARY.
** Parameter value
15 MQCFIN-VALUE PIC S9(9) BINARY.
```

## PL/I language declaration (AIX, OS/2, OS/390, and Windows NT)

```
dcl
1 MQCFIN based,
3 Type fixed bin(31), /* Structure type */
3 StrucLength fixed bin(31), /* Structure length */
3 Parameter fixed bin(31), /* Parameter identifier */
3 Value fixed bin(31); /* Parameter value */
```

## System/390 assembler-language declaration (OS/390 only)

```
MQCFIN DSECT
MQCFIN_TYPE DS F Structure type
MQCFIN_STRULENGTH DS F Structure length
MQCFIN_PARAMETER DS F Parameter identifier
MQCFIN_VALUE DS F Parameter value
MQCFIN_LENGTH EQU *-MQCFIN Length of structure
MQCFIN_ORG ORG MQCFIN
MQCFIN_AREA DS CL(MQCFIN_LENGTH)
```

## Visual Basic language declaration (Windows only)

```

Type MQCFIN
    Type As Long           ' Structure type
    StrucLength As Long    ' Structure length
    Parameter As Long      ' Parameter identifier
    Value As Long          ' Parameter value
End Type

Global MQCFIN_DEFAULT As MQCFIN

```

---

## MQCFST - PCF string parameter

The MQCFST structure describes a string parameter in a message that is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT\_ADMIN.

The MQCFST structure is also used for event messages. In this case the message descriptor *Format* field is MQFMT\_EVENT.

The MQCFST structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT\_PCF (see “Message descriptor for a PCF command” on page 131). Also in this case, not all of the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength*, *StringLength*, and *String* fields to the values appropriate to the data.

The structure ends with a variable-length character string; see the *String* field below for further details.

See “Usage notes” on page 388 for further information on how the structure should be used.

### *Type* (MQLONG)

Structure type.

This indicates that the structure is an MQCFST structure describing a string parameter. The value must be:

MQCFT\_STRING

Structure defining a string.

The initial value of this field is MQCFT\_STRING.

### *StrucLength* (MQLONG)

Structure length.

This is the length in bytes of the MQCFST structure, including the variable-length string at the end of the structure (the *String* field). The length must be a multiple of four, and must be sufficient to contain the string; any bytes between the end of the string and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *String* field:

MQCFST\_STRUC\_LENGTH\_FIXED

Length of fixed part of command format string-parameter structure.

The initial value of this field is MQCFST\_STRUC\_LENGTH\_FIXED.

*Parameter* (MQLONG)

Parameter identifier.

This identifies the parameter whose value is contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see page 388 for details.

The initial value of this field is 0.

*CodedCharSetId* (MQLONG)

Coded character set identifier.

This specifies the coded character set identifier of the data in the *String* field. The following special value can be used:

MQCCSI\_DEFAULT

Default coded character set identifier.

Character data is in the character set defined by the *CodedCharSetId* field in the message descriptor MQMD.

The initial value of this field is MQCCSI\_DEFAULT.

*StringLength* (MQLONG)

Length of string.

This is the length in bytes of the data in the *String* field; it must be zero or greater. This length need not be a multiple of four.

The initial value of this field is 0.

*String* (MQCHAR×*StringLength*)

String value.

This is the value of the parameter identified by the *Parameter* field:

- In MQFMT\_ADMIN command messages, if the specified string is shorter than the standard length of the parameter, the omitted characters are assumed to be blanks. If the specified string is longer than the standard length, those characters in excess of the standard length must be blanks.
- In MQFMT\_ADMIN response messages, string parameters are returned padded with blanks to the standard length of the parameter.
- In MQFMT\_EVENT messages, trailing blanks are omitted from string parameters (that is, the string may be shorter than the defined length of the parameter).

In all cases, *StringLength* gives the length of the string actually present in the message.

The string can contain any characters that are in the character set defined by *CodedCharSetId*, and that are valid for the parameter identified by *Parameter*.

**Note:** In the MQCFST structure, a null character in the string is treated as normal data, and does not act as a delimiter for the string. This means that when a receiving application reads a MQFMT\_PCF, MQFMT\_EVENT, or MQFMT\_ADMIN message, the receiving application receives all of the data specified by the sending

application. The data may, of course, have been converted between character sets (for example, by the receiving application specifying the MQGMO\_CONVERT option on the MQGET call).

In contrast, when the queue manager reads an MQFMT\_ADMIN message from the command input queue, the queue manager processes the data as though it had been specified on an MQI call. This means that within the string, the first null and the characters following it (up to the end of the string) are treated as blanks.

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure should be allocated dynamically, and pointers used to address the fields within it.
- For the COBOL, PL/I, and System/390 assembler programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, the user should include MQCFST in a larger structure, and declare additional field(s) following MQCFST, to represent the *String* field as required.

In C, the initial value of this field is the null string.

<i>Table 20. Initial values of fields in MQCFST</i>		
<b>Field name</b>	<b>Name of constant</b>	<b>Value of constant</b>
<i>Type</i>	MQCFST_STRING	4
<i>StrucLength</i>	MQCFST_STRUC_LENGTH_FIXED	20
<i>Parameter</i>	None	0
<i>CodedCharSetId</i>	MQCCSI_DEFAULT	0
<i>StringLength</i>	None	0
<i>String</i> (present only in C)	None	Null string

**Notes:**

1. In the C programming language, the macro variable MQCFST\_DEFAULT contains the values listed above. It can be used in the following way to provide initial values for the fields in the structure:

```

struct {
    MQCFST Hdr;
    MQCHAR Data[99];
} MyCFST = {MQCFST_DEFAULT};

```

## C language declaration

```

typedef struct tagMQCFST {
    MQLONG Type;           /* Structure type */
    MQLONG StrucLength;    /* Structure length */
    MQLONG Parameter;      /* Parameter identifier */
    MQLONG CodedCharSetId; /* Coded character set identifier */
    MQLONG StringLength;   /* Length of string */
    MQCHAR String[1];     /* String value - first
                           character */
} MQCFST;

```

## COBOL language declaration

```

**  MQCFST structure
  10 MQCFST.
**  Structure type
  15 MQCFST-TYPE          PIC S9(9) BINARY.
**  Structure length
  15 MQCFST-STRUCLength  PIC S9(9) BINARY.
**  Parameter identifier
  15 MQCFST-PARAMETER    PIC S9(9) BINARY.
**  Coded character set identifier
  15 MQCFST-CODEDCHARSETID PIC S9(9) BINARY.
**  Length of string
  15 MQCFST-STRINGLENGTH PIC S9(9) BINARY.

```

## PL/I language declaration (AIX, OS/2, OS/390, and Windows NT)

```

dcl
  1 MQCFST based,
  3 Type          fixed bin(31), /* Structure type */
  3 StrucLength   fixed bin(31), /* Structure length */
  3 Parameter     fixed bin(31), /* Parameter identifier */
  3 CodedCharSetId fixed bin(31), /* Coded character set identifier */
  3 StringLength  fixed bin(31); /* Length of string */

```

## System/390 assembler-language declaration (OS/390 only)

MQCFST	DSECT	
MQCFST_TYPE	DS F	Structure type
MQCFST_STRUCLength	DS F	Structure length
MQCFST_PARAMETER	DS F	Parameter identifier
MQCFST_CODEDCHARSETID	DS F	Coded character set identifier
*		
MQCFST_STRINGLENGTH	DS F	Length of string
MQCFST_LENGTH	EQU *-MQCFST	Length of structure
	ORG MQCFST	
MQCFST_AREA	DS CL(MQCFST_LENGTH)	

## Visual Basic language declaration (Windows only)

```

Type MQCFST
  Type As Long          ' Structure type
  StrucLength As Long   ' Structure length
  Parameter As Long     ' Parameter identifier
  CodedCharSetId As Long ' Coded character set identifier
  StringLength As Long  ' Length of string
End Type

Global MQCFST_DEFAULT As MQCFST

```

---

## MQCFIL - PCF integer list parameter

The MQCFIL structure describes an integer-list parameter in a message that is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT\_ADMIN.

The MQCFIL structure is also used for event messages. In this case the message descriptor *Format* field is MQFMT\_EVENT.

The MQCFIL structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT\_PCF (see “Message descriptor for a PCF command” on page 131). Also in this case, not all of the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength*, *Count*, and *Values* fields to the values appropriate to the data.

The structure ends with a variable-length array of integers; see the *Values* field below for further details.

#### *Type* (MQLONG)

Structure type.

This indicates that the structure is an MQCFIL structure describing an integer-list parameter. The value must be:

MQCFT\_INTEGER\_LIST

Structure defining an integer list.

The initial value of this field is MQCFT\_INTEGER\_LIST.

#### *StrucLength* (MQLONG)

Structure length.

This is the length in bytes of the MQCFIL structure, including the variable-size array of integers at the end of the structure (the *Values* field). The length must be a multiple of four, and must be sufficient to contain the array; any bytes between the end of the array and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *Values* field:

MQCFIL\_STRUC\_LENGTH\_FIXED

Length of fixed part of command format integer-list parameter structure.

The initial value of this field is MQCFIL\_STRUC\_LENGTH\_FIXED.

#### *Parameter* (MQLONG)

Parameter identifier.

This identifies the parameter whose values are contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see page 388 for details.

The initial value of this field is 0.

#### *Count* (MQLONG)

Count of parameter values.

This is the number of elements in the *Values* array; it must be zero or greater.

The initial value of this field is 0.

#### *Values* (MQLONG×*Count*)

Parameter values.

This is an array of values for the parameter identified by the *Parameter* field. For example, for MQIACF\_Q\_ATTRS, this is a list of attribute selectors (MQCA\_\* and MQIA\_\* values).

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure should be allocated dynamically, and pointers used to address the fields within it.
- For the COBOL, PL/I, and System/390 assembler programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, the user should include MQCFIN in a larger structure, and declare additional field(s) following MQCFIN, to represent the *Values* field as required.

In C, the initial value of this field is a single 0.

Table 21. Initial values of fields in MQCFIL		
Field name	Name of constant	Value of constant
<i>Type</i>	MQCFT_INTEGER_LIST	5
<i>StrucLength</i>	MQCFIL_STRUC_LENGTH_FIXED	16
<i>Parameter</i>	None	0
<i>Count</i>	None	0
<i>Values</i> (present only in C)	None	0
<p><b>Notes:</b></p> <p>1. In the C programming language, the macro variable MQCFIL_DEFAULT contains the values listed above. It can be used in the following way to provide initial values for the fields in the structure:</p> <pre>struct {     MQCFIL Hdr;     MQLONG Data[99]; } MyCFIL = {MQCFIL_DEFAULT};</pre>		

## C language declaration

```
typedef struct tagMQCFIL {
    MQLONG Type;           /* Structure type */
    MQLONG StrucLength;    /* Structure length */
    MQLONG Parameter;     /* Parameter identifier */
    MQLONG Count;         /* Count of parameter values */
    MQLONG Values[1];     /* Parameter values - first element */
} MQCFIL;
```

## COBOL language declaration

```
** MQCFIL structure
10 MQCFIL.
** Structure type
15 MQCFIL-TYPE PIC S9(9) BINARY.
** Structure length
15 MQCFIL-STRUCLength PIC S9(9) BINARY.
** Parameter identifier
15 MQCFIL-PARAMETER PIC S9(9) BINARY.
** Count of parameter values
15 MQCFIL-COUNT PIC S9(9) BINARY.
```

## PL/I language declaration (AIX, OS/2, OS/390, and Windows NT)

```

dc1
  1 MQCFIL based,
  3 Type          fixed bin(31), /* Structure type */
  3 StrucLength   fixed bin(31), /* Structure length */
  3 Parameter     fixed bin(31), /* Parameter identifier */
  3 Count         fixed bin(31); /* Count of parameter values */

```

## System/390 assembler-language declaration (OS/390 only)

```

MQCFIL                DSECT
MQCFIL_TYPE           DS   F           Structure type
MQCFIL_STRUCLNGTH    DS   F           Structure length
MQCFIL_PARAMETER     DS   F           Parameter identifier
MQCFIL_COUNT         DS   F           Count of parameter values
MQCFIL_LENGTH        EQU  *-MQCFIL   Length of structure
MQCFIL_LENGTH        ORG  MQCFIL
MQCFIL_AREA          DS   CL(MQCFIL_LENGTH)

```

## Visual Basic language declaration (Windows only)

```

| Type MQCFIL
|   Type As Long      ' Structure type
|   StrucLength As Long ' Structure length
|   Parameter As Long ' Parameter identifier
|   Count As Long    ' Count of parameter values
| End Type
|
| Global MQCFIL_DEFAULT As MQCFIL

```

---

## MQCFSL - PCF string list parameter

The MQCFSL structure describes a string-list parameter in a message which is a command or a response to a command. In either case, the format name in the message descriptor is MQFMT\_ADMIN.

The MQCFSL structure is also used for event messages. In this case the message descriptor *Format* field is MQFMT\_EVENT.

The MQCFSL structure can also be used for user-defined message data. In this case the message descriptor *Format* field is MQFMT\_PCF (see “Message descriptor for a PCF command” on page 131). Also in this case, not all of the fields in the structure are meaningful. The supplied initial values can be used for most fields, but the application must set the *StrucLength*, *Count*, *StringLength*, and *Strings* fields to the values appropriate to the data.

The structure ends with a variable-length array of character strings; see the *Strings* field below for further details.

See “Usage notes” on page 388 for further information on how the structure should be used.

*Type* (MQLONG)  
Structure type.

This indicates that the structure is an MQCFSL structure describing a string-list parameter. The value must be:

## MQCFT\_STRING\_LIST

Structure defining a string list.

The initial value of this field is MQCFT\_STRING\_LIST.

*StrucLength* (MQLONG)

Structure length.

This is the length in bytes of the MQCFSL structure, including the variable-length data at the end of the structure (the *Strings* field). The length must be a multiple of four, and must be sufficient to contain all of the strings; any bytes between the end of the strings and the length defined by the *StrucLength* field are not significant.

The following constant gives the length of the *fixed* part of the structure, that is the length excluding the *Strings* field:

## MQCFSL\_STRUC\_LENGTH\_FIXED

Length of fixed part of command format string-list parameter structure.

The initial value of this field is MQCFSL\_STRUC\_LENGTH\_FIXED.

*Parameter* (MQLONG)

Parameter identifier.

This identifies the parameter whose values are contained in the structure. The values that can occur in this field depend on the value of the *Command* field in the MQCFH structure; see page 388 for details.

The initial value of this field is 0.

*CodedCharSetId* (MQLONG)

Coded character set identifier.

This specifies the coded character set identifier of the data in the *Strings* field. The following special value can be used:

## MQCCSI\_DEFAULT

Default coded character set identifier.

Character data is in the character set defined by the *CodedCharSetId* field in the message descriptor MQMD.

The initial value of this field is MQCCSI\_DEFAULT.

*Count* (MQLONG)

Count of parameter values.

This is the number of strings present in the *Strings* field; it must be zero or greater.

The initial value of this field is 0.

*StringLength* (MQLONG)

Length of one string.

This is the length in bytes of one parameter value, that is the length of one string in the *Strings* field; all of the strings are this length. The length must be zero or greater, and need not be a multiple of four.

The initial value of this field is 0.

*Strings* (MQCHAR×*StringLength*×*Count*)  
String values.

This is a set of string values for the parameter identified by the *Parameter* field. The number of strings is given by the *Count* field, and the length of each string is given by the *StringLength* field. The strings are concatenated together, with no bytes skipped between adjacent strings. The total length of the strings is the length of one string multiplied by the number of strings present (that is, *StringLength*×*Count*).

- In MQFMT\_ADMIN command messages, if the specified string is shorter than the standard length of the parameter, the omitted characters are assumed to be blanks. If the specified string is longer than the standard length, those characters in excess of the standard length must be blanks.
- In MQFMT\_ADMIN response messages, string parameters are returned padded with blanks to the standard length of the parameter.
- In MQFMT\_EVENT messages, trailing blanks are omitted from string parameters (that is, the string may be shorter than the defined length of the parameter).

In all cases, *StringLength* gives the length of the string actually present in the message.

The strings can contain any characters that are in the character set defined by *CodedCharSetId*, and that are valid for the parameter identified by *Parameter*.

**Note:** In the MQCFSL structure, a null character in a string is treated as normal data, and does not act as a delimiter for the string. This means that when a receiving application reads a MQFMT\_PCF, MQFMT\_EVENT, or MQFMT\_ADMIN message, the receiving application receives all of the data specified by the sending application. The data may, of course, have been converted between character sets (for example, by the receiving application specifying the MQGMO\_CONVERT option on the MQGET call).

In contrast, when the queue manager reads an MQFMT\_ADMIN message from the command input queue, the queue manager processes the data as though it had been specified on an MQI call. This means that within each string, the first null and the characters following it (up to the end of the string) are treated as blanks.

The way that this field is declared depends on the programming language:

- For the C programming language, the field is declared as an array with one element. Storage for the structure should be allocated dynamically, and pointers used to address the fields within it.
- For the COBOL, PL/I, and System/390 assembler programming languages, the field is omitted from the structure declaration. When an instance of the structure is declared, the user should include MQCFSL in a larger structure, and declare additional field(s) following MQCFSL, to represent the *Strings* field as required.

In C, the initial value of this field is the null string.

Table 22. Initial values of fields in MQCFSL		
Field name	Name of constant	Value of constant
Type	MQCFT_STRING_LIST	6
StrucLength	MQCFSL_STRUC_LENGTH_FIXED	24
Parameter	None	0
CodedCharSetId	MQCCSI_DEFAULT	0
Count	None	0
StringLength	None	0
Strings (present only in C)	None	Null string

**Notes:**

- In the C programming language, the macro variable MQCFSL\_DEFAULT contains the values listed above. It can be used in the following way to provide initial values for the fields in the structure:

```

struct {
    MQCFSL Hdr;
    MQCHAR Data[999];
} MyCFSL = {MQCFSL_DEFAULT};

```

## C language declaration

```

typedef struct tagMQCFSL {
    MQLONG Type;           /* Structure type */
    MQLONG StrucLength;    /* Structure length */
    MQLONG Parameter;     /* Parameter identifier */
    MQLONG CodedCharSetId; /* Coded character set identifier */
    MQLONG Count;         /* Count of parameter values */
    MQLONG StringLength;  /* Length of one string */
    MQCHAR Strings[1];    /* String values - first
                           character */
} MQCFSL;

```

## COBOL language declaration

```

** MQCFSL structure
10 MQCFSL.
** Structure type
15 MQCFSL-TYPE          PIC S9(9) BINARY.
** Structure length
15 MQCFSL-STRULENGTH  PIC S9(9) BINARY.
** Parameter identifier
15 MQCFSL-PARAMETER    PIC S9(9) BINARY.
** Coded character set identifier
15 MQCFSL-CODEDCHARSETID PIC S9(9) BINARY.
** Count of parameter values
15 MQCFSL-COUNT        PIC S9(9) BINARY.
** Length of one string
15 MQCFSL-STRINGLENGTH PIC S9(9) BINARY.

```

**PL/I language declaration (AIX, OS/2, OS/390, and Windows NT)**

```

dc1
  1 MQCFSL based,
    3 Type           fixed bin(31), /* Structure type */
    3 StrucLength    fixed bin(31), /* Structure length */
    3 Parameter      fixed bin(31), /* Parameter identifier */
    3 CodedCharSetId fixed bin(31), /* Coded character set identifier */
    3 Count          fixed bin(31), /* Count of parameter values */
    3 StringLength   fixed bin(31); /* Length of one string */

```

**System/390 assembler-language declaration (OS/390 only)**

```

MQCFSL          DSECT
MQCFSL_TYPE     DS   F           Structure type
MQCFSL_STRUCLNGTH DS   F           Structure length
MQCFSL_PARAMETER DS   F           Parameter identifier
MQCFSL_CODEDCCHARSETID DS   F           Coded character set
*                                           identifier
MQCFSL_COUNT    DS   F           Count of parameter values
MQCFSL_STRINGLENGTH DS   F           Length of one string
MQCFSL_LENGTH   EQU  *-MQCFSL Length of structure
                ORG  MQCFSL
MQCFSL_AREA     DS   CL(MQCFSL_LENGTH)

```

**Visual Basic language declaration (Windows only)**

```

|
|   Type MQCFSL
|   Type As Long           ' Structure type
|   StrucLength As Long    ' Structure length
|   Parameter As Long      ' Parameter identifier
|   CodedCharSetId As Long ' Coded character set identifier
|   Count As Long          ' Count of parameter values
|   StringLength As Long   ' Length of one string
|
| End Type
|
| Global MQCFSL_DEFAULT As MQCFSL
|

```



## Chapter 10. Example of using PCFs

This is an example of how Programmable Command Formats could be used in a program for administration of MQSeries queues.

### Enquire local queue attributes

A C language program is listed here that uses MQSeries for OS/2 V2.0. It is given as an example of using PCFs and has been limited to a simple case. This program will be of most use as an example if you are considering the use of PCFs to manage your MQSeries environment.

The program, once compiled, will inquire of the default queue manager about a subset of the attributes for all local queues defined to it. It then produces an output file, SAVEQMGR.TST, in the directory from which it was run. This file is of a format suitable for use with RUNMQSC.

### Program listing

```

/*-----*/
/*
/* This is a program to inquire of the default queue manager about the
/* local queues defined to it.
/*
/* The program takes this information and appends it to a file
/* SAVEQMGR.TST which is of a format suitable for RUNMQSC. It could,
/* therefore, be used to recreate or clone a queue manager.
/*
/* It is offered as an example of using Programmable Command Formats (PCFs)
/* as a method for administering a queue manager.
/*
/*-----*/

/* Include standard libraries */
#include <memory.h>
#include <stdio.h>

/* Include MQSeries headers */
#include <cmqc.h>
#include <cmqcfh.h>
#include <cmqxc.h>

typedef struct LocalQParms {
    MQCHAR48   QName;
    MQLONG    QType;
    MQCHAR64   QDesc;
    MQLONG    InhibitPut;
    MQLONG    DefPriority;
    MQLONG    DefPersistence;
    MQLONG    InhibitGet;
    MQCHAR48   ProcessName;
    MQLONG    MaxQDepth;
    MQLONG    MaxMsgLength;
    MQLONG    BackoutThreshold;
    MQCHAR48   BackoutReqQName;
    MQLONG    Shareability;
    MQLONG    DefInputOpenOption;
    MQLONG    HardenGetBackout;
    MQLONG    MsgDeliverySequence;
    MQLONG    RetentionInterval;
}

```

## PCF example

```

MQLONG      DefinitionType;
MQLONG      Usage;
MQLONG      OpenInputCount;
MQLONG      OpenOutputCount;
MQLONG      CurrentQDepth;
MQCHAR12    CreationDate;
MQCHAR8     CreationTime;
MQCHAR48    InitiationQName;
MQLONG      TriggerControl;
MQLONG      TriggerType;
MQLONG      TriggerMsgPriority;
MQLONG      TriggerDepth;
MQCHAR64    TriggerData;
MQLONG      Scope;
MQLONG      QDepthHighLimit;
MQLONG      QDepthLowLimit;
MQLONG      QDepthMaxEvent;
MQLONG      QDepthHighEvent;
MQLONG      QDepthLowEvent;
MQLONG      QServiceInterval;
MQLONG      QServiceIntervalEvent;
} LocalQParms;

void ProcessStringParm( MQCFST *pPCFString, LocalQParms *DefnLQ );

void ProcessIntegerParm( MQCFIN *pPCFInteger, LocalQParms *DefnLQ );

int AddToFileQLOCAL( LocalQParms DefnLQ );

void MQParmCpy( char *target, char *source, int length );

void PutMsg( MQHCONN  hConn      /* Connection to queue manager      */
            , MQCHAR8  MsgFormat /* Format of user data to be put in msg */
            , MQHOBJ   hQName    /* handle of queue to put the message to */
            , MQCHAR48 QName     /* name of queue to put the message to   */
            , MQBYTE   *UserMsg  /* The user data to be put in the message */
            , MQLONG   UserMsgLen /*                                         */
            );

void GetMsg( MQHCONN  hConn      /* handle of queue manager      */
            , MQLONG   MQParm    /* Options to specify nature of get */
            , MQHOBJ   hQName    /* handle of queue to read from   */
            , MQCHAR48 QName     /* name of queue to read from    */
            , MQBYTE   *UserMsg  /* Input/Output buffer containing msg */
            , MQLONG   ReadBufferLen /* Length of supplied buffer     */
            );
MQHOBJ OpenQ( MQHCONN  hConn
            , MQCHAR48 QName
            , MQLONG   OpenOpts
            );

int main( int argc, char *argv[] )
{
    MQCHAR48    QMgrName;      /* Name of connected queue mgr      */
    MQHCONN     hConn;        /* handle to connected queue mgr    */
    MQOD        ObjDesc;      /*                                     */
    MQLONG      OpenOpts;     /*                                     */
    MQLONG      CompCode;     /* MQ API completion code          */
    MQLONG      Reason;       /* Reason qualifying above          */
    /*                                     */
    MQHOBJ      hAdminQ;      /* handle to output queue           */
    MQHOBJ      hReplyQ;      /* handle to input queue            */
    /*                                     */
    MQLONG      AdminMsgLen;  /* Length of user message buffer    */
    MQBYTE      *pAdminMsg;   /* Ptr to outbound data buffer      */

```

```

MQCFH          *pPCFHeader;      /* Ptr to PCF header structure */
MQCFST         *pPCFString;     /* Ptr to PCF string parm block */
MQCFIN         *pPCFInteger;    /* Ptr to PCF integer parm block */
MQLONG         *pPCFType;       /* Type field of PCF message parm */
LocalQParms    DefnLQ;         /*
                               /*
char           ErrorReport[40]; /*
MQCHAR8       MsgFormat;       /* Format of inbound message */
short         Index;           /* Loop counter */

/* Connect to default queue manager */
memset( QMgrName, '\0', sizeof( QMgrName ) );
MQCONN( QMgrName /* I : use default queue manager */
        , &hConn /* 0 : queue manager handle */
        , &CompCode /* 0 : Completion code */
        , &Reason /* 0 : Reason qualifying CompCode */
        );

if ( CompCode != MQCC_OK ) {
    printf( "MQCONN failed for %s, CC=%d RC=%d\n"
           , QMgrName
           , CompCode
           , Reason
           );
    exit( -1 );
} /* endif */

/* Open all the required queues */
hAdminQ = OpenQ( hConn, "SYSTEM.ADMIN.COMMAND.QUEUE\0", MQOO_OUTPUT );

hReplyQ = OpenQ( hConn, "SAVEQMGR.REPLY.QUEUE\0", MQOO_INPUT_EXCLUSIVE );

/* ***** */
/* Put a message to the SYSTEM.ADMIN.COMMAND.QUEUE to inquire all */
/* the local queues defined on the queue manager. */
/*
/* The request consists of a Request Header and a parameter block */
/* used to specify the generic search. The header and the parameter */
/* block follow each other in a contiguous buffer which is pointed */
/* to by the variable pAdminMsg. This entire buffer is then put to */
/* the queue. */
/*
/* The command server, (use STRMQCSV to start it), processes the */
/* SYSTEM.ADMIN.COMMAND.QUEUE and puts a reply on the application */
/* ReplyToQ for each defined queue. */
/* ***** */

/* Set the length for the message buffer */
AdminMsgLen = MQCFH_STRUC_LENGTH
             + MQCFST_STRUC_LENGTH_FIXED + MQ_Q_NAME_LENGTH
             + MQCFIN_STRUC_LENGTH
             ;

/* ----- */
/* Set pointers to message data buffers */
/*
/* pAdminMsg points to the start of the message buffer */
/*
/* pPCFHeader also points to the start of the message buffer. It is */
/* used to indicate the type of command we wish to execute and the */
/* number of parameter blocks following in the message buffer. */
/*
/* pPCFString points into the message buffer immediately after the */
/* header and is used to map the following bytes onto a PCF string */
/* parameter block. In this case the string is used to indicate the */
/* name of the queue we want details about, * indicating all queues. */
/*

```

## PCF example

```
/* pPCFInteger points into the message buffer immediately after the */
/* string block described above. It is used to map the following */
/* bytes onto a PCF integer parameter block. This block indicates */
/* the type of queue we wish to receive details about, thereby */
/* qualifying the generic search set up by passing the previous */
/* string parameter. */
/* Note that this example is a generic search for all attributes of */
/* all local queues known to the queue manager. By using different, */
/* or more, parameter blocks in the request header it is possible */
/* to narrow the search. */
/* ----- */

pAdminMsg = (MQBYTE *)malloc( AdminMsgLen );

pPCFHeader = (MQCFH *)pAdminMsg;

pPCFString = (MQCFST *) (pAdminMsg
                        + MQCFH_STRUC_LENGTH
                        );

pPCFInteger = (MQCFIN *) ( pAdminMsg
                          + MQCFH_STRUC_LENGTH
                          + MQCFST_STRUC_LENGTH_FIXED + MQ_Q_NAME_LENGTH
                          );

/* Setup request header */
pPCFHeader->Type = MQCFT_COMMAND;
pPCFHeader->StrucLength = MQCFH_STRUC_LENGTH;
pPCFHeader->Version = MQCFH_VERSION_1;
pPCFHeader->Command = MQCMD_INQUIRE_Q;
pPCFHeader->MsgSeqNumber = MQCFC_LAST;
pPCFHeader->Control = MQCFC_LAST;
pPCFHeader->ParameterCount = 2;

/* Setup parameter block */
pPCFString->Type = MQCFT_STRING;
pPCFString->StrucLength = MQCFST_STRUC_LENGTH_FIXED + MQ_Q_NAME_LENGTH;
pPCFString->Parameter = MQCA_Q_NAME;
pPCFString->CodedCharSetId = MQCCSI_DEFAULT;
pPCFString->StringLength = MQ_Q_NAME_LENGTH;
memset( pPCFString->String, ' ', MQ_Q_NAME_LENGTH );
memcpy( pPCFString->String, "*", 1 );

/* Setup parameter block */
pPCFInteger->Type = MQCFT_INTEGER;
pPCFInteger->StrucLength = MQCFIN_STRUC_LENGTH;
pPCFInteger->Parameter = MQIA_Q_TYPE;
pPCFInteger->Value = MQQT_LOCAL;

PutMsg( hConn /* Queue manager handle */
        , MQFMT_ADMIN /* Format of message */
        , hAdminQ /* Handle of command queue */
        , "SYSTEM.ADMIN.COMMAND.QUEUE\0"
        , (MQBYTE *)pAdminMsg /* Data part of message to put */
        , AdminMsgLen
        );

free( pAdminMsg );

/* ***** */
/* Get and process the replies received from the command server onto */
/* the applications ReplyToQ. */
/* There will be one message per defined local queue. */
/* The last message will have the Control field of the PCF header */
/* set to MQCFC_LAST. All others will be MQCFC_NOT_LAST. */
/* An individual Reply message consists of a header followed by a */
```

```

/* number a parameters, the exact number, type and order will depend */
/* upon the type of request. */
/* */
/* ----- */
/* */
/* The message is retrieved into a buffer pointed to by pAdminMsg. */
/* This buffer as been allocated to be large enough to hold all the */
/* parameters for a local queue definition. */
/* */
/* pPCFHeader is then allocated to point also to the beginning of */
/* the buffer and is used to access the PCF header structure. The */
/* header contains several fields. The one we are specifically */
/* interested in is the ParameterCount. This tells us how many */
/* parameters follow the header in the message buffer. There is */
/* one parameter for each local queue attribute known by the */
/* queue manager. */
/* */
/* At this point we do not know the order or type of each parameter */
/* block in the buffer, the first MQLONG of each block defines its */
/* type; they may be parameter blocks containing either strings or */
/* integers. */
/* */
/* pPCFType is used initially to point to the first byte beyond the */
/* known parameter block. Initially then, it points to the first byte */
/* after the PCF header. Subsequently it is incremented by the length */
/* of the identified parameter block and therefore points at the */
/* next. Looking at the value of the data pointed to by pPCFType we */
/* can decide how to process the next group of bytes, either as a */
/* string, or an integer. */
/* */
/* In this way we parse the message buffer extracting the values of */
/* each of the parameters we are interested in. */
/* */
/* ***** */

/* AdminMsgLen is to be set to the length of the expected reply */
/* message. This structure is specific to Local Queues. */
AdminMsgLen = MQCFH_STRUC_LENGTH
+ (MQCFST_STRUC_LENGTH_FIXED * 12)
+ (MQCFIN_STRUC_LENGTH * 30)
+ MQ_Q_NAME_LENGTH
+ MQ_Q_DESC_LENGTH
+ MQ_PROCESS_NAME_LENGTH
+ MQ_Q_NAME_LENGTH
+ MQ_CREATION_DATE_LENGTH
+ MQ_CREATION_TIME_LENGTH
+ MQ_Q_NAME_LENGTH
+ MQ_TRIGGER_DATA_LENGTH
+ MQ_Q_NAME_LENGTH
+ MQ_Q_NAME_LENGTH
+ MQ_Q_MGR_NAME_LENGTH
+ MQ_Q_NAME_LENGTH
;

/* Set pointers to message data buffers */
pAdminMsg = (MQBYTE *)malloc( AdminMsgLen );

do {

    GetMsg( hConn /* Queue manager handle */
, MQGMO_WAIT /* Parameters on Get */
, hReplyQ /* Get queue handle */
, "SAVEQMGR.REPLY.QUEUE\0"
, (MQBYTE *)pAdminMsg /* pointer to message area */
, AdminMsgLen /* length of get buffer */
);

/* Examine Header */
pPCFHeader = (MQCFH *)pAdminMsg;

/* Examine first parameter */

```

## PCF example

```
pPCFType = (MQLONG *) (pAdminMsg + MQCFH_STRUC_LENGTH);

Index = 1;

while ( Index <= pPCFHeader->ParameterCount ) {

    /* Establish the type of each parameter and allocate */
    /* a pointer of the correct type to reference it. */
    switch ( *pPCFType ) {
    case MQCFT_INTEGER:
        pPCFInteger = (MQCFIN *) pPCFType;
        ProcessIntegerParm( pPCFInteger, &DefnLQ );
        Index++;
        /* Increment the pointer to the next parameter by the */
        /* length of the current parm. */
        pPCFType = (MQLONG *) ( (MQBYTE *) pPCFType
                                + pPCFInteger->StrucLength
                                );
        break;
    case MQCFT_STRING:
        pPCFString = (MQCFST *) pPCFType;
        ProcessStringParm( pPCFString, &DefnLQ );
        Index++;
        /* Increment the pointer to the next parameter by the */
        /* length of the current parm. */
        pPCFType = (MQLONG *) ( (MQBYTE *) pPCFType
                                + pPCFString->StrucLength
                                );
        break;
    } /* endswitch */

} /* endwhile */

/* ***** */
/* Message parsed, append to output file */
/* ***** */
AddToFileQLOCAL( DefnLQ );

/* ***** */
/* Finished processing the current message, do the next one. */
/* ***** */

} while ( pPCFHeader->Control == MQCFC_NOT_LAST ); /* enddo */

free( pAdminMsg );

/* ***** */
/* Processing of the local queues complete */
/* ***** */

}

void ProcessStringParm( MQCFST *pPCFString, LocalQParms *DefnLQ )
{
    switch ( pPCFString->Parameter ) {
    case MQCA_Q_NAME:
        MQParmCpy( DefnLQ->QName, pPCFString->String, 48 );
        break;
    case MQCA_Q_DESC:
        MQParmCpy( DefnLQ->QDesc, pPCFString->String, 64 );
        break;
    case MQCA_PROCESS_NAME:
        MQParmCpy( DefnLQ->ProcessName, pPCFString->String, 48 );
        break;
    case MQCA_BACKOUT_REQ_Q_NAME:
        MQParmCpy( DefnLQ->BackoutReqQName, pPCFString->String, 48 );
        break;
    case MQCA_CREATION_DATE:
        MQParmCpy( DefnLQ->CreationDate, pPCFString->String, 12 );
        break;
    }
```

```

case MQCA_CREATION_TIME:
    MQParmCpy( DefnLQ->CreationTime, pPCFString->String, 8 );
    break;
case MQCA_INITIATION_Q_NAME:
    MQParmCpy( DefnLQ->InitiationQName, pPCFString->String, 48 );
    break;
case MQCA_TRIGGER_DATA:
    MQParmCpy( DefnLQ->TriggerData, pPCFString->String, 64 );
    break;
} /* endswitch */
}

void ProcessIntegerParm( MQCFIN *pPCFInteger, LocalQParms *DefnLQ )
{
    switch ( pPCFInteger->Parameter ) {
    case MQIA_Q_TYPE:
        DefnLQ->QType = pPCFInteger->Value;
        break;
    case MQIA_INHIBIT_PUT:
        DefnLQ->InhibitPut = pPCFInteger->Value;
        break;
    case MQIA_DEF_PRIORITY:
        DefnLQ->DefPriority = pPCFInteger->Value;
        break;
    case MQIA_DEF_PERSISTENCE:
        DefnLQ->DefPersistence = pPCFInteger->Value;
        break;
    case MQIA_INHIBIT_GET:
        DefnLQ->InhibitGet = pPCFInteger->Value;
        break;
    case MQIA_SCOPE:
        DefnLQ->Scope = pPCFInteger->Value;
        break;
    case MQIA_MAX_Q_DEPTH:
        DefnLQ->MaxQDepth = pPCFInteger->Value;
        break;
    case MQIA_MAX_MSG_LENGTH:
        DefnLQ->MaxMsgLength = pPCFInteger->Value;
        break;
    case MQIA_BACKOUT_THRESHOLD:
        DefnLQ->BackoutThreshold = pPCFInteger->Value;
        break;
    case MQIA_SHAREABILITY:
        DefnLQ->Shareability = pPCFInteger->Value;
        break;
    case MQIA_DEF_INPUT_OPEN_OPTION:
        DefnLQ->DefInputOpenOption = pPCFInteger->Value;
        break;
    case MQIA_HARDEN_GET_BACKOUT:
        DefnLQ->HardenGetBackout = pPCFInteger->Value;
        break;
    case MQIA_MSG_DELIVERY_SEQUENCE:
        DefnLQ->MsgDeliverySequence = pPCFInteger->Value;
        break;
    case MQIA_RETENTION_INTERVAL:
        DefnLQ->RetentionInterval = pPCFInteger->Value;
        break;
    case MQIA_DEFINITION_TYPE:
        DefnLQ->DefinitionType = pPCFInteger->Value;
        break;
    case MQIA_USAGE:
        DefnLQ->Usage = pPCFInteger->Value;
        break;
    case MQIA_OPEN_INPUT_COUNT:
        DefnLQ->OpenInputCount = pPCFInteger->Value;
        break;
    case MQIA_OPEN_OUTPUT_COUNT:
        DefnLQ->OpenOutputCount = pPCFInteger->Value;
        break;
    case MQIA_CURRENT_Q_DEPTH:
        DefnLQ->CurrentQDepth = pPCFInteger->Value;

```

## PCF example

```

        break;
    case MQIA_TRIGGER_CONTROL:
        DefnLQ->TriggerControl = pPCFInteger->Value;
        break;
    case MQIA_TRIGGER_TYPE:
        DefnLQ->TriggerType = pPCFInteger->Value;
        break;
    case MQIA_TRIGGER_MSG_PRIORITY:
        DefnLQ->TriggerMsgPriority = pPCFInteger->Value;
        break;
    case MQIA_TRIGGER_DEPTH:
        DefnLQ->TriggerDepth = pPCFInteger->Value;
        break;
    case MQIA_Q_DEPTH_HIGH_LIMIT:
        DefnLQ->QDepthHighLimit = pPCFInteger->Value;
        break;
    case MQIA_Q_DEPTH_LOW_LIMIT:
        DefnLQ->QDepthLowLimit = pPCFInteger->Value;
        break;
    case MQIA_Q_DEPTH_MAX_EVENT:
        DefnLQ->QDepthMaxEvent = pPCFInteger->Value;
        break;
    case MQIA_Q_DEPTH_HIGH_EVENT:
        DefnLQ->QDepthHighEvent = pPCFInteger->Value;
        break;
    case MQIA_Q_DEPTH_LOW_EVENT:
        DefnLQ->QDepthLowEvent = pPCFInteger->Value;
        break;
    case MQIA_Q_SERVICE_INTERVAL:
        DefnLQ->QServiceInterval = pPCFInteger->Value;
        break;
    case MQIA_Q_SERVICE_INTERVAL_EVENT:
        DefnLQ->QServiceIntervalEvent = pPCFInteger->Value;
        break;
    } /* endswitch */
}

/* ----- */
/*
/* This process takes the attributes of a single local queue and adds them
/* to the end of a file, SAVEQMGR.TST, which can be found in the current
/* directory.
/*
/* The file is of a format suitable for subsequent input to RUNMQSC.
/*
/* ----- */
int AddToFileQLOCAL( LocalQParms DefnLQ )
{
    char    ParmBuffer#120"; /* Temporary buffer to hold for output to file */
    FILE    *fp; /* Pointer to a file */

    /* Append these details to the end of the current SAVEQMGR.TST file */
    fp = fopen( "SAVEQMGR.TST", "a" );

    sprintf( ParmBuffer, "DEFINE QLOCAL ('%s') REPLACE +\n", DefnLQ.QName );
    fputs( ParmBuffer, fp );

    sprintf( ParmBuffer, "    DESCR('%s') +\n", DefnLQ.QDesc );
    fputs( ParmBuffer, fp );

    if ( DefnLQ.InhibitPut == MQQA_PUT_ALLOWED ) {
        sprintf( ParmBuffer, "    PUT(ENABLED) +\n" );
        fputs( ParmBuffer, fp );
    } else {
        sprintf( ParmBuffer, "    PUT(DISABLED) +\n" );
        fputs( ParmBuffer, fp );
    } /* endif */

    sprintf( ParmBuffer, "    DEFPRTY(%d) +\n", DefnLQ.DefPriority );
    fputs( ParmBuffer, fp );
}

```

```

if ( DefnLQ.DefPersistence == MQPER_PERSISTENT ) {
    sprintf( ParmBuffer, "      DEFPSIST(YES) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      DEFPSIST(NO) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.InhibitGet == MQQA_GET_ALLOWED ) {
    sprintf( ParmBuffer, "      GET(ENABLED) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      GET(DISABLED) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

sprintf( ParmBuffer, "      MAXDEPTH(%d) +\n", DefnLQ.MaxQDepth );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "      MAXMSGL(%d) +\n", DefnLQ.MaxMsgLength );
fputs( ParmBuffer, fp );

if ( DefnLQ.Shareability == MQQA_SHAREABLE ) {
    sprintf( ParmBuffer, "      SHARE +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      NOSHARE +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.DefInputOpenOption == MQOO_INPUT_SHARED ) {
    sprintf( ParmBuffer, "      DEFSOPT(SHARED) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      DEFSOPT(EXCL) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.MsgDeliverySequence == MQMDS_PRIORITY ) {
    sprintf( ParmBuffer, "      MSGDLVSQ(PRIORITY) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      MSGDLVSQ(FIFO) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.HardenGetBackout == MQQA_BACKOUT_HARDENED ) {
    sprintf( ParmBuffer, "      HARDENBO +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      NOHARDENBO +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.Usage == MQUS_NORMAL ) {
    sprintf( ParmBuffer, "      USAGE(NORMAL) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      USAGE(XMIT) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.TriggerControl == MQTC_OFF ) {
    sprintf( ParmBuffer, "      NOTRIGGER +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      TRIGGER +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

switch ( DefnLQ.TriggerType ) {
case MQTT_NONE:

```

## PCF example

```
        sprintf( ParmBuffer, "          TRIGTYPE(NONE) +\n" );
        fputs( ParmBuffer, fp );
        break;
case MQTT_FIRST:
        sprintf( ParmBuffer, "          TRIGTYPE(FIRST) +\n" );
        fputs( ParmBuffer, fp );
        break;
case MQTT_EVERY:
        sprintf( ParmBuffer, "          TRIGTYPE(EVERY) +\n" );
        fputs( ParmBuffer, fp );
        break;
case MQTT_DEPTH:
        sprintf( ParmBuffer, "          TRIGTYPE(DEPTH) +\n" );
        fputs( ParmBuffer, fp );
        break;
} /* endswitch */

sprintf( ParmBuffer, "          TRIGDPATH(%d) +\n", DefnLQ.TriggerDepth );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          TRIGMPRI(%d) +\n", DefnLQ.TriggerMsgPriority);
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          TRIGDATA('%s') +\n", DefnLQ.TriggerData );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          PROCESS('%s') +\n", DefnLQ.ProcessName );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          INITQ('%s') +\n", DefnLQ.InitiationQName );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          RETINTVL(%d) +\n", DefnLQ.RetentionInterval );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          BOTHRESH(%d) +\n", DefnLQ.BackoutThreshold );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          BOQNAME('%s') +\n", DefnLQ.BackoutReqQName );
fputs( ParmBuffer, fp );

if ( DefnLQ.Scope == MQSCO_Q_MGR ) {
    sprintf( ParmBuffer, "          SCOPE(QMGR) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "          SCOPE(CELL) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

sprintf( ParmBuffer, "          QDEPTHHI(%d) +\n", DefnLQ.QDepthHighLimit );
fputs( ParmBuffer, fp );

sprintf( ParmBuffer, "          QDEPTHLO(%d) +\n", DefnLQ.QDepthLowLimit );
fputs( ParmBuffer, fp );

if ( DefnLQ.QDepthMaxEvent == MQEVR_ENABLED ) {
    sprintf( ParmBuffer, "          QDPMAXEV(ENABLED) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "          QDPMAXEV(DISABLED) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

if ( DefnLQ.QDepthHighEvent == MQEVR_ENABLED ) {
    sprintf( ParmBuffer, "          QDPHIEV(ENABLED) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "          QDPHIEV(DISABLED) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */
```

```

if ( DefnLQ.QDepthLowEvent == MQEVR_ENABLED ) {
    sprintf( ParmBuffer, "      QDPLOEV(ENABLED) +\n" );
    fputs( ParmBuffer, fp );
} else {
    sprintf( ParmBuffer, "      QDPLOEV(DISABLED) +\n" );
    fputs( ParmBuffer, fp );
} /* endif */

sprintf( ParmBuffer, "      QSVCIINT(%d) +\n", DefnLQ.QServiceInterval );
fputs( ParmBuffer, fp );

switch ( DefnLQ.QServiceIntervalEvent ) {
case MQQSIE_OK:
    sprintf( ParmBuffer, "      QSVCIIEV(OK)\n" );
    fputs( ParmBuffer, fp );
    break;
case MQQSIE_NONE:
    sprintf( ParmBuffer, "      QSVCIIEV(NONE)\n" );
    fputs( ParmBuffer, fp );
    break;
case MQQSIE_HIGH:
    sprintf( ParmBuffer, "      QSVCIIEV(HIGH)\n" );
    fputs( ParmBuffer, fp );
    break;
} /* endswitch */

sprintf( ParmBuffer, "\n" );
fputs( ParmBuffer, fp );

fclose(fp);
}

/* ----- */
/*
/* The queue manager returns strings of the maximum length for each
/* specific parameter, padded with blanks.
/*
/* We are interested in only the nonblank characters so will extract them
/* from the message buffer, and terminate the string with a null, \0.
/*
/* ----- */
void MQParmCpy( char *target, char *source, int length )
{
    int counter=0;

    while ( counter < length && source[counter] != ' ' ) {
        target[counter] = source[counter];
        counter++;
    } /* endwhile */

    if ( counter < length ) {
        target[counter] = '\0';
    } /* endif */
}

```

## PCF example

---

## Part 3. Installable services

<b>Chapter 11. Installable services and components</b>	423
Why installable services?	423
Functions and components	424
Initialization	426
Configuring services and components	427
Creating your own service component	429
Using multiple service components	430
<b>Chapter 12. Authorization service</b>	433
Object authority manager (OAM)	433
Authorization service on UNIX systems	434
Authorization service on Windows NT	435
Authorization service on MQSeries for OS/2 Warp	436
Authorization service on Digital OpenVMS	437
Authorization service on Tandem NSK	438
Authorization service interface	438
<b>Chapter 13. Name service</b>	441
How the name service works	441
Using DCE to share queues on different queue managers	444
DCE configuration	445
<b>Chapter 14. User identifier service</b>	447
User identifier service interface	448
Sample program for user identifier service	449
<b>Chapter 15. Installable services interface</b>	453
How the functions are shown	454
MQZEP - Add component entry point	455
MQZED - Entity Data structure	458
MQZ_CHECK_AUTHORITY - Check authority	460
MQZ_CHECK_AUTHORITY_2 - Check authority 2	466
MQZ_COPY_ALL_AUTHORITY - Copy all authority	472
MQZ_DELETE_AUTHORITY - Delete authority	475
MQZ_GET_AUTHORITY - Get authority	478
MQZ_GET_AUTHORITY_2 - Get authority 2	482
MQZ_GET_EXPLICIT_AUTHORITY - Get explicit authority	486
MQZ_GET_EXPLICIT_AUTHORITY_2 - Get explicit authority 2	490
MQZ_INIT_AUTHORITY - Initialize authorization service component	494
MQZ_SET_AUTHORITY - Set authority	497
MQZ_SET_AUTHORITY_2 - Set authority 2	501
MQZ_TERM_AUTHORITY - Terminate authorization service component	505
MQZ_DELETE_NAME - Delete name from service	508
MQZ_INIT_NAME - Initialize name service component	511
MQZ_INSERT_NAME - Insert name in service	514
MQZ_LOOKUP_NAME - Lookup name in service	517
MQZ_TERM_NAME - Terminate name service component	520
MQZ_FIND_USERID - Find user ID	523
MQZ_INIT_USERID - Initialize user identifier service component	526
MQZ_TERM_USERID - Terminate user identifier service component	529



---

## Chapter 11. Installable services and components

This chapter introduces the installable services and the functions and components associated with them. The interface to these functions is documented so that you can supply components, or so that components can be provided by software vendors.

The chapter includes:

- “Why installable services?”
- “Functions and components” on page 424
- “Initialization” on page 426
- “Configuring services and components” on page 427
- “Creating your own service component” on page 429
- “Using multiple service components” on page 430

This interface is described in Chapter 15, “Installable services interface” on page 453. Installable services and components are supported by:

MQSeries for AIX  
 MQSeries for AT&T GIS UNIX  
 MQSeries for Digital OpenVMS  
 MQSeries for HP-UX  
 MQSeries for OS/2 Warp  
 MQSeries for SINIX and DC/OSx  
 MQSeries for Sun Solaris  
 MQSeries for Tandem NonStop Kernel  
 MQSeries for Windows NT

---

### Why installable services?

The major reasons for providing MQSeries installable services are:

- To provide you with the flexibility of choosing whether to use components provided by MQSeries products, or replace, or augment, them with others.
- To allow vendors to participate, by providing components that may be using new technologies, without making internal changes to MQSeries products.
- To allow MQSeries to exploit new technologies faster and cheaper, and so provide products earlier and at lower prices.

*Installable services* and *service components* are part of the MQSeries product structure. At the center of this structure is the part of the queue manager that implements the function and rules associated with the Message Queue Interface (MQI). This central part requires a number of service functions, called *installable services*, in order to perform its work. The following installable services are defined:

- Authorization service
- Name service
- User identifier service (MQSeries for OS/2 Warp only)

Each installable service is a related set of functions that are implemented using one or more *service components*. Each component is invoked using a properly architected, publicly available interface. This enables independent software

## Functions and components

vendors and other third parties to provide installable components to augment or replace those provided by the MQSeries products. Table 23 on page 424 summarizes the services and components that can be used on the various platforms.

<i>Table 23. Installable services and components summary</i>			
<b>Platform</b>	<b>Supplied component</b>	<b>Function</b>	<b>Requirements</b>
<b>Authorization Service</b>			
Digital OpenVMS, Tandem NSK, UNIX systems, and Windows NT	Object Authority Manager (OAM)	Provides authorization checking on commands and MQI calls. Users can write their component to augment or replace the OAM.	(Appropriate platform authorization facilities are assumed)
OS/2	None	User defined	A third-party or user-written authority manager
<b>Name Service</b>			
AIX, Digital OpenVMS, HP-UX, OS/2, Sun Solaris, and Windows NT	DCE name service component	Allows queue managers to share queues or: User defined. Shared queues must have their <i>Scope</i> attribute set to CELL.	DCE is required for the supplied component. or: A third-party or user-written name manager.
AT&T GIS UNIX, and SINIX and DC/OSx	None	User defined. Shared queues must have their <i>Scope</i> attribute set to CELL.	A third-party or user-written name manager.
<b>User Identifier Service</b>			
UNIX systems and Windows NT	None	Because UNIX systems and Windows NT systems provide the required user IDs, this service is not required.	–
OS/2	DLL and (modified) sample source	Provides a user ID that is automatically inserted into an MQSeries message	None—uses OS/2 environment variables

## Functions and components

Each service consists of a set of related functions. For example, the name service contains function for:

- Looking up a queue name, returning the name of the queue manager at which the queue is defined
- Inserting a queue name into the service's directory
- Deleting a queue name from the service's directory

It also contains an initialization function and a termination function.

An installable service is provided by one or more service components. Each component is capable of performing some or all of the functions that are defined for

that service. For example, in MQSeries for AIX, the supplied authorization service component, the OAM, performs all seven of the available functions. See “Authorization service interface” on page 438 for more information. The component is also responsible for managing any underlying resources or software (for example, DCE name services) that it needs to implement the service. Configuration files provide a standard method for loading the component, and determining the addresses of the functional routines that it provides.

Figure 10 shows how services and components are related:

- A service is defined to a queue manager by stanzas in a configuration file.
- Each service is supported by supplied code in the queue manager. Users cannot change this code and therefore cannot create their own services.
- Each service is implemented by one or more components; these may be supplied with the product or user-written. Multiple components for a service can be invoked, each supporting different facilities within the service.
- Entry points ‘connect’ the service components to the supporting code in the queue manager.

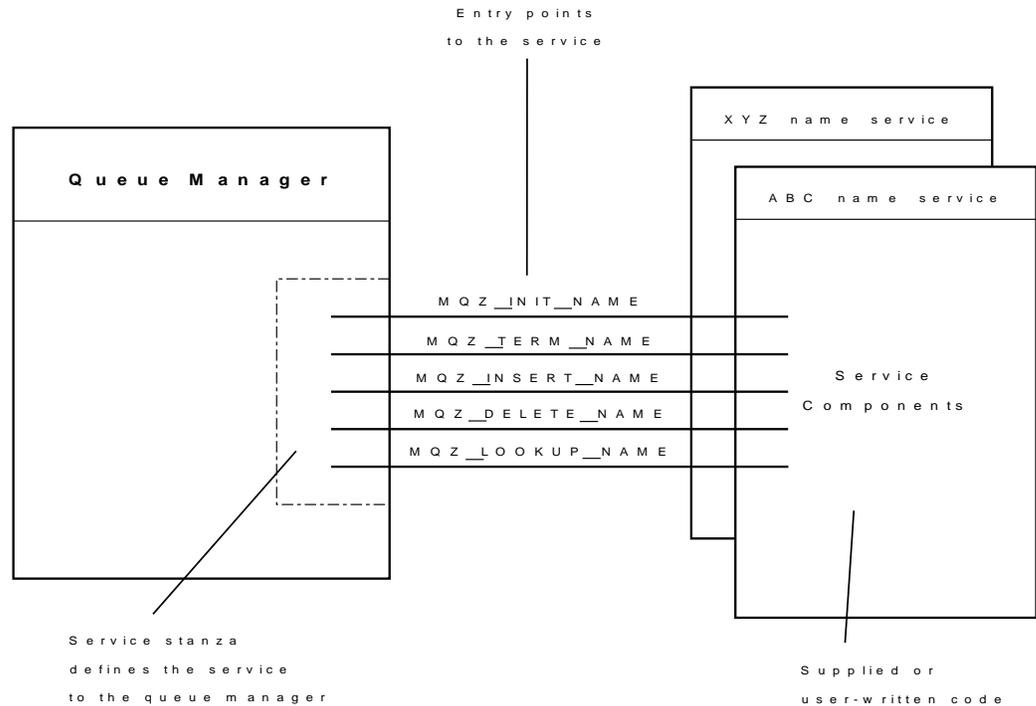


Figure 10. Understanding services, components, and entry points

## Entry-points

Each service component is represented by a list of the entry-point addresses of the routines that support a particular installable service. The installable service defines the function to be performed by each routine.

The ordering of the service components when they are configured defines the order in which entry-points are called in an attempt to satisfy a request for the service.

## Initialization

In the supplied header file `cmqzc.h`, the supplied entry points to each service have an `MQZID_` prefix.

## Return codes

Service components provide return codes to the queue manager to report on a variety of conditions. They report the success or failure of the operation, and indicate whether or not the queue manager is to proceed to the next service component, or whether the queue manager itself should make that decision. A separate *Continuation* parameter carries this indication.

## Component data

A single service component may require data to be shared between its various functions. Installable services provide an optional data area to be passed on each invocation of a given service component. This data area is for the exclusive use of the service component. It is shared by all the invocations of a given function, even if they are made from different address spaces or processes. It is guaranteed to be addressable from the service component whenever it is called. You must declare the size of this area in the *ServiceComponent* stanza.

---

## Initialization

When the component initialization routine is invoked, it must call the queue manager **MQZEP** function for each entry-point supported by the component. **MQZEP** defines an entry-point to the service. All the undefined exit points are assumed to be NULL.

## Primary initialization

A component is always invoked with this option once, before it is invoked in any other way.

## Secondary initialization

A component may be invoked with this option, on certain platforms. For example, it may be invoked once for each operating system process, thread or task by which the service is accessed.

If secondary initialization is used:

- The component may be invoked more than once for secondary initialization. For each such call, a matching call for secondary termination is issued when the service is no longer needed.

For naming services this is the `MQZ_TERM_NAME` call.

For authorization services this is the `MQZ_TERM_AUTHORITY` call.

- The entry points must be respecified (by calling `MQZEP`) each time the component is called for primary and secondary initialization.
- Only one copy of component data is used for the component; there is not a different copy for each secondary initialization.
- The component is not invoked for any other calls to the service (from the operating system process, thread or task, as appropriate) before secondary initialization has been carried out.

- The *Version* parameter must be set by the component to the same value for primary and secondary initialization.

## Secondary termination

A component is invoked with this option, if it has been invoked for secondary initialization.

## Primary termination

A component is always invoked with this option once, when it is no longer required. No further calls are made to this component.

---

## Configuring services and components

Service components are configured using the queue manager configuration files, with the exception of Windows NT. For each service to be used, this file must contain a *Service* stanza, which defines the service to the queue manager.

On Windows NT, each queue manager has its own stanza in the Registry.

For each component within a service, there must be a *ServiceComponent* stanza. This identifies the name and path of the module containing the code for that component.

The authorization service component, known as the Object Authority Manager (OAM), is supplied with the product. When you create a queue manager, the queue manager configuration file (or the Registry on Windows NT) is automatically updated to include the appropriate stanzas for the authorization service and for the default component (the OAM). For the other components, you must configure the queue manager configuration file manually.

The code for each service component is loaded into the queue manager when the queue manager is started, using dynamic binding, where this is supported on the platform.

### Service stanza format

The format of the *Service* stanza is:

```
Service:
  Name=<service_name>
  EntryPoints=<entries>
```

where:

<service\_name>

The name of the service. This is defined by the service.

<entries>

The number of entry-points defined for the service. This includes the initialization and termination entry points.

### Service stanza format for Windows NT only

On Windows NT, the *Service* stanza has a third attribute, *SecurityPolicy*. The format of the stanza is:

```
Service:
  Name=<service_name>
  EntryPoints=<entries>
  SecurityPolicy=<policy>
```

where:

<service\_name>

The name of the service. This is defined by the service.

<entries>

The number of entry-points defined for the service. This includes the initialization and termination entry points.

<policy>

This attribute may be *NTSIDsRequired* (the Windows NT Security Identifier), or *Default*. If you do not specify *NTSIDsRequired*, the *Default* value is used. This attribute has If you do not specify this value, a value of *Default* is used. This attribute is valid if *Name* has a value of *AuthorizationService* only.

### Service component stanza format

The format of the *Service component* stanza is:

```
ServiceComponent:
  Service=<service_name>
  Name=<component_name>
  Module=<module_name>
  ComponentDataSize=<size>
```

where:

<service\_name>

The name of the service. This must match the *Name* specified in a service stanza.

<component\_name>

A descriptive name of the service component. This must be unique, and contain only the characters that are valid for the names of MQSeries objects (for example, queue names). This name occurs in operator messages generated by the service. It is recommended, therefore, that the name starts with a company trademark or similar distinguishing string.

<module\_name>

The name of the module to contain the code for this component.

**Note:** Specify a full path name.

<size>

The size in bytes of the component data area passed to the component on each call. Specify zero if no component data is required.

These two stanzas can appear in any order and the stanza keys under them can also appear in any order. For either of these stanzas, all the stanza keys must be present. If a stanza key is duplicated, the last one is used.

At startup time, the queue manager processes each service component entry in the configuration file in turn. It attempts to load the specified component module. If successful, it invokes the entry-point of the component (which must be the entry-point for initialization of the component), passing it a configuration handle.

---

## Creating your own service component

To create your own service component:

- Write the component using the sample provided (see page 449). You must ensure that the header file `cmqzc.h` is included in your program.
- **For UNIX systems:** Create the shared library by compiling the program, and linking it with the shared libraries `libmqm*` and `libmqmzf*` (the threading suffixes and file extensions vary by platform).

**Note:** On Version 5.1 of the MQSeries products for UNIX systems, the agent runs in a threaded environment and the OAM and Name Service **must** be built to run in a threaded environment.

This includes using the threaded versions of `libmqm` and `libmqmzf`.

### Threaded Sun Solaris installable services

If the MQ DCE option is **not** currently installed, threaded installable services on Sun Solaris **must** be threaded with Posix\*\* V10 threading.

If the MQ DCE option **is** currently installed, threaded installable services on Sun Solaris **must** be threaded with DCE threading.

- **For OS/2 and Windows NT:** Create a DLL by compiling the program, and linking it with the libraries `MQM.LIB` and `MQMZF.LIB`.  
See Chapter 11, "Writing data-conversion exits" in the *MQSeries Application Programming Guide* for details of how to compile and link code for shared libraries.
- Add stanzas to the queue manager configuration file to define the service to the queue manager and to specify the location of the module. Refer to the individual chapters for each service, for more information.
- Stop and restart the queue manager to activate the component.

### Using multiple service components

*This section may be omitted at first reading.*

You can install more than one component for a given service. This allows components to provide only partial implementations of the service, and to rely on other components to provide the remaining functions.

For example, suppose you create a new name service component called `XYZ_name_serv`. This component supports looking up a queue name, but does not support inserting a name in or deleting a name from the service directory.

#### What the component does

This component uses a simple algorithm that returns a fixed queue-manager name for any queue name with which it is invoked. This component does not hold a database of queue names, and therefore does not support the insert and delete functions.

#### How the component is used

The component `XYZ_name_serv` is then installed on the same queue manager as the MQSeries DCE-based name services component. The *ServiceComponent* stanzas are ordered so that the DCE-based component is invoked first. Any calls to insert or delete a queue in a component directory are handled by the DCE-based component—it is the only one that implements these functions. However, a lookup call—which the DCE-based component is unable to resolve—is passed on to the lookup-only component, `XYZ_name_serv`. This component supplies a queue-manager name from its simple algorithm.

#### Omitting entry points

You can design a service component not to implement some functions. The installable services framework places no restrictions on which functions may be omitted. However, for specific installable services, omission of one or more functions might be logically inconsistent with the purpose of the service.

### Example of entry points

Table 24 on page 431 shows an example of the installable name service for which the two components have been installed. Each supports a different set of functions associated with this particular installable service. For insert function, the ABC component entry-point is invoked first. Entry points that have not been defined to the service (using **MQZEP**) are assumed to be NULL. An entry-point for initialization is provided in the table, but this is not required because initialization is carried out by the main entry-point of the component.

When the queue manager has to use an installable service, it uses the entry-points defined for that service (the columns in Table 24 on page 431). Taking each component in turn, the queue manager determines the address of the routine that implements the required function. It then calls the routine, if it exists. If the operation is successful, any results and status information are used by the queue manager.

Table 24. Example of entry-points for an installable service

Function number	ABC name service component	XYZ name service component
MQZID_INIT_NAME (Initialize)	ABC_initialize()	XYZ_initialize()
MQZID_TERM_NAME (Terminate)	ABC_terminate()	XYZ_terminate()
MQZID_INSERT_NAME (Insert)	ABC_Insert()	NULL
MQZID_DELETE_NAME (Delete)	ABC_Delete()	NULL
MQZID_LOOKUP_NAME (Lookup)	NULL	XYZ_Lookup()

If the routine does not exist, the queue manager may repeat this process for the next component in the list. In addition, if the routine does exist but returns a code indicating that it could not perform the operation, the attempt continues with the next available component. Routines in service components may return a code that indicates that no further attempts to perform the operation should be made.

## Using multiple service components

---

## Chapter 12. Authorization service

The authorization service is an installable service that is available on:

- MQSeries for AIX
- MQSeries for AT&T GIS UNIX
- MQSeries for Digital OpenVMS
- MQSeries for HP-UX
- MQSeries for OS/2 Warp
- MQSeries for SINIX and DC/OSx
- MQSeries for Sun Solaris
- MQSeries for Tandem NonStop Kernel
- MQSeries for Windows NT

This chapter discusses:

- “Object authority manager (OAM)”
- “Authorization service on UNIX systems” on page 434
- “Authorization service on Windows NT” on page 435
- “Authorization service on MQSeries for OS/2 Warp” on page 436
- “Authorization service on Digital OpenVMS” on page 437
- “Authorization service on Tandem NSK” on page 438
- “Authorization service interface” on page 438

The authorization service enables queue managers to invoke authorization facilities, for example, checking that a user ID has authority to open a queue.

This service is a component of the MQSeries security enabling interface (SEI), which is part of the MQSeries framework.

---

### Object authority manager (OAM)

The authorization service component supplied with the MQSeries products is called the Object Authority Manager (OAM). By default, the OAM is active and works with the control commands **dspmqaout** (display authority) and **setmqaut** (set/reset authority).

The syntax of these commands and how to use them are described in detail in the following manuals:

- For UNIX systems and Windows NT – “dspmqaout (Display authority)” and “setmqaut (Set/reset authority)” in the *MQSeries System Administration* book.
- For Digital OpenVMS – the *MQSeries for Digital OpenVMS System Management Guide*.
- For Tandem NSK – the *MQSeries for Tandem NonStop Kernel System Management Guide*.

The OAM works with the *entity* of a principal or group, except on Tandem NonStop Kernel which works only at the group level. These entities vary from platform to platform.

When an MQI request is made or a command is issued, the OAM checks the authorization of the entity associated with the operation to see whether it can:

- Perform the requested operation.
- Access the specified queue manager resources.

The authorization service enables you to augment or replace the authority checking provided for queue managers by writing your own authorization service component.

### Defining the service to the operating system

The authorization service stanzas in the the queue manager configuration file `qm.ini` (or registry on Windows NT), define the authorization service to the queue manager. See “Configuring services and components” on page 427 for information about the types of stanza.

---

## Authorization service on UNIX systems

On these platforms:

### Principal

Is a UNIX system user ID, or an ID associated with an application program running on behalf of a user.

### Group

Is a UNIX system-defined collection of principals.

Authorizations can be granted or revoked at the group level.

### Configuring authorization service stanzas: UNIX systems

On MQSeries for UNIX systems, each queue manager has its own queue manager configuration file. For example, on AIX, the default path and file name of the queue manager configuration file for queue manager QMNAME is `/var/mqm/qmgrs/QMNAME/qm.ini`.

The *Service* stanza and the *ServiceComponent* stanza for the default authorization component are added to `qm.ini` automatically, but can be overridden through the use of `mqsnoaut`. Any other *ServiceComponent* stanzas must be added manually.

For example, the following stanzas in the queue manager configuration file define two authorization service components on MQSeries for AIX:

```

Service:
  Name=AuthorizationService
  EntryPoints=7

ServiceComponent:
  Service=AuthorizationService
  Name=MQSeries.UNIX.authorization.service
  Module=/usr/mqm/lib/amqzfu
  ComponentDataSize=0

ServiceComponent:
  Service=AuthorizationService
  Name=user.defined.authorization.service
  Module=/usr/bin/udas01
  ComponentDataSize=96

```

Figure 11. Authorization service stanzas in *qm.ini*

The first service component stanza, `MQSeries.UNIX.authorization.service` defines the default authorization service component, the OAM. If you remove this stanza and restart the queue manager, the OAM is disabled and no authorization checks are made.

In the second (user-defined) service component stanza, `/usr/bin/udas01` is the path and file name of the code module for the user-defined component. For the user-defined service, the size of the data area that the component requires is specified as 96 bytes.

You must add the second service component stanza manually to the configuration file **before** you start the queue manager. The configuration file is read when the queue manager is started, therefore, if you change a stanza, the changes can only take effect when the queue manager is restarted.

---

## Authorization service on Windows NT

On this platform:

### Principal

Is a Windows NT user ID, or an ID associated with an application program running on behalf of a user.

### Group

Is a Windows NT group.

Authorizations can be granted or revoked at the principal or group level.

## Configuring authorization service stanzas: Windows NT

On MQSeries for Windows NT each queue manager has its own stanza in the registry.

The *Service* stanza and the *ServiceComponent* stanza for the default authorization component are added to the registry automatically, but can be overridden through the use of `mqsnout`. Any other *ServiceComponent* stanzas must be added manually.

On MQSeries for Windows NT Version 5.1 you can add an extra attribute, `SecurityPolicy`, using the MQSeries services.

The `SecurityPolicy` attribute is applicable only if the service specified on the `Service` stanza is the authorization service, that is, the default OAM. The `SecurityPolicy` attribute allows you to specify the security policy for each queue manager. The possible values are:

### Default

Specify `Default` if you want the default security policy to take effect. If a Windows NT security identifier (NT SID) is not passed to the OAM for a particular user ID, then an attempt is made to obtain the appropriate SID by searching the relevant security databases.

### NTSIDsRequired

Requires that an NT SID is passed to the OAM when performing security checks.

See "Security policies" in the *MQSeries System Administration* manual for more information.

The service component stanza, `MQSeries.WindowsNT.auth.service` defines the default authorization service component, the OAM. If you remove this stanza and restart the queue manager, the OAM is disabled and no authorization checks are made.

---

## Authorization service on MQSeries for OS/2 Warp

On MQSeries for OS/2, no authorization service component is supplied with the product. However, the facilities are there if you want to do this for yourself by writing your own authorization service component.

If you write your own authorization component, you must define what your component does, and implement it using the interface provided.

## Configuring authorization service stanzas: OS/2

On MQSeries for OS/2 each queue manager has its own queue manager configuration file. For example, the default path and file name of the queue manager configuration file for queue manager `QMNAME` is  
`C:\MQM\QMGRS\QMNAME\qm.ini`.

By default, the `Service` and `ServiceComponent` stanzas for the authorization service are not present in `qm.ini`.

To implement a user-written service, you must add these stanzas manually. For example, the following stanzas in the queue manager configuration file define an authorization service component on MQSeries for OS/2:

```

Service:
  Name=AuthorizationService
  EntryPoints=7

ServiceComponent:
  Service=AuthorizationService
  Name=user.defined.authorization.service
  Module=C:\MQM\DLL\UDAS01.DLL
  ComponentDataSize=128

```

Figure 12. Authorization service stanzas in *qm.ini* (OS/2)

These stanzas must be defined in *qm.ini* **before** you start the queue manager. The configuration file is read when the queue manager is started, therefore, if you change a stanza, the changes can only take effect when the queue manager is restarted.

---

## Authorization service on Digital OpenVMS

On this platform:

### Principal

Is a Digital OpenVMS system user ID, or an ID associated with an application program running on behalf of a user.

### Group

Is a Digital OpenVMS system-defined collection of principals.

Authorizations can be granted or revoked at the group level.

## Configuring authorization service stanzas: Digital OpenVMS

On MQSeries for Digital OpenVMS each queue manager has its own queue manager configuration file. The default path and file name of the queue manager configuration file for queue manager QMNAME is  
 MQS\_ROOT:[MQM.QMGRS.QMNAME]QM.INI.

The *Service* stanza and the *ServiceComponent* stanza for the default authorization component are added to *qm.ini* automatically, but can be overridden through the use of *mqsnout*. Any other *ServiceComponent* stanzas must be added manually.

```

Service:
  Name=AuthorizationService
  EntryPoints=9

ServiceComponent:
  Service=AuthorizationService
  Name=MQSeries.UNIX.Auth.Service
  Module=amqzfu
  ComponentDataSize=1024

```

Figure 13. Authorization service stanzas (Digital OpenVMS)

The service component stanza, `MQSeries.UNIX.auth.service` defines the default authorization service component, the OAM. If you remove this stanza and restart the queue manager, the OAM is disabled and no authorization checks are made.

---

## Authorization service on Tandem NSK

On this platform:

### Group

Is a Tandem NSK system-defined group.

Authorizations can be granted or revoked at the group level.

## Configuring authorization service stanzas: Tandem NSK

On MQSeries for Tandem NSK each queue manager has its own queue manager configuration file. The path and file name of the queue manager configuration file depends on the name of the queue manager. You should look in the `mq5.ini` file to find the name of the file. For example, the sub-volume of queue manager QMQM is QMQMD.

The *Service* stanza and the *ServiceComponent* stanza for the default authorization component are added to `qm.ini` automatically, but can be overridden through the use of `mq5snoaut`. Any other *ServiceComponent* stanzas must be added manually.

```
Service:
  Service=AuthorizationService
  EntryPoints=9

ServiceComponent:
  Service=AuthorizationService
  Name=MQSeries.TANDEM.auth.service
  Module=MQOAM
  ComponentDataSize=0
  ComponentID=0
```

Figure 14. Authorization service stanzas (Tandem NSK)

The service component stanza, `MQSeries.TANDEM.auth.service` defines the default authorization service component, the OAM. If you remove this stanza and restart the queue manager, the OAM is disabled and no authorization checks are made.

---

## Authorization service interface

The authorization service provides the following entry points for use by the queue manager:

### MQZ\_INIT\_AUTHORITY

Initialize authorization service component.

### MQZ\_TERM\_AUTHORITY

Terminate authorization service component.

### MQZ\_CHECK\_AUTHORITY

Checks whether an entity has authority to perform one or more operations on a specified object.

**MQZ\_SET\_AUTHORITY**

Sets the authority that an entity has to a specified object.

**MQZ\_GET\_AUTHORITY**

Gets the authority that an entity has to access a specified object.

**MQZ\_GET\_EXPLICIT\_AUTHORITY**

Gets either the authority that a named group has to access a specified object (but without the additional authority of the **nobody** group) or the authority that the primary group of the named principal has to access a specified object.

**MQZ\_COPY\_ALL\_AUTHORITY**

Copy all the current authorizations that exist for a referenced object to another object.

**MQZ\_DELETE\_AUTHORITY**

Deletes all authorizations associated with a specified object.

In addition, on MQSeries for Windows NT Version 5.1, the authorization service provides the following entry points for use by the queue manager:

- **MQZ\_CHECK\_AUTHORITY\_2**
- **MQZ\_SET\_AUTHORITY\_2**
- **MQZ\_GET\_AUTHORITY\_2**
- **MQZ\_GET\_EXPLICIT\_AUTHORITY\_2**

These entry points support the use of the Windows NT Security Identifier (NT SID).

These names are defined as **typedefs**, in the header file `cmqzc.h`, which can be used to prototype the component functions.

The initialization function (**MQZ\_INIT\_AUTHORITY**) must be the main entry point for the component. The other functions are invoked through the entry point address that the initialization function has added into the component entry point vector.

See “Creating your own service component” on page 429 for more information. The supplied sample, “Sample program for user identifier service” on page 449, shows how to write a program for an installable service. Use this example as a basis for your own programs, bearing in mind that this sample is written for OS/2.



---

## Chapter 13. Name service

This chapter discusses:

- “How the name service works”
- “Using DCE to share queues on different queue managers” on page 444
- “DCE configuration” on page 445

The MQSeries name service provides support to the queue manager for looking up the name of the queue manager that owns a specified queue. No other queue attributes can be retrieved from a name service.

The name service is an installable service, which enables an application to open remote queues for output as if they were local queues. A name service is not invoked for objects other than queues.

**Note:** The remote queues *must* have their *Scope* attribute set to CELL.

The name service is available on:

- MQSeries for AIX
- MQSeries for AT&T GIS UNIX
- MQSeries for Digital OpenVMS
- MQSeries for HP-UX
- MQSeries for OS/2 Warp
- MQSeries for SINIX and DC/OSx
- MQSeries for Sun Solaris
- MQSeries for Windows NT

When an application opens a queue, the name of the queue is first looked for in the queue manager's directory. If it is not found there, it is then looked for in as many name services as have been configured, until one is found that recognizes the queue name. If none recognizes the name, the open fails.

The name service returns the owning queue manager for that queue. The queue manager then continues with the MQOPEN request as if the command had specified the queue and queue manager name in the original request.

The name service interface (NSI) is part of the MQSeries framework.

---

### How the name service works

If a queue definition specifies the *Scope* attribute as queue manager (SCOPE(QMGR) in MQSC) the queue definition (along with all the queue attributes) is stored in the queue manager's directory only; this cannot be replaced by an installable service.

If a queue definition specifies the *Scope* attribute as cell (SCOPE(CELL) in MQSC) the queue definition is also stored in the queue manager's directory, along with all the queue attributes. However, the queue and queue-manager name are also stored in a name service. If no service is available that can store this information, a queue with the *Scope* cell cannot be defined.

## Name service

The directory in which the information is stored may be managed by the service, or the service may use an underlying service (such as a DCE directory) for this purpose. In either case, however, definitions stored in the directory must persist, even after the component and queue manager have terminated, until they are explicitly deleted.

### Notes:

1. You do need to define the channel to send a message to a remote host's local queue definition (with a scope of CELL) on a different queue manager within a naming directory cell.
2. You cannot get messages directly from the remote queue, even when it has a scope of CELL.
3. No remote queue definition is required when sending to a queue with a scope of CELL.

The point of the naming service is that the destination queue is defined centrally, although you still need a transmission queue to the destination queue manager.

The transmission queue on the local system must have the same name as the queue manager owning the target queue, with the scope of cell, on the remote system.

For example, if the remote queue manager has the name QM01, then the transmission queue on the local system must also have the name QM01. See "Managing queue name translations" in the *MQSeries Intercommunication* book for further information.

## Name service interface

A name service provides the following entry points for use by the queue manager:

<b>MQZ_INIT_NAME</b>	Initialize the name service component.
<b>MQZ_TERM_NAME</b>	Terminate the name service component.
<b>MQZ_LOOKUP_NAME</b>	Look up the queue-manager name for the specified queue.
<b>MQZ_INSERT_NAME</b>	Insert an entry containing the owning queue-manager name for the specified queue into the directory used by the service.
<b>MQZ_DELETE_NAME</b>	Delete the entry for the specified queue from the directory used by the service.

If there is more than one name service configured:

- For lookup, the MQZ\_LOOKUP\_NAME function is invoked for each service in the list until the queue name is resolved (unless any component indicates that the search should stop).
- For insert, the MQZ\_INSERT\_NAME function is invoked for the first service in the list that supports this function.
- For delete, the MQZ\_DELETE\_NAME function is invoked for the first service in the list that supports this function.

It is not therefore useful to have more than one component that supports the insert and delete functions. However, a component that only supports lookup is feasible, and could be used, for example, as the last component in the list to resolve any name, that is not known by any other name service component, to a queue manager at which the name may be defined.

In the C programming language the names are defined as function datatypes using the typedef statement. These can be used to prototype the service functions, to ensure that the parameters are correct.

The header file that contains all the material specific to installable services is `cmqzc.h` for the C language.

Apart from the initialization function (`MQZ_INIT_NAME`) – which must be the component's main entry point – functions are invoked by the entry point address that the initialization function has added, using the `MQZEP` call.

The following examples of configuration file stanzas for the name service specify a name service component provided by the (fictitious) ABC company.

```
# Stanza for name service
Service:
  Name=NameService
  EntryPoints=5

# Stanza for name service component, provided by ABC
ServiceComponent:
  Service=NameService
  Name=ABC.Name.Service
  Module=disk:[dir.dir]abcname
  ComponentDataSize=1024
```

Figure 15. Name service stanzas in `qm.ini` (for Digital OpenVMS)

```
# Stanza for name service
Service:
  Name=NameService
  EntryPoints=5

# Stanza for name service component, provided by ABC
ServiceComponent:
  Service=NameService
  Name=ABC.Name.Service
  Module=C:\MQM\DLL\ABCNAME.DLL
  ComponentDataSize=1024
```

Figure 16. Name service stanzas in `qm.ini` (for OS/2)

```
# Stanza for name service
Service:
  Name=NameService
  EntryPoints=5

# Stanza for name service component, provided by ABC
ServiceComponent:
  Service=NameService
  Name=ABC.Name.Service
  Module=/usr/lib/abcname
  ComponentDataSize=1024
```

Figure 17. Name service stanzas in *qm.ini* (for UNIX systems)

**Note:** On Windows NT, name service stanza information is stored in the registry.

---

## Using DCE to share queues on different queue managers

IBM supplies an implementation of a name service that uses DCE (Distributed Computing Environment), although you are free to write your own component that does not use DCE.

To use the supplied name service component, you must define the name service and its installed component to the queue manager. You do this by inserting the appropriate stanza in the queue manager configuration file (*qm.ini*) file, or the Registry for Windows NT. See “Queue manager configuration files, *qm.ini*” in the *MQSeries System Administration* book for details. You must also do some DCE configuration.

If your queue managers are located on nodes within a Distributed Computing Environment (DCE) cell, you can configure them to share queues. Applications can then connect to one queue manager and open a queue for output on *another* queue manager on another node.

Normally the queue manager rejects open requests from a local application if the queue is not defined on that queue manager. However, when DCE names is in use the remote queue does not need to be defined on the local queue manager. Also if an appropriate set of transmission queues are defined the queue may be moved between remote queue managers within the DCE cell without any changes being required to the local definitions.

## Configuration tasks for shared queues

This section describes how you set up shared queues on queue managers that reside on nodes that are within the DCE cell.

For each queue manager:

1. Use the **endmqm** command to stop the queue manager if it is running.
2. Configure the name service by adding the required name service stanza to the queue manager configuration file. The contents of this stanza are described in “Queue manager configuration files, *qm.ini*” in the *MQSeries System Administration* book. To invoke the name service, you have to restart the queue manager.

3. Use the **strmqm** command to restart the queue manager.
4. Set up channels for messaging between queue managers; see the *MQSeries Intercommunication* book for further details.

For any queue that you want to be shared, specify the SCOPE attribute as CELL. For example, use these MQSC commands:

```
DEFINE QLOCAL (GREY.PUBLIC.QUEUE) SCOPE(CELL)
or
ALTER QLOCAL (PINK.LOCAL.QUEUE) SCOPE(CELL)
```

The queue created or altered must belong to a queue manager on a node within the DCE cell.

---

## DCE configuration

To use the supplied name service component, you must have the OSF Distributed Computing Environment (DCE) Directory Service configured. This service enables applications that connect to one queue manager to open queues that belong to another queue manager in the same DCE cell.

The name service stanzas in the queue manager configuration file `qm.ini`, or the Registry for Windows NT, define the name service to the queue manager.

Scripts are supplied that set up the DCE keytables, principal, and directory entries so that the supplied name service can run:

`dcesetsv`

Sets up a principal, and directory entries, on the DCE cell servers. It can be run from any host in the cell, and it is run **once** for the entire DCE cell

`dcesetkt`

Sets up a system keytable on the local host. It **must** be run on every host in the DCE cell on which the MQSeries DCE Naming Service is run.

## DCE configuration

These scripts are placed in the following directories:

**For OS/2 and Windows NT**

C:\MQM\TOOLS\DCE\SAMPLES, where C:\ is the installation drive.

**For UNIX systems**

/usr/mqm/samp on AIX

/opt/mqm/samp on AT&T GIS UNIX, HP-UX, SINIX and DC/OSx, SunOS, and Sun Solaris.

**For Digital OpenVMS**

mqs\_examples;dcesetup.com

**Note to users**

You need to install the MQ DCE option if you are using AIX or Sun Solaris.

## Chapter 14. User identifier service

This chapter discusses:

- “User identifier service interface” on page 448
- “Sample program for user identifier service” on page 449

This service is available on MQSeries for OS/2 Warp only.

The *user identifier service* enables queue managers running under OS/2 to obtain a user-defined user ID.

By default, the user ID associated with MQI applications running under OS/2 is 0S2.

This user ID is used by the local queue manager when an application issues an MQCONN request. That is, the queue manager inserts this user ID into the context fields of any messages that are sent by the application.

The user identification service enables a user-defined user ID to be substituted in place of the supplied one. The mechanism for doing this must be defined by the user.

### Defining the service to OS/2

The user identifier service stanzas in the queue manager configuration file `qm.ini` defines the User Identifier service to the queue manager. By default, this file is located in `C:\mqm\qmgrs\QMNAME\qm.ini`. You must add these stanzas manually to the configuration file **before** you start the queue manager.

For example, the following queue manager stanza defines the supplied user identifier service component.

```
Service:
  Name=UserIdentifierService
  EntryPoints=3

ServiceComponent:
  Service=UserIdentifierService
  Name=MQSeries.environment.UserID.Service
  Module=C:\MQM\DLL\AMQZFCB2.DLL
  ComponentDataSize=24
```

For the example shown in “Sample program for user identifier service” on page 449, the following assignments must be made:

`Name=UserIdentifierService`  
Specifies the type of service as a user identifier service.

`EntryPoints=3`  
There are three entry points in the service. See “MQZEP - Add component entry point” on page 455 for more information.

`Service=UserIdentifierService`  
Specifies that this component belongs to the user identifier service. The name must match the name in the service stanza.

## User identifier service interface

Name=MQSeries.environment.UserID.Service

The name of the service component. This name identifies the component in any messages that are generated from it.

Module=C:\mqm\d11\AMQZFCB2.DLL

The path and name of the DLL containing the component functions.

ComponentDataSize=24

The size of the data to be passed between the module and the queue manager. In this case, 24 bytes, 12 each for the user ID and the (optional) password respectively.

The queue manager configuration file—and therefore the user identifier service stanza—is read when the queue manager is started. Therefore, if you change the stanza, the changes can only take effect when the queue manager is restarted.

---

## User identifier service interface

The user identifier service provides the following entry points for use by the queue manager:

**MQZ\_INIT\_USERID** Initialize user identifier service. This routine must be called before any others.

**MQZ\_FIND\_USERID** Find user ID.

**MQZ\_TERM\_USERID** Terminate user identifier service.

These names are defined as **typedefs** in `cmqzc.h`, which can be used to prototype the component functions.

The initialization function (**MQZ\_INIT\_USERID**), is the main entry point for the component. Other functions are invoked by the entry point address which the initialization function has added into the component entry point vector.

## User identifier service samples

MQSeries for OS/2 provides two user identifier samples, a source sample `AMQSZFC0.C` and a DLL `AMQZFCB2.DLL`.

The supplied sample `AMQSZFC0.C` shows how to use environmental variables to specify a user ID and password. See “Sample program for user identifier service” on page 449, for an explanation and a source file listing.

You can use `AMQZFCB2.DLL` directly, by simply specifying the path and filename in the *ServiceComponent* stanza in `qm.ini`. “Defining the service to OS/2” on page 447 shows the appropriate stanzas.

**Note:** This sample is distinct from the supplied sample user identifier service DLL `AMQZFCB2.DLL`, which has a similar, but not identical function.

---

## Sample program for user identifier service

The sample AMQZFC0.C is supplied with MQSeries for OS/2. Although it is not available on other platforms, it does show you how to create an installable service. You can, therefore, use it as a basis for your own installable services.

To use the user identifier service, you must set the user identifier service stanza in the qm.ini file. See “Defining the service to OS/2” on page 447 for details.

### Purpose

AMQSZFC0.C enables a queue manager to insert a user-defined user ID into messages sent by applications connected to this queue manager. The mechanism for this is user-defined (OS/2) environment variables. You could replace this with your own mechanism.

### Setting the environment variables

The user-defined environment variables are MQS\_USERID and MQS\_PASSWORD, which are used for the user ID and password respectively. You must set these, before you start the queue manager. Use the following OS/2 commands:

```
SET MQS_USERID=LEMON
SET MQS_PASSWORD=ABC123
```

You can, for example, add these lines to your CONFIG.SYS file.

The sample copies these variables into shared memory where they can be accessed by MQSeries internal processes.

**Note:** The password you supply is **not** used by MQSeries for OS/2 Warp.

### How the sample works

The sample consists of the following:

- Initialize the service entry point vectors, using the **MQZEP** function to pass the address of a user-written function entry point. **MQZEP** is called for each such function.
- Initialize this instance of the service.
- For the primary initialization, obtain the user ID and password and put them into this component's shared memory.

The **MQZ\_FIND\_USERID** (Find User ID) function is invoked by the local queue manager whenever an application makes an MQCONN request. In this case, the function retrieves the user ID and password from shared memory.

**Note:** Changing the environment variables after the queue manager is started has no effect. The original ones are used.

## Sample program

```

/*****/
/*
/* Program name: AMQSZFC0
/*
/*
/* Description : Sample program for the UserIdentifierService
/* using the environment variables to get the
/* password and userID
/*
/*
/* Statement: Licensed Materials - Property of IBM
/*
/*
/* 33H2205, 5622-908
/* 33H2267, 5765-623
/* 29H0990, 5697-176
/* (C) Copyright IBM Corp. 1994, 1995
/*
/*****/

/*-----*/
/* Includes
/*-----*/

#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#include <cmqc.h> /* MQI API */
#include <cmqzc.h> /* MQI API for installable services */

/*-----*/
/* Typedefs
/*-----*/

typedef struct tag_USERDATA USERDATA, *PUSERDATA;

struct tag_USERDATA
{
    MQCHAR12 UserID; /* UserID */
    MQCHAR12 Password; /* Password */
};

/*-----*/
/* Prototypes
/*-----*/

MQZ_INIT_USERID mqs_userid_init;
MQZ_FIND_USERID mqs_userid_find;

/*****/
/*
/* Function Name: mqs_userid_init
/*
/*
/* Description: Initialise the instance of the Userid Pluggable
/* Service
/*
/*****/
void MQENTRY mqs_userid_init (MQHCONFIG hconfig,
                             MQLONG options,
                             MQCHAR48 QMgrName,
                             MQLONG ComponentDataLength,
                             PMQBYTE data,
                             PMQLONG Version,
                             PMQLONG CompCode_ptr,
                             PMQLONG Reason_ptr)
{
    MQLONG cc = MQCC_OK;
    MQLONG rc = MQRC_NONE;

    /*****/
    /* Initialise the Entry point vector
    /*****/

    if (cc == MQCC_OK) MQZEP(hconfig, MQZID_INIT_USERID, (PMQFUNC) mqs_userid_init, &cc, &rc);

```

```

if (cc == MQCC_OK) MQZEP(hconfig, MQZID_TERM_USERID, (PMQFUNC) NULL, &cc, &rc);
if (cc == MQCC_OK) MQZEP(hconfig, MQZID_FIND_USERID, (PMQFUNC) mqs_userid_find, &cc, &rc);

if (cc != MQCC_OK)
{
    cc = MQCC_FAILED;
    rc = MQRC_INITIALIZATION_FAILED;
}

/*****
/* For the primary initialisation, Obtain the Userid and Password */
/* and put it into this components shared storage */
*****/

if ((cc == MQCC_OK) && (options == MQZIO_PRIMARY))
{
    char *env_userid = getenv("MQS_USERID");
    char *env_password = getenv("MQS_PASSWORD");

    if ((ComponentDataLength == sizeof(USERDATA)) &&
        (env_userid != NULL) &&
        (env_password != NULL))
    {
        PUSERDATA UserData = (PUSERDATA) data;

        strncpy(UserData->UserID, env_userid, sizeof(MQCHAR12));
        strncpy(UserData->Password, env_password, sizeof(MQCHAR12));
    }
    else
    {
        cc = MQCC_FAILED;
        rc = MQRC_INITIALIZATION_FAILED;
    }
}

/*****
/* Set the return code and reason */
*****/

*CompCode_ptr = cc;
*Reason_ptr = rc;

return;
}

/*****
/*
/* Function Name: mqs_userid_find */
/*
/* Description: Find the userID/password */
/*
*****/
void MQENTRY mqs_userid_find (MQCHAR48 QMgrName,
                             MQCHAR12 UserID,
                             MQCHAR12 Password,
                             PMQBYTE ComponentData,
                             PMQLONG Continuation,
                             PMQLONG CompCode_ptr,
                             PMQLONG Reason_ptr)
{
    PUSERDATA pUserData = (PUSERDATA) ComponentData;

    /*****
    /* Return the UserID & password to the caller */
    *****/

    memcpy (UserID, pUserData->UserID, sizeof(MQCHAR12));
    memcpy (Password, pUserData->Password, sizeof(MQCHAR12));

    /*****
    /* Set the continuation, return code & reason codes */
    *****/

```

## Sample program

```
*Continuation = MQZCI_DEFAULT;  
*CompCode_ptr = MQCC_OK;  
*Reason_ptr   = MQRC_NONE;  
  
return;  
}
```

## Chapter 15. Installable services interface

This chapter provides reference information for the installable services. It includes:

- “How the functions are shown” on page 454
- “MQZEP - Add component entry point” on page 455
- “MQZED - Entity Data structure” on page 458
- “MQZ\_CHECK\_AUTHORITY - Check authority” on page 460
- “MQZ\_CHECK\_AUTHORITY\_2 - Check authority 2” on page 466
- “MQZ\_COPY\_ALL\_AUTHORITY - Copy all authority” on page 472
- “MQZ\_DELETE\_AUTHORITY - Delete authority” on page 475
- “MQZ\_GET\_AUTHORITY - Get authority” on page 478
- “MQZ\_GET\_AUTHORITY\_2 - Get authority 2” on page 482
- “MQZ\_GET\_EXPLICIT\_AUTHORITY - Get explicit authority” on page 486
- “MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 - Get explicit authority 2” on page 490
- “MQZ\_INIT\_AUTHORITY - Initialize authorization service component” on page 494
- “MQZ\_SET\_AUTHORITY - Set authority” on page 497
- “MQZ\_SET\_AUTHORITY\_2 - Set authority 2” on page 501
- “MQZ\_TERM\_AUTHORITY - Terminate authorization service component” on page 505
- “MQZ\_DELETE\_NAME - Delete name from service” on page 508
- “MQZ\_INIT\_NAME - Initialize name service component” on page 511
- “MQZ\_INSERT\_NAME - Insert name in service” on page 514
- “MQZ\_LOOKUP\_NAME - Lookup name in service” on page 517
- “MQZ\_TERM\_NAME - Terminate name service component” on page 520
- “MQZ\_FIND\_USERID - Find user ID” on page 523
- “MQZ\_INIT\_USERID - Initialize user identifier service component” on page 526
- “MQZ\_TERM\_USERID - Terminate user identifier service component” on page 529

The functions and data types are in alphabetic order within the group for each service type.

Table 25 (Page 1 of 2). Installable services functions

<b>Service type</b>	<b>Functions</b>	<b>page</b>
<b>All</b>	MQZEP - Add component entry point	455
	MQHCONFIG - Configuration handle	457
	PMQFUNC - Pointer to function	457
<b>Authorization</b>	MQZ_CHECK_AUTHORITY	460
	MQZ_COPY_ALL_AUTHORITY	472
	MQZ_DELETE_AUTHORITY	475
	MQZ_GET_AUTHORITY	478
	MQZ_GET_EXPLICIT_AUTHORITY	486
	MQZ_INIT_AUTHORITY	494
	MQZ_SET_AUTHORITY	497
MQZ_TERM_AUTHORITY	505	
<b>Extended authorization</b>	MQZ_CHECK_AUTHORITY_2	466
	MQZ_GET_AUTHORITY_2	482
	MQZ_GET_EXPLICIT_AUTHORITY_2	490
	MQZ_SET_AUTHORITY_2	501

## Installable services

Table 25 (Page 2 of 2). Installable services functions

<b>Service type</b>	<b>Functions</b>	<b>page</b>
<b>Name</b>	MQZ_DELETE_NAME	508
	MQZ_INIT_NAME	511
	MQZ_INSERT_NAME	514
	MQZ_LOOKUP_NAME	517
	MQZ_TERM_NAME	520
<b>User Identifier</b>	MQZ_FIND_USERID	523
	MQZ_INIT_USERID	526
	MQZ_TERM_USERID	529
<b>Note:</b> The Extended Authorization functions apply only to the MQSeries Version 5.1 products.		

---

## How the functions are shown

For each function there is a description, including the function identifier (for MQZEP).

The *parameters* are shown listed in a box. The parameters must occur in the order shown and they must all be present.

## Parameters and data types

Each parameter name is followed by its data type in parentheses. These are the elementary data types described in Chapter 1, "Data type descriptions - elementary" in the *MQSeries Application Programming Reference* manual.

The C language invocation is also given, after the description of the parameters.

---

## MQZEP - Add component entry point

This function is invoked by a service component, during initialization, to add an entry point to the entry point vector for that service component.

MQZEP (*Hconfig*, *Function*, *EntryPoint*, *CompCode*, *Reason*)

### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the component which is being configured for this particular installable service. It must be the same as the one passed to the component configuration function by the queue manager on the component initialization call.

*Function* (MQLONG) – input  
Function identifier.

Valid values for this are defined for each installable service.

If MQZEP is called more than once for the same function, the last call made provides the entry point which is used.

*EntryPoint* (PMQFUNC) – input  
Function entry point.

This is the address of the entry point provided by the component to perform the function.

The value NULL is valid, and indicates that the function is not provided by this component. NULL is assumed for entry points which are not defined using MQZEP.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.

MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE  
(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_FUNCTION\_ERROR  
(2281, X'8E9') Function identifier not valid for service.

MQRC\_HCONFIG\_ERROR  
(2280, X'8E8') Configuration handle not valid.

## **MQZEP - Add component entry point**

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## C invocation

```
MQZEP (Hconfig, Function, EntryPoint, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;    /* Configuration handle */
MQLONG    Function;   /* Function identifier */
PMQFUNC   EntryPoint; /* Function entry point */
MQLONG    CompCode;   /* Completion code */
MQLONG    Reason;     /* Reason code qualifying CompCode */
```

## MQHCONFIG - Configuration handle

The MQHCONFIG data type represents a configuration handle, that is, the component that is being configured for a particular installable service. A configuration handle must be aligned on its natural boundary.

**Note:** Applications must test variables of this type for equality only.

### MQHCONFIG C declaration

```
typedef MQLONG MQHCONFIG;
```

## PMQFUNC - Pointer to function

Pointer to a function.

### PMQFUNC C declaration

```
typedef void MQPOINTER PMQFUNC;
```

## MQZED - Entity Data structure

The following table summarizes the fields in the structure.

Field	Description	Page
<i>StrucId</i>	Structure identifier	458
<i>Version</i>	Structure version number	458
<i>EntityNamePtr</i>	Address of entity name	458
<i>EntityDomainPtr</i>	Address of entity domain name	459
<i>SecurityId</i>	Security identifier	459

The MQZED structure describes the information that is passed to the MQZAS\_VERSION\_2 authorization service calls.

## Fields

*StrucId* (MQCHAR4)

Structure identifier.

The value is:

MQZED\_STRUC\_ID

Identifier for entity descriptor structure.

For the C programming language, the constant MQZED\_STRUC\_ID\_ARRAY is also defined; this has the same value as MQZED\_STRUC\_ID, but is an array of characters instead of a string.

This is an input field to the service.

*Version* (MQLONG)

Structure version number.

The value is:

MQZED\_VERSION\_1

Version-1 entity descriptor structure.

The following constant specifies the version number of the current version:

MQZED\_CURRENT\_VERSION

Current version of entity descriptor structure.

This is an input field to the service.

*EntityNamePtr* (PMQCHAR)

Address of entity name.

This is a pointer to the name of the entity whose authorization is to be checked. The name itself is a null-terminated string.

This is an input field to the service.

*EntityDomainPtr* (PMQCHAR)

Address of entity domain name.

This is a pointer to the name of the domain containing the definition of the entity whose authorization is to be checked. The name itself is a null-terminated string.

This is an input field to the service.

*SecurityId* (MQBYTE40)

Security identifier.

This is the security identifier whose authorization is to be checked.

This is an input field to the service.

## C declaration

```
typedef struct tagMQZED {
    MQCHAR4   StrucId;           /* Structure identifier */
    MQLONG    Version;          /* Structure version number */
    PMQCHAR   EntityNamePtr;    /* Address of entity name */
    PMQCHAR   EntityDomainPtr;  /* Address of entity domain name */
    MQBYTE40  SecurityId;       /* Security identifier */
} MQZED;
```

---

### MQZ\_CHECK\_AUTHORITY - Check authority

This function is provided by an authorization service component, and is invoked by the queue manager to check whether an entity has authority to perform a particular action, or actions, on a specified object.

The function identifier for this function (for MQZEP) is MQZID\_CHECK\_AUTHORITY.

MQZ\_CHECK\_AUTHORITY (*QMgrName*, *EntityName*, *EntityType*, *ObjectName*, *ObjectType*, *Authority*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityName* (MQCHAR12) – input  
Entity name.

The name of the entity whose authorization to the object is to be checked. The maximum length of the string is 12 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

It is not essential for this entity to be known to the underlying security service. If it is not known, the authorizations of the special **nobody** group (to which all entities are assumed to belong) are used for the check. An all-blank name is valid and can be used in this way.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityName*. It is one of the following:

MQZAET\_PRINCIPAL  
Principal.  
MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object to which access is required. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_CHANNEL  
Channel.  
MQOT\_PROCESS  
Process definition.  
MQOT\_Q  
Queue.  
MQOT\_Q\_MGR  
Queue manager.

*Authority* (MQLONG) – input  
Authority to be checked.

If one authorization is being checked, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If more than one authorization is being checked, it is the bitwise OR of the corresponding MQZAO\_\* constants.

The following authorizations apply to use of the MQI calls:

MQZAO\_CONNECT  
Ability to use the MQCONN call.

MQZAO\_BROWSE  
Ability to use the MQGET call with a browse option.  
This allows the MQGMO\_BROWSE\_FIRST, MQGMO\_BROWSE\_MSG\_UNDER\_CURSOR, or MQGMO\_BROWSE\_NEXT option to be specified on the MQGET call.

MQZAO\_INPUT  
Ability to use the MQGET call with an input option.  
This allows the MQOO\_INPUT\_SHARED, MQOO\_INPUT\_EXCLUSIVE, or MQOO\_INPUT\_AS\_Q\_DEF option to be specified on the MQOPEN call.

MQZAO\_OUTPUT  
Ability to use the MQPUT call.  
This allows the MQOO\_OUTPUT option to be specified on the MQOPEN call.

MQZAO\_INQUIRE  
Ability to use the MQINQ call.  
This allows the MQOO\_INQUIRE option to be specified on the MQOPEN call.

MQZAO\_SET  
Ability to use the MQSET call.  
This allows the MQOO\_SET option to be specified on the MQOPEN call.

## MQZ\_CHECK\_AUTHORITY - Check authority

### MQZAO\_PASS\_IDENTITY\_CONTEXT

Ability to pass identity context.

This allows the MQOO\_PASS\_IDENTITY\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_PASS\_IDENTITY\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_PASS\_ALL\_CONTEXT

Ability to pass all context.

This allows the MQOO\_PASS\_ALL\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_PASS\_ALL\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_SET\_IDENTITY\_CONTEXT

Ability to set identity context.

This allows the MQOO\_SET\_IDENTITY\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_SET\_IDENTITY\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_SET\_ALL\_CONTEXT

Ability to set all context.

This allows the MQOO\_SET\_ALL\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_SET\_ALL\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_ALTERNATE\_USER\_AUTHORITY

Ability to use alternate user authority.

This allows the MQOO\_ALTERNATE\_USER\_AUTHORITY option to be specified on the MQOPEN call, and the MQPMO\_ALTERNATE\_USER\_AUTHORITY option to be specified on the MQPUT1 call.

### MQZAO\_ALL\_MQI

All of the MQI authorizations.

This enables all of the authorizations described above.

The following authorizations apply to administration of a queue manager:

### MQZAO\_CREATE

Ability to create objects of a specified type.

### MQZAO\_DELETE

Ability to delete a specified object.

### MQZAO\_DISPLAY

Ability to display the attributes of a specified object.

### MQZAO\_CHANGE

Ability to change the attributes of a specified object.

### MQZAO\_CLEAR

Ability to delete all messages from a specified queue.

### MQZAO\_AUTHORIZE

Ability to authorize other users for a specified object.

MQZAO\_ALL\_ADMIN

All of the administration authorizations.

The following authorizations apply to both use of the MQI and to administration of a queue manager:

MQZAO\_NONE

No authorizations.

MQZAO\_ALL

All authorizations.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_CHECK\_AUTHORITY this has the same effect as MQZCI\_STOP.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

## MQZ\_CHECK\_AUTHORITY - Check authority

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

**C invocation**

```
MQZ_CHECK_AUTHORITY (QMgrName, EntityName, EntityType, ObjectName,
                    ObjectType, Authority, ComponentData,
                    &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */
MQCHAR12 EntityName;        /* Entity name */
MQLONG   EntityType;        /* Entity type */
MQCHAR48 ObjectName;        /* Object name */
MQLONG   ObjectType;        /* Object type */
MQLONG   Authority;         /* Authority to be checked */
MQBYTE   ComponentData[n]; /* Component data */
MQLONG   Continuation;      /* Continuation indicator set by
                             component */
MQLONG   CompCode;          /* Completion code */
MQLONG   Reason;           /* Reason code qualifying CompCode */
```

---

### MQZ\_CHECK\_AUTHORITY\_2 - Check authority 2

This function is provided by an MQZAS\_VERSION\_2 authorization service component, and is invoked by the queue manager to check whether an entity has authority to perform a particular action, or actions, on a specified object.

The function identifier for this function (for MQZEP) is MQZID\_CHECK\_AUTHORITY.

MQZ\_CHECK\_AUTHORITY\_2 is similar to MQZ\_CHECK\_AUTHORITY, but with the *EntityName* parameter replaced by the *EntityData* parameter.

MQZ\_CHECK\_AUTHORITY\_2 (*QMgrName*, *EntityData*, *EntityType*, *ObjectName*, *ObjectType*, *Authority*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityData* (MQZED) – input  
Entity data.

Data relating to the entity whose authorization to the object is to be checked. See “MQZED - Entity Data structure” on page 458 for details.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityData*. It is one of the following:

MQZAET\_PRINCIPAL  
Principal.  
MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object to which access is required. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS

Process definition (not 16-bit Windows, 32-bit Windows).

MQOT\_Q

Queue.

MQOT\_Q\_MGR

Queue manager.

*Authority* (MQLONG) – input

Authority to be checked.

If one authorization is being checked, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If more than one authorization is being checked, it is the bitwise OR of the corresponding MQZAO\_\* constants.

The following authorizations apply to use of the MQI calls:

MQZAO\_CONNECT

Ability to use the MQCONN call.

MQZAO\_BROWSE

Ability to use the MQGET call with a browse option.

This allows the MQGMO\_BROWSE\_FIRST, MQGMO\_BROWSE\_MSG\_UNDER\_CURSOR, or MQGMO\_BROWSE\_NEXT option to be specified on the MQGET call.

MQZAO\_INPUT

Ability to use the MQGET call with an input option.

This allows the MQOO\_INPUT\_SHARED, MQOO\_INPUT\_EXCLUSIVE, or MQOO\_INPUT\_AS\_Q\_DEF option to be specified on the MQOPEN call.

MQZAO\_OUTPUT

Ability to use the MQPUT call.

This allows the MQOO\_OUTPUT option to be specified on the MQOPEN call.

MQZAO\_INQUIRE

Ability to use the MQINQ call.

This allows the MQOO\_INQUIRE option to be specified on the MQOPEN call.

MQZAO\_SET

Ability to use the MQSET call.

This allows the MQOO\_SET option to be specified on the MQOPEN call.

MQZAO\_PASS\_IDENTITY\_CONTEXT

Ability to pass identity context.

This allows the MQOO\_PASS\_IDENTITY\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_PASS\_IDENTITY\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

## MQZ\_CHECK\_AUTHORITY\_2 - Check authority 2

### MQZAO\_PASS\_ALL\_CONTEXT

Ability to pass all context.

This allows the MQOO\_PASS\_ALL\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_PASS\_ALL\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_SET\_IDENTITY\_CONTEXT

Ability to set identity context.

This allows the MQOO\_SET\_IDENTITY\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_SET\_IDENTITY\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_SET\_ALL\_CONTEXT

Ability to set all context.

This allows the MQOO\_SET\_ALL\_CONTEXT option to be specified on the MQOPEN call, and the MQPMO\_SET\_ALL\_CONTEXT option to be specified on the MQPUT and MQPUT1 calls.

### MQZAO\_ALTERNATE\_USER\_AUTHORITY

Ability to use alternate user authority.

This allows the MQOO\_ALTERNATE\_USER\_AUTHORITY option to be specified on the MQOPEN call, and the MQPMO\_ALTERNATE\_USER\_AUTHORITY option to be specified on the MQPUT1 call.

### MQZAO\_ALL\_MQI

All of the MQI authorizations.

This enables all of the authorizations described above.

The following authorizations apply to administration of a queue manager:

### MQZAO\_CREATE

Ability to create objects of a specified type.

### MQZAO\_DELETE

Ability to delete a specified object.

### MQZAO\_DISPLAY

Ability to display the attributes of a specified object.

### MQZAO\_CHANGE

Ability to change the attributes of a specified object.

### MQZAO\_CLEAR

Ability to delete all messages from a specified queue.

### MQZAO\_AUTHORIZE

Ability to authorize other users for a specified object.

### MQZAO\_START\_STOP

Ability to start and stop channels.

### MQZAO\_DISPLAY\_STATUS

Ability to display channel status.

### MQZAO\_RESOLVE\_RESET

Ability to resolve indoubt transactions and reset sequence numbers.

MQZAO\_PING  
Ability to ping a channel.

MQZAO\_ALL\_ADMIN  
All of the administration authorizations.

The following authorizations apply to both use of the MQI and to administration of a queue manager:

MQZAO\_NONE  
No authorizations.

MQZAO\_ALL  
All authorizations.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT  
Continuation dependent on queue manager.

For MQZ\_CHECK\_AUTHORITY\_2 this has the same effect as MQZCI\_STOP.

MQZCI\_CONTINUE  
Continue with next component.

MQZCI\_STOP  
Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.

MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE  
(0, X'000') No reason to report.

## MQZ\_CHECK\_AUTHORITY\_2 - Check authority 2

| If *CompCode* is MQCC\_FAILED:

| MQRC\_NOT\_AUTHORIZED

| (2035, X'7F3') Not authorized for access.

| MQRC\_SERVICE\_ERROR

| (2289, X'8F1') Unexpected error occurred accessing service.

| MQRC\_SERVICE\_NOT\_AVAILABLE

| (2285, X'8ED') Underlying service not available.

| For more information on these reason codes, see Chapter 5, "Return  
| codes" in the *MQSeries Application Programming Reference* manual.

**C invocation**

```

MQZ_CHECK_AUTHORITY_2 (QMgrName, &EntityData, EntityType,
                        ObjectName, ObjectType, Authority, ComponentData,
                        &Continuation, &CompCode, &Reason);

```

Declare the parameters as follows:

```

MQCHAR48 QMgrName;          /* Queue manager name */
MQZED    EntityData;       /* Entity data */
MQLONG   EntityType;       /* Entity type */
MQCHAR48 ObjectName;       /* Object name */
MQLONG   ObjectType;       /* Object type */
MQLONG   Authority;        /* Authority to be checked */
MQBYTE   ComponentData[n]; /* Component data */
MQLONG   Continuation;     /* Continuation indicator set by
                             component */
MQLONG   CompCode;         /* Completion code */
MQLONG   Reason;           /* Reason code qualifying CompCode */

```

---

### MQZ\_COPY\_ALL\_AUTHORITY - Copy all authority

This function is provided by an authorization service component. It is invoked by the queue manager to copy all of the authorizations that are currently in force for a reference object to another object.

The function identifier for this function (for MQZEP) is MQZID\_COPY\_ALL\_AUTHORITY.

MQZ\_COPY\_ALL\_AUTHORITY (*QMgrName*, *RefObjectName*, *ObjectName*,  
*ObjectType*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*RefObjectName* (MQCHAR48) – input  
Reference object name.

The name of the reference object, the authorizations for which are to be copied. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object for which accesses are to be set. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

*ObjectType* (MQLONG) – input  
Object type.

The type of object specified by *RefObjectName* and *ObjectName*. It is one of the following:

MQOT\_PROCESS  
Process definition.  
MQOT\_Q  
Queue.  
MQOT\_Q\_MGR  
Queue manager.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by

this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output

Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_COPY\_ALL\_AUTHORITY this has the same effect as MQZCI\_STOP.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output

Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_UNKNOWN\_REF\_OBJECT

(2294, X'8F6') Reference object unknown.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

### C invocation

```
MQZ_COPY_ALL_AUTHORITY (QMgrName, RefObjectName, ObjectName, ObjectType,  
                        ComponentData, &Continuation, &CompCode,  
                        &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;           /* Queue manager name */  
MQCHAR48 RefObjectName;      /* Reference object name */  
MQCHAR48 ObjectName;         /* Object name */  
MQLONG   ObjectType;         /* Object type */  
MQBYTE   ComponentData[n];   /* Component data */  
MQLONG   Continuation;       /* Continuation indicator set by  
                             component */  
MQLONG   CompCode;           /* Completion code */  
MQLONG   Reason;             /* Reason code qualifying CompCode */
```

---

## MQZ\_DELETE\_AUTHORITY - Delete authority

This function is provided by an authorization service component, and is invoked by the queue manager to delete all of the authorizations associated with the specified object.

The function identifier for this function (for MQZEP) is MQZID\_DELETE\_AUTHORITY.

MQZ\_DELETE\_AUTHORITY (*QMgrName*, *ObjectName*, *ObjectType*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object for which accesses are to be deleted. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS  
Process definition.  
MQOT\_Q  
Queue.  
MQOT\_Q\_MGR  
Queue manager.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

## MQZ\_DELETE\_AUTHORITY - Delete authority

*Continuation* (MQLONG) – output

Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_DELETE\_AUTHORITY this has the same effect as MQZCI\_STOP.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output

Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## C invocation

```
MQZ_DELETE_AUTHORITY (QMgrName, ObjectName, ObjectType, ComponentData,  
                      &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQCHAR48 ObjectName;       /* Object name */  
MQLONG   ObjectType;       /* Object type */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;        /* Completion code */  
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

---

### MQZ\_GET\_AUTHORITY - Get authority

This function is provided by an authorization service component, and is invoked by the queue manager to retrieve the authority that an entity has to access the specified object.

The function identifier for this function (for MQZEP) is MQZID\_GET\_AUTHORITY.

MQZ\_GET\_AUTHORITY (*QMgrName*, *EntityName*, *EntityType*, *ObjectName*,  
*ObjectType*, *Authority*, *ComponentData*, *Continuation*,  
*CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityName* (MQCHAR12) – input  
Entity name.

The name of the entity whose access to the object is to be retrieved. The maximum length of the string is 12 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityName*. The following value can be specified:

MQZAET\_PRINCIPAL

Principal.

MQZAET\_GROUP

Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object for which the entity's authority is to be retrieved. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS  
Process definition.  
MQOT\_Q  
Queue.  
MQOT\_Q\_MGR  
Queue manager.

*Authority* (MQLONG) – output  
Authority of entity.

If the entity has one authority, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If it has more than one authority, this field is the bitwise OR of the corresponding MQZAO\_\* constants.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT  
Continuation dependent on queue manager.  
For MQZ\_GET\_AUTHORITY this has the same effect as MQZCI\_CONTINUE.  
MQZCI\_CONTINUE  
Continue with next component.  
MQZCI\_STOP  
Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

## MQZ\_GET\_AUTHORITY - Get authority

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_UNKNOWN\_AUTH\_ENTITY

(2293, X'8F5') Authorization entity unknown to service.

MQRC\_UNKNOWN\_ENTITY

(2292, X'8F4') Entity unknown to service.

For more information on these reason codes, see "Reason codes" in the *MQSeries Application Programming Reference* manual.

**C invocation**

```
MQZ_GET_AUTHORITY (QMgrName, EntityName, EntityType, ObjectName,
                  ObjectType, &Authority, ComponentData,
                  &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */
MQCHAR12 EntityName;        /* Entity name */
MQLONG   EntityType;        /* Entity type */
MQCHAR48 ObjectName;        /* Object name */
MQLONG   ObjectType;        /* Object type */
MQLONG   Authority;         /* Authority of entity */
MQBYTE   ComponentData[n]; /* Component data */
MQLONG   Continuation;      /* Continuation indicator set by
                             component */
MQLONG   CompCode;          /* Completion code */
MQLONG   Reason;           /* Reason code qualifying CompCode */
```

---

### MQZ\_GET\_AUTHORITY\_2 - Get authority 2

This function is provided by an MQZAS\_VERSION\_2 authorization service component, and is invoked by the queue manager to retrieve the authority that an entity has to access the specified object.

The function identifier for this function (for MQZEP) is MQZID\_GET\_AUTHORITY.

MQZ\_GET\_AUTHORITY\_2 is similar to MQZ\_GET\_AUTHORITY, but with the *EntityName* parameter replaced by the *EntityData* parameter.

MQZ\_GET\_AUTHORITY\_2 (*QMgrName*, *EntityData*, *EntityType*, *ObjectName*, *ObjectType*, *Authority*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityData* (MQZED) – input  
Entity data.

Data relating to the entity whose access to the object is to be retrieved. See “MQZED - Entity Data structure” on page 458 for details.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityData*. The following value can be specified:

MQZAET\_PRINCIPAL  
Principal.  
MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object for which the entity's authority is to be retrieved. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS

Process definition (not 16-bit Windows, 32-bit Windows).

MQOT\_Q

Queue.

MQOT\_Q\_MGR

Queue manager.

*Authority* (MQLONG) – output  
Authority of entity.

If the entity has one authority, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If it has more than one authority, this field is the bitwise OR of the corresponding MQZAO\_\* constants.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_GET\_AUTHORITY\_2 this has the same effect as MQZCI\_CONTINUE.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

## MQZ\_GET\_AUTHORITY\_2 - Get authority 2

| If *CompCode* is MQCC\_OK:

| MQRC\_NONE

| (0, X'000') No reason to report.

| If *CompCode* is MQCC\_FAILED:

| MQRC\_NOT\_AUTHORIZED

| (2035, X'7F3') Not authorized for access.

| MQRC\_SERVICE\_ERROR

| (2289, X'8F1') Unexpected error occurred accessing service.

| MQRC\_SERVICE\_NOT\_AVAILABLE

| (2285, X'8ED') Underlying service not available.

| MQRC\_UNKNOWN\_AUTH\_ENTITY

| (2293, X'8F5') Authorization entity unknown to service.

| MQRC\_UNKNOWN\_ENTITY

| (2292, X'8F4') Entity unknown to service.

| For more information on these reason codes, see Chapter 5, "Return  
| codes" in the *MQSeries Application Programming Reference* manual.

**C invocation**

```
MQZ_GET_AUTHORITY_2 (QMgrName, &EntityData, EntityType, ObjectName,
                    ObjectType, &Authority, ComponentData,
                    &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */
MQZED    EntityData;       /* Entity data */
MQLONG   EntityType;       /* Entity type */
MQCHAR48 ObjectName;      /* Object name */
MQLONG   ObjectType;       /* Object type */
MQLONG   Authority;        /* Authority of entity */
MQBYTE   ComponentData[n]; /* Component data */
MQLONG   Continuation;     /* Continuation indicator set by
                           component */
MQLONG   CompCode;         /* Completion code */
MQLONG   Reason;           /* Reason code qualifying CompCode */
```

---

### MQZ\_GET\_EXPLICIT\_AUTHORITY - Get explicit authority

This function is provided by an authorization service component, and is invoked by the queue manager to retrieve the authority that a named group has to access a specified object (but without the additional authority of the **nobody** group), or the authority that the primary group of the named principal has to access a specified object.

The function identifier for this function (for MQZEP) is MQZID\_GET\_EXPLICIT\_AUTHORITY.

MQZ\_GET\_EXPLICIT\_AUTHORITY (*QMgrName*, *EntityName*, *EntityType*, *ObjectName*, *ObjectType*, *Authority*, *AuthorityMask*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityName* (MQCHAR12) – input  
Entity name.

The name of the entity whose access to the object is to be retrieved. The maximum length of the string is 12 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityName*. The following value can be specified:

MQZAET\_PRINCIPAL  
Principal.  
MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object for which the entity's authority is to be retrieved. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

## MQZ\_GET\_EXPLICIT\_AUTHORITY - Get explicit authority

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS  
Process definition.  
MQOT\_Q  
Queue.  
MQOT\_Q\_MGR  
Queue manager.

*Authority* (MQLONG) – output  
Authority of entity.

If the entity has one authority, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If it has more than one authority, this field is the bitwise OR of the corresponding MQZAO\_\* constants.

*AuthorityMask* (MQLONG) – input  
Mask for relevant authorities.

Only the authorities which correspond to a bit which is set on this mask should be affected by this call.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT  
Continuation dependent on queue manager.  
For MQZ\_GET\_EXPLICIT\_AUTHORITY this has the same effect as MQZCI\_CONTINUE.  
MQZCI\_CONTINUE  
Continue with next component.  
MQZCI\_STOP  
Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

## MQZ\_GET\_EXPLICIT\_AUTHORITY - Get explicit authority

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_UNKNOWN\_AUTH\_ENTITY

(2293, X'8F5') Authorization entity unknown to service.

MQRC\_UNKNOWN\_ENTITY

(2292, X'8F4') Entity unknown to service.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

**C invocation**

```
MQZ_GET_EXPLICIT_AUTHORITY (QMgrName, EntityName, EntityType,
                            ObjectName, ObjectType, &Authority,
                            AuthorityMask, ComponentData,
                            &Continuation, &CompCode,
                            &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */
MQCHAR12 EntityName;       /* Entity name */
MQLONG   EntityType;       /* Entity type */
MQCHAR48 ObjectName;       /* Object name */
MQLONG   ObjectType;       /* Object type */
MQLONG   Authority;        /* Authority of entity */
MQLONG   AuthorityMask;    /* Mask for relevant authorities */
MQBYTE   ComponentData[n]; /* Component data */
MQLONG   Continuation;     /* Continuation indicator set by
                             component */
MQLONG   CompCode;        /* Completion code */
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

---

## MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 - Get explicit authority 2

This function is provided by an MQZAS\_VERSION\_2 authorization service component, and is invoked by the queue manager to retrieve the authority that a named group has to access a specified object, or the authority that the named principal has to access a specified object.

The function identifier for this function (for MQZEP) is MQZID\_GET\_EXPLICIT\_AUTHORITY.

MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 is similar to MQZ\_GET\_EXPLICIT\_AUTHORITY, but with the *EntityName* parameter replaced by the *EntityData* parameter.

MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 (*QMgrName*, *EntityData*, *EntityType*, *ObjectName*, *ObjectType*, *Authority*, *AuthorityMask*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityData* (MQZED) – input  
Entity data.

Data relating to the entity whose access to the object is to be retrieved. See “MQZED - Entity Data structure” on page 458 for details.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityData*. The following value can be specified:

MQZAET\_PRINCIPAL  
Principal.  
MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object for which the entity's authority is to be retrieved. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

## MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 - Get explicit authority 2

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS

Process definition (not 16-bit Windows, 32-bit Windows).

MQOT\_Q

Queue.

MQOT\_Q\_MGR

Queue manager.

*Authority* (MQLONG) – output  
Authority of entity.

If the entity has one authority, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If it has more than one authority, this field is the bitwise OR of the corresponding MQZAO\_\* constants.

*AuthorityMask* (MQLONG) – input  
Mask for relevant authorities.

Only the authorities which correspond to a bit which is set on this mask should be affected by this call.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 this has the same effect as MQZCI\_CONTINUE.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

## MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 - Get explicit authority 2

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_UNKNOWN\_AUTH\_ENTITY

(2293, X'8F5') Authorization entity unknown to service.

MQRC\_UNKNOWN\_ENTITY

(2292, X'8F4') Entity unknown to service.

For more information on these reason codes, see Chapter 5, “Return codes” in the *MQSeries Application Programming Reference* manual.

**C invocation**

```
MQZ_GET_EXPLICIT_AUTHORITY_2 (QMgrName, &EntityData, EntityType,
                               ObjectName, ObjectType, &Authority,
                               AuthorityMask, ComponentData,
                               &Continuation, &CompCode,
                               &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */
MQZED    EntityData;        /* Entity data */
MQLONG   EntityType;        /* Entity type */
MQCHAR48 ObjectName;        /* Object name */
MQLONG   ObjectType;        /* Object type */
MQLONG   Authority;         /* Authority of entity */
MQLONG   AuthorityMask;     /* Mask for relevant authorities */
MQBYTE   ComponentData[n]; /* Component data */
MQLONG   Continuation;      /* Continuation indicator set by
                               component */
MQLONG   CompCode;          /* Completion code */
MQLONG   Reason;            /* Reason code qualifying CompCode */
```

---

### MQZ\_INIT\_AUTHORITY - Initialize authorization service component

This function is provided by an authorization service component, and is invoked by the queue manager during configuration of the component. It is expected to call MQZEP in order to provide information to the queue manager.

The function identifier for this function (for MQZEP) is MQZID\_INIT\_AUTHORITY.

*MQZ\_INIT\_AUTHORITY (Hconfig, Options, QMgrName, ComponentDataLength, ComponentData, Version, CompCode, Reason)*

#### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the particular component being initialized. It is to be used by the component when calling the queue manager with the MQZEP function.

*Options* (MQLONG) – input  
Initialization options.

It is one of the following:

MQZIO\_PRIMARY  
Primary initialization.

MQZIO\_SECONDARY  
Secondary initialization.

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*ComponentDataLength* (MQLONG) – input  
Length of component data.

Length in bytes of the *ComponentData* area. This length is defined in the component configuration data.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This is initialized to all zeroes before calling the component's primary initialization function. This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions (including the initialization function) provided by this component are preserved, and presented the next time one of this component's functions is called.

## MQZ\_INIT\_AUTHORITY - Initialize authorization service component

*Version* (MQLONG) – input/output  
Version number.

On input to the initialization function, this identifies the *highest* version number that the queue manager supports. The initialization function must change this, if necessary, to the version of the interface which *it* supports. If on return the queue manager does not support the version returned by the component, it calls the component's MQZ\_TERM\_AUTHORITY function and makes no further use of this component.

The following value is supported:

MQZAS\_VERSION\_1  
Version 1.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE  
(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_INITIALIZATION\_FAILED  
(2286, X'8EE') Initialization failed for an undefined reason.  
MQRC\_SERVICE\_NOT\_AVAILABLE  
(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see "Reason codes" in the *MQSeries Application Programming Reference* manual.

## MQZ\_INIT\_AUTHORITY - Initialize authorization service component

### C invocation

```
MQZ_INIT_AUTHORITY (Hconfig, Options, QMgrName, ComponentDataLength,  
                   ComponentData, &Version, &CompCode,  
                   &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;           /* Configuration handle */  
MQLONG Options;             /* Initialization options */  
MQCHAR48 QMgrName;         /* Queue manager name */  
MQLONG ComponentDataLength; /* Length of component data */  
MQBYTE ComponentData[n];   /* Component data */  
MQLONG Version;            /* Version number */  
MQLONG CompCode;           /* Completion code */  
MQLONG Reason;             /* Reason code qualifying CompCode */
```

---

## MQZ\_SET\_AUTHORITY - Set authority

This function is provided by an authorization service component, and is invoked by the queue manager to set the authority that an entity has to access the specified object.

The function identifier for this function (for MQZEP) is MQZID\_SET\_AUTHORITY.

**Note:** This function overrides any existing authorities. To preserve any existing authorities you must set them again with this function.

MQZ\_SET\_AUTHORITY (*QMgrName*, *EntityName*, *EntityType*, *ObjectName*,  
*ObjectType*, *Authority*, *ComponentData*, *Continuation*,  
*CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityName* (MQCHAR12) – input  
Entity name.

The name of the entity whose access to the object is to be set. The maximum length of the string is 12 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityName*. The following value can be specified:

MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object to which access is required. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

## MQZ\_SET\_AUTHORITY - Set authority

*ObjectType* (MQLONG) – input  
Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS  
Process definition.  
MQOT\_Q  
Queue.  
MQOT\_Q\_MGR  
Queue manager.

*Authority* (MQLONG) – input  
Authority to be checked.

If one authorization is being set, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If more than one authorization is being set, it is the bitwise OR of the corresponding MQZAO\_\* constants.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT  
Continuation dependent on queue manager.  
For MQZ\_SET\_AUTHORITY this has the same effect as MQZCI\_STOP.  
MQZCI\_CONTINUE  
Continue with next component.  
MQZCI\_STOP  
Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_NOT\_AUTHORIZED

(2035, X'7F3') Not authorized for access.

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_UNKNOWN\_AUTH\_ENTITY

(2293, X'8F5') Authorization entity unknown to service.

MQRC\_UNKNOWN\_ENTITY

(2292, X'8F4') Entity unknown to service.

For more information on these reason codes, see "Reason codes" in the *MQSeries Application Programming Reference* manual.

### C invocation

```
MQZ_SET_AUTHORITY (QMgrName, EntityName, EntityType, ObjectName,  
                  ObjectType, Authority, ComponentData,  
                  &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQCHAR12 EntityName;       /* Entity name */  
MQLONG   EntityType;       /* Entity type */  
MQCHAR48 ObjectName;       /* Object name */  
MQLONG   ObjectType;       /* Object type */  
MQLONG   Authority;        /* Authority to be checked */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;         /* Completion code */  
MQLONG   Reason;          /* Reason code qualifying CompCode */
```

---

## MQZ\_SET\_AUTHORITY\_2 - Set authority 2

This function is provided by an MQZAS\_VERSION\_2 authorization service component, and is invoked by the queue manager to set the authority that an entity has to access the specified object.

The function identifier for this function (for MQZEP) is MQZID\_SET\_AUTHORITY.

**Note:** This function overrides any existing authorities. To preserve any existing authorities you must set them again with this function.

MQZ\_SET\_AUTHORITY\_2 is similar to MQZ\_SET\_AUTHORITY, but with the *EntityName* parameter replaced by the *EntityData* parameter.

MQZ\_SET\_AUTHORITY\_2 (*QMgrName*, *EntityData*, *EntityType*, *ObjectName*,  
*ObjectType*, *Authority*, *ComponentData*, *Continuation*,  
*CompCode*, *Reason*)

## Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*EntityData* (MQZED) – input  
Entity data.

Data relating to the entity whose access to the object is to be set. See “MQZED - Entity Data structure” on page 458 for details.

*EntityType* (MQLONG) – input  
Entity type.

The type of entity specified by *EntityData*. The following value can be specified:

MQZAET\_GROUP  
Group.

*ObjectName* (MQCHAR48) – input  
Object name.

The name of the object to which access is required. The maximum length of the string is 48 characters; if it is shorter than that it is padded to the right with blanks. The name is not terminated by a null character.

If *ObjectType* is MQOT\_Q\_MGR, this name is the same as *QMgrName*.

## MQZ\_SET\_AUTHORITY\_2 - Set authority 2

*ObjectType* (MQLONG) – input

Object type.

The type of entity specified by *ObjectName*. It is one of the following:

MQOT\_PROCESS

Process definition (not 16-bit Windows, 32-bit Windows).

MQOT\_Q

Queue.

MQOT\_Q\_MGR

Queue manager.

*Authority* (MQLONG) – input

Authority to be checked.

If one authorization is being set, this field is equal to the appropriate authorization operation (MQZAO\_\* constant). If more than one authorization is being set, it is the bitwise OR of the corresponding MQZAO\_\* constants.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output

Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_AUTHORITY call.

*Continuation* (MQLONG) – output

Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_SET\_AUTHORITY\_2 this has the same effect as MQZCI\_STOP.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output

Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.



### C invocation

```
MQZ_SET_AUTHORITY_2 (QMgrName, &EntityData, EntityType, ObjectName,  
                    ObjectType, Authority, ComponentData,  
                    &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQZED    EntityData;       /* Entity data */  
MQLONG   EntityType;       /* Entity type */  
MQCHAR48 ObjectName;      /* Object name */  
MQLONG   ObjectType;       /* Object type */  
MQLONG   Authority;        /* Authority to be checked */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;         /* Completion code */  
MQLONG   Reason;          /* Reason code qualifying CompCode */
```

---

## MQZ\_TERM\_AUTHORITY - Terminate authorization service component

This function is provided by an authorization service component, and is invoked by the queue manager when it no longer requires the services of this component. The function must perform any cleanup required by the component.

The function identifier for this function (for MQZEP) is MQZID\_TERM\_AUTHORITY.

MQZ\_TERM\_AUTHORITY (*Hconfig*, *Options*, *QMgrName*, *ComponentData*,  
*CompCode*, *Reason*)

### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the particular component being terminated.

*Options* (MQLONG) – input  
Termination options.

It is one of the following:

MQZTO\_PRIMARY  
Primary termination.

MQZTO\_SECONDARY  
Secondary termination.

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the authorization service interface does not require the component to make use of it in any defined manner.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter on the MQZ\_INIT\_AUTHORITY call.

When the MQZ\_TERM\_AUTHORITY call has completed, the queue manager discards this data.

## MQZ\_TERM\_AUTHORITY - Terminate authorization service component

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE  
(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_NOT\_AVAILABLE  
(2285, X'8ED') Underlying service not available.  
MQRC\_TERMINATION\_FAILED  
(2287, X'8FF') Termination failed for an undefined reason.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## **C invocation**

```
MQZ_TERM_AUTHORITY (Hconfig, Options, QMgrName, ComponentData,  
                    &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;          /* Configuration handle */  
MQLONG Options;            /* Termination options */  
MQCHAR48 QMgrName;         /* Queue manager name */  
MQBYTE ComponentData[n];  /* Component data */  
MQLONG CompCode;          /* Completion code */  
MQLONG Reason;            /* Reason code qualifying CompCode */
```

---

### MQZ\_DELETE\_NAME - Delete name from service

This function is provided by a name service component, and is invoked by the queue manager to delete an entry for the specified queue.

The function identifier for this function (for MQZEP) is MQZID\_DELETE\_NAME.

MQZ\_DELETE\_NAME (*QMgrName*, *QName*, *ComponentData*, *Continuation*,  
*CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input

Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the name service interface does not require the component to make use of it in any defined manner.

*QName* (MQCHAR48) – input

Queue name.

The name of the queue for which an entry is to be deleted. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output

Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_NAME call.

*Continuation* (MQLONG) – output

Continuation indicator set by component.

For MQZ\_DELETE\_NAME, the queue manager does not attempt to invoke another component, whatever is returned in *Continuation*.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output

Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_WARNING

Warning (partial completion).

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_WARNING:

MQRC\_UNKNOWN\_Q\_NAME

(2288, X'8F0') Queue name not found.

**Note:** It may not be possible to return this code if the underlying service simply responds with success for this case.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## MQZ\_DELETE\_NAME - Delete name from service

### C invocation

```
MQZ_DELETE_NAME (QMgrName, QName, ComponentData, &Continuation,  
                &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQCHAR48 QName;            /* Queue name */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;        /* Completion code */  
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

---

## MQZ\_INIT\_NAME - Initialize name service component

This function is provided by a name service component, and is invoked by the queue manager during configuration of the component. It is expected to call MQZEP in order to provide information to the queue manager.

The function identifier for this function (for MQZEP) is MQZID\_INIT\_NAME.

MQZ\_INIT\_NAME (*Hconfig*, *Options*, *QMgrName*, *ComponentDataLength*, *ComponentData*, *Version*, *CompCode*, *Reason*)

### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the particular component being initialized. It is to be used by the component when calling the queue manager with the MQZEP function.

*Options* (MQLONG) – input  
Initialization options.

It is one of the following:

MQZIO\_PRIMARY  
Primary initialization.

MQZIO\_SECONDARY  
Secondary initialization.

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the name service interface does not require the component to make use of it in any defined manner.

*ComponentDataLength* (MQLONG) – input  
Length of component data.

Length in bytes of the *ComponentData* area. This length is defined in the component configuration data.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This is initialized to all zeroes before calling the component's primary initialization function. This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions (including the initialization function) provided by this component are preserved, and presented the next time one of this component's functions is called.

Component data is in shared memory accessible to all processes. Therefore primary initialization is the first process initialization and secondary initialization is any subsequent process initialization.

## MQZ\_INIT\_NAME - Initialize name service component

*Version* (MQLONG) – input/output  
Version number.

On input to the initialization function, this identifies the *highest* version number that the queue manager supports. The initialization function must change this, if necessary, to the version of the interface which *it* supports. If on return the queue manager does not support the version returned by the component, it calls the component's MQZ\_TERM\_NAME function and makes no further use of this component.

The following value is supported:

MQZNS\_VERSION\_1  
Version 1.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE  
(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_INITIALIZATION\_FAILED  
(2286, X'8EE') Initialization failed for an undefined reason.  
MQRC\_SERVICE\_NOT\_AVAILABLE  
(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see "Reason codes" in the *MQSeries Application Programming Reference* manual.

**C invocation**

```
MQZ_INIT_NAME (Hconfig, Options, QMgrName, ComponentDataLength,  
              ComponentData, &Version, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;          /* Configuration handle */  
MQLONG Options;           /* Initialization options */  
MQCHAR48 QMgrName;        /* Queue manager name */  
MQLONG ComponentDataLength; /* Length of component data */  
MQBYTE ComponentData[n];  /* Component data */  
MQLONG Version;           /* Version number */  
MQLONG CompCode;          /* Completion code */  
MQLONG Reason;            /* Reason code qualifying CompCode */
```

---

### MQZ\_INSERT\_NAME - Insert name in service

This function is provided by a name service component, and is invoked by the queue manager to insert an entry for the specified queue, containing the name of the queue manager that owns the queue. If the queue is already defined in the service, the call fails.

The function identifier for this function (for MQZEP) is MQZID\_INSERT\_NAME.

MQZ\_INSERT\_NAME (*QMgrName*, *QName*, *ResolvedQMgrName*, *ComponentData*,  
*Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the name service interface does not require the component to make use of it in any defined manner.

*QName* (MQCHAR48) – input  
Queue name.

The name of the queue for which an entry is to be inserted. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

*ResolvedQMgrName* (MQCHAR48) – input  
Resolved queue manager name.

The name of the queue manager to which the queue resolves. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_NAME call.

*Continuation* (MQLONG) – output  
Continuation indicator set by component.

For MQZ\_INSERT\_NAME, the queue manager does not attempt to invoke another component, whatever is returned in *Continuation*.

The following values can be specified:

MQZCI\_DEFAULT  
Continuation dependent on queue manager.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_Q\_ALREADY\_EXISTS

(2290, X'8F2') Queue object already exists.

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## MQZ\_INSERT\_NAME - Insert name in service

### C invocation

```
MQZ_INSERT_NAME (QMgrName, QName, ResolvedQMgrName, ComponentData,  
                &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQCHAR48 QName;            /* Queue name */  
MQCHAR48 ResolvedQMgrName; /* Resolved queue manager name */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;        /* Completion code */  
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

---

## MQZ\_LOOKUP\_NAME - Lookup name in service

This function is provided by a name service component, and is invoked by the queue manager to retrieve the name of the owning queue manager, for a specified queue.

The function identifier for this function (for MQZEP) is MQZID\_LOOKUP\_NAME.

MQZ\_LOOKUP\_NAME (*QMgrName*, *QName*, *ResolvedQMgrName*, *ComponentData*, *Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input

Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the name service interface does not require the component to make use of it in any defined manner.

*QName* (MQCHAR48) – input

Queue name.

The name of the queue which is to be resolved. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

*ResolvedQMgrName* (MQCHAR48) – output

Resolved queue manager name.

If the function completes successfully, this is the name of the queue manager that owns the queue.

The name returned by the service component must be padded on the right with blanks to the full length of the parameter; the name *must not* be terminated by a null character, or contain leading or embedded blanks.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output

Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

Component data is in shared memory accessible to all processes.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_NAME call.

## MQZ\_LOOKUP\_NAME - Lookup name in service

*Continuation* (MQLONG) – output

Continuation indicator set by component.

For MQZ\_LOOKUP\_NAME, the queue manager decides whether to invoke another name service component, as follows:

- If *CompCode* is MQCC\_OK, no further components are invoked, whatever value is returned in *Continuation*.
- If *CompCode* is not MQCC\_OK, a further component is invoked, unless *Continuation* is MQZCI\_STOP. This value should not be set without good reason.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output

Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_UNKNOWN\_Q\_NAME

(2288, X'8F0') Queue name not found.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## C invocation

```
MQZ_LOOKUP_NAME (QMgrName, QName, ResolvedQMgrName, ComponentData,  
                &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQCHAR48 QName;            /* Queue name */  
MQCHAR48 ResolvedQMgrName; /* Resolved queue manager name */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;        /* Completion code */  
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

---

### MQZ\_TERM\_NAME - Terminate name service component

This function is provided by a name service component, and is invoked by the queue manager when it no longer requires the services of this component. The function must perform any cleanup required by the component.

The function identifier for this function (for MQZEP) is MQZID\_TERM\_NAME.

MQZ\_TERM\_NAME (*Hconfig, Options, QMgrName, ComponentData, CompCode, Reason*)

### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the particular component being terminated.

*Options* (MQLONG) – input  
Termination options.

It is one of the following:

MQZTO\_PRIMARY  
Primary termination.

MQZTO\_SECONDARY  
Secondary termination.

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the name service interface does not require the component to make use of it in any defined manner.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

Component data is in shared memory accessible to all processes.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter on the MQZ\_INIT\_NAME call.

When the MQZ\_TERM\_NAME call has completed, the queue manager discards this data.

*CompCode* (MQLONG) – output  
Completion code.

## MQZ\_TERM\_NAME - Terminate name service component

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_TERMINATION\_FAILED

(2287, X'8FF') Termination failed for an undefined reason.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## MQZ\_TERM\_NAME - Terminate name service component

### C invocation

```
MQZ_TERM_NAME (Hconfig, Options, QMgrName, ComponentData, &CompCode,  
              &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;          /* Configuration handle */  
MQLONG Options;            /* Termination options */  
MQCHAR48 QMgrName;         /* Queue manager name */  
MQBYTE ComponentData[n];  /* Component data */  
MQLONG CompCode;          /* Completion code */  
MQLONG Reason;            /* Reason code qualifying CompCode */
```

---

## MQZ\_FIND\_USERID - Find user ID

This function is provided by a user ID service component, and is invoked by the queue manager to find the user ID, and optionally the password, to be associated with an application, when the application issues an MQCONN call.

The function identifier for this function (for MQZEP) is MQZID\_FIND\_USERID.

MQZ\_FIND\_USERID (*QMgrName*, *Userid*, *Password*, *ComponentData*,  
*Continuation*, *CompCode*, *Reason*)

### Parameters

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the user ID service interface does not require the component to make use of it in any defined manner.

*Userid* (MQCHAR12) – output  
User identifier.

The user identifier to be associated with this application. The value returned by the service component must be padded on the right with blanks to the full length of the parameter; the value *must not* be terminated by a null character.

*Password* (MQCHAR12) – output  
Password.

The password associated with the user identifier. The value returned by the service component must be padded on the right with blanks to the full length of the parameter; the value *must not* be terminated by a null character.

If it is not necessary to return a password, the parameter should be set to blanks.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter of the MQZ\_INIT\_USERID call.

## MQZ\_FIND\_USERID - Find user ID

*Continuation* (MQLONG) – output

Continuation indicator set by component.

The following values can be specified:

MQZCI\_DEFAULT

Continuation dependent on queue manager.

For MQZ\_FIND\_USERID this has the same effect as MQZCI\_CONTINUE.

MQZCI\_CONTINUE

Continue with next component.

MQZCI\_STOP

Do not continue with next component.

*CompCode* (MQLONG) – output

Completion code.

It is one of the following:

MQCC\_OK

Successful completion.

MQCC\_FAILED

Call failed.

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_ERROR

(2289, X'8F1') Unexpected error occurred accessing service.

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_USER\_ID\_NOT\_AVAILABLE

(2291, X'8F3') Unable to determine the user ID.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## C invocation

```
MQZ_FIND_USERID (QMgrName, Userid, Password, ComponentData,  
                &Continuation, &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQCHAR48 QMgrName;          /* Queue manager name */  
MQCHAR12 Userid;           /* User identifier */  
MQCHAR12 Password;        /* Password */  
MQBYTE   ComponentData[n]; /* Component data */  
MQLONG   Continuation;     /* Continuation indicator set by  
                           component */  
MQLONG   CompCode;        /* Completion code */  
MQLONG   Reason;         /* Reason code qualifying CompCode */
```

---

### MQZ\_INIT\_USERID - Initialize user identifier service component

This function is provided by a user ID service component, and is invoked by the queue manager during configuration of the component. It is expected to call MQZEP in order to provide information to the queue manager.

*MQZ\_INIT\_USERID (Hconfig, Options, QMgrName, ComponentDataLength, ComponentData, Version, CompCode, Reason)*

#### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the particular component being initialized. It is to be used by the component when calling the queue manager with the MQZEP function.

*Options* (MQLONG) – input  
Initialization options.

It always has the following value:

MQZIO\_PRIMARY  
Primary initialization.

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the user identifier service interface does not require the component to make use of it in any defined manner.

*ComponentDataLength* (MQLONG) – input  
Length of component data.

Length in bytes of the *ComponentData* area. This length is defined in the component configuration data.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This is initialized to all zeroes before calling the component's primary initialization function. This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions (including the initialization function) provided by this component are preserved, and presented the next time one of this component's functions is called.

*Version* (MQLONG) – input/output  
Version number.

On input to the initialization function, this identifies the *highest* version number that the queue manager supports. The initialization function must change this, if necessary, to the version of the interface which *it* supports. If on return the queue manager does not support the version returned by

## MQZ\_INIT\_USERID - Initialize user identifier service component

the component, it calls the component's MQZ\_TERM\_USERID function and makes no further use of this component.

The following value is supported:

MQZUS\_VERSION\_1  
Version 1.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

*Reason* (MQLONG) – output  
Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE  
(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_INITIALIZATION\_FAILED  
(2286, X'8EE') Initialization failed for an undefined reason.  
MQRC\_SERVICE\_NOT\_AVAILABLE  
(2285, X'8ED') Underlying service not available.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## MQZ\_INIT\_USERID - Initialize user identifier service component

### C invocation

```
MQZ_INIT_USERID (Hconfig, Options, QMgrName, ComponentDataLength,  
                ComponentData, &Version, &CompCode,  
                &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;          /* Configuration handle */  
MQLONG Options;           /* Initialization options */  
MQCHAR48 QMgrName;       /* Queue manager name */  
MQLONG ComponentDataLength; /* Length of component data */  
MQBYTE ComponentData[n]; /* Component data */  
MQLONG Version;          /* Version number */  
MQLONG CompCode;         /* Completion code */  
MQLONG Reason;           /* Reason code qualifying CompCode */
```

---

## MQZ\_TERM\_USERID - Terminate user identifier service component

This function is provided by a user identifier service component, and is invoked by the queue manager when it no longer requires the services of this component. The function must perform any cleanup required by the component.

The function identifier for this function (for MQZEP) is MQZID\_TERM\_USERID.

MQZ\_TERM\_USERID (*Hconfig*, *Options*, *QMgrName*, *ComponentData*, *CompCode*, *Reason*)

### Parameters

*Hconfig* (MQHCONFIG) – input  
Configuration handle.

This handle represents the particular component being terminated.

*Options* (MQLONG) – input  
Termination options.

This always has the following value:

MQZTO\_PRIMARY  
Primary termination.

*QMgrName* (MQCHAR48) – input  
Queue manager name.

The name of the queue manager calling the component. This name is padded with blanks to the full length of the parameter; the name is not terminated by a null character.

The queue-manager name is passed to the component for information; the user ID service interface does not require the component to make use of it in any defined manner.

*ComponentData* (MQBYTE×*ComponentDataLength*) – input/output  
Component data.

This data is kept by the queue manager on behalf of this particular component; any changes made to it by any of the functions provided by this component are preserved, and presented the next time one of this component's functions is called.

The length of this data area is passed by the queue manager in the *ComponentDataLength* parameter on the MQZ\_INIT\_USERID call.

When the MQZ\_TERM\_USERID call has completed, the queue manager discards this data.

*CompCode* (MQLONG) – output  
Completion code.

It is one of the following:

MQCC\_OK  
Successful completion.  
MQCC\_FAILED  
Call failed.

## MQZ\_TERM\_USERID - Terminate user identifier service component

*Reason* (MQLONG) – output

Reason code qualifying *CompCode*.

If *CompCode* is MQCC\_OK:

MQRC\_NONE

(0, X'000') No reason to report.

If *CompCode* is MQCC\_FAILED:

MQRC\_SERVICE\_NOT\_AVAILABLE

(2285, X'8ED') Underlying service not available.

MQRC\_TERMINATION\_FAILED

(2287, X'8FF') Termination failed for an undefined reason.

For more information on these reason codes, see “Reason codes” in the *MQSeries Application Programming Reference* manual.

## **C invocation**

```
MQZ_TERM_USERID (Hconfig, Options, QMgrName, ComponentData,  
                &CompCode, &Reason);
```

Declare the parameters as follows:

```
MQHCONFIG Hconfig;          /* Configuration handle */  
MQLONG Options;            /* Termination options */  
MQCHAR48 QMgrName;         /* Queue manager name */  
MQBYTE ComponentData[n];  /* Component data */  
MQLONG CompCode;          /* Completion code */  
MQLONG Reason;            /* Reason code qualifying CompCode */
```

## **MQZ\_TERM\_USERID - Terminate user identifier service component**

---

## Part 4. Appendixes

<b>Appendix A. Error codes</b> .....	535
Completion code .....	535
Reason code .....	535
<b>Appendix B. Constants</b> .....	555
List of constants .....	555
<b>Appendix C. Header, COPY, and INCLUDE files</b> .....	571
C header files .....	571
COBOL COPY files .....	572
PL/I INCLUDE files .....	572
System/390 Assembler COPY files .....	573
<b>Appendix D. Notices</b> .....	575
Programming interface information .....	576
Trademarks .....	577



---

## Appendix A. Error codes

This book contains the return codes associated with PCFs. The return codes associated with the Application Programming Interface (API) are listed in Chapter 5, “Return codes” in the *MQSeries Application Programming Reference* manual.

This chapter discusses:

- “Completion code”
- “Reason code”

For each command message a completion code and a reason code are set by the command server to indicate success or failure.

Applications must not depend upon errors being checked for in a specific order, except where specifically noted. If more than one completion code or reason code could arise from a call, the particular error reported depends on the implementation.

In the descriptions that follow, references to a *remote system* mean a system that is remote from the system to which the command was issued.

---

### Completion code

This is returned in the *CompCode* field of the MQCFH – PCF header of the response message. The following are the completion codes:

MQCC\_OK

Command completed successfully.

MQCC\_WARNING

Command completed with warning.

MQCC\_FAILED

Command failed.

MQCC\_UNKNOWN

Whether command succeeded is not known.

The initial value of this field is MQCC\_OK.

---

### Reason code

This is returned in the *Reason* field of the MQCFH – PCF header of the response message. The reason code is a qualification to the *CompCode*.

If there is no special reason to report, MQRC\_NONE is returned. Typically, a successful call returns MQCC\_OK and MQRC\_NONE.

If the *CompCode* is either MQCC\_WARNING or MQCC\_FAILED, the command server always reports a qualifying reason.

Reason codes are returned with MQCC\_FAILED unless otherwise stated.

## Error codes

Descriptions of the MQRCCF\_\* error codes are given in “Reason codes” in the *MQSeries Application Programming Reference* manual. The following is a list, in alphabetic order, of the MQRCCF\_\* reason codes:

### MQRCCF\_ACTION\_VALUE\_ERROR

Action value not valid.

The value specified for *Action* is not valid. There is only one valid value.

Corrective action: Specify MQLACT\_FORCE\_REMOVE as the value of the *Action* parameter.

### MQRCCF\_ALLOCATE\_FAILED

Allocation failed.

An attempt to allocate a conversation to a remote system failed. The error may be due to an invalid entry in the channel definition, or it may be that the listening program at the remote system is not running.

Corrective action: Ensure that the channel definition is correct, and start the listening program if necessary. If the error persists, consult your systems administrator.

### MQRCCF\_ATTR\_VALUE\_ERROR

Attribute value not valid.

One or more of the attribute values specified was not valid. The error response message contains the failing attribute selectors (with parameter identifier MQLACF\_PARAMETER\_ID).

Corrective action: Specify only valid attribute values.

### MQRCCF\_BATCH\_INT\_ERROR

Batch interval not valid.

The batch interval specified was not valid.

Corrective action: Specify a valid batch interval value.

### MQRCCF\_BATCH\_INT\_WRONG\_TYPE

Batch interval parameter not allowed for this channel type.

The *BatchInterval* parameter is allowed only for sender and server channels.

Corrective action: Remove the parameter.

### MQRCCF\_BATCH\_SIZE\_ERROR

Batch size not valid.

The batch size specified was not valid.

Corrective action: Specify a valid batch size value.

### MQRCCF\_BIND\_FAILED

Bind failed.

The bind to a remote system during session negotiation has failed.

Corrective action: Consult your systems administrator.

### MQRCCF\_CCSDID\_ERROR

Coded character-set identifier error.

In a command message, one of the following occurred:

- The *CodedCharSetId* field in the message descriptor of the command does not match the coded character-set identifier of the queue manager at which the command is being processed, or
- The *CodedCharSetId* field in a string parameter structure within the message text of the command is not
  - MQCCSI\_DEFAULT, or
  - the coded character-set identifier of the queue manager at which the command is being processed, as in the *CodedCharSetId* field in the message descriptor.

The error response message contains the correct value.

This reason can also occur if a ping cannot be performed because the coded character-set identifiers are not compatible. In this case the correct value is not returned.

Corrective action: Construct the command with the correct coded character-set identifier, and specify this in the message descriptor when sending the command. For ping, use a suitable coded character-set identifier.

#### MQRCCF\_CELL\_DIR\_NOT\_AVAILABLE

Cell directory is not available.

The *Scope* attribute of the queue is to be MQSCO\_CELL, but no name service supporting a cell directory has been configured.

Corrective action: Configure the queue manager with a suitable name service.

#### MQRCCF\_CFH\_COMMAND\_ERROR

Command identifier not valid.

The MQCFH *Command* field value was not valid.

Corrective action: Specify a valid command identifier.

#### MQRCCF\_CFH\_CONTROL\_ERROR

Control option not valid.

The MQCFH *Control* field value was not valid.

Corrective action: Specify a valid control option.

#### MQRCCF\_CFH\_LENGTH\_ERROR

Structure length not valid.

The MQCFH *StrucLength* field value was not valid.

Corrective action: Specify a valid structure length.

#### MQRCCF\_CFH\_MSG\_SEQ\_NUMBER\_ERR

Message sequence number not valid.

The MQCFH *MsgSeqNumber* field value was not valid.

Corrective action: Specify a valid message sequence number.

#### MQRCCF\_CFH\_PARM\_COUNT\_ERROR

Parameter count not valid.

The MQCFH *ParameterCount* field value was not valid.

Corrective action: Specify a valid parameter count.

## Error codes

### MQRCCF\_CFH\_TYPE\_ERROR

Type not valid.

The MQCFH *Type* field value was not valid.

Corrective action: Specify a valid type.

### MQRCCF\_CFH\_VERSION\_ERROR

Structure version number is not valid.

The MQCFH *Version* field value was not valid.

Corrective action: Specify a valid structure version number.

### MQRCCF\_CFIL\_COUNT\_ERROR

Count of parameter values not valid.

The MQCFIL *Count* field value was not valid.

Corrective action: Specify a valid count of parameter values.

### MQRCCF\_CFIL\_DUPLICATE\_VALUE

Duplicate parameter.

In the MQCFIL structure, a duplicate parameter was detected in the list selector.

Corrective action: Check for and remove duplicate parameters.

### MQRCCF\_CFIL\_LENGTH\_ERROR

Structure length not valid.

The MQCFIL *StrucLength* field value was not valid.

Corrective action: Specify a valid structure length.

### MQRCCF\_CFIL\_PARM\_ID\_ERROR

Parameter identifier is not valid.

The MQCFIL *Parameter* field value was not valid.

Corrective action: Specify a valid parameter identifier.

### MQRCCF\_CFIN\_DUPLICATE\_PARM

Duplicate parameter.

A MQCFIN duplicate parameter was detected.

Corrective action: Check for and remove duplicate parameters.

### MQRCCF\_CFIN\_LENGTH\_ERROR

Structure length not valid.

The MQCFIN *StrucLength* field value was not valid.

Corrective action: Specify a valid structure length.

### MQRCCF\_CFIN\_PARM\_ID\_ERROR

Parameter identifier is not valid.

The MQCFIN *Parameter* field value was not valid.

Corrective action: Specify a valid parameter identifier.

### MQRCCF\_CFSL\_COUNT\_ERROR

Name count value not valid.

Maximum number of names in a namelist exceeded. Maximum number of names is 256.

Corrective action: Reduce number of names.

#### MQRCCF\_CFSL\_STRING\_LENGTH\_ERR

String length not valid.

A name, within a namelist, with a nonblank string length of greater than 48 bytes was detected.

Corrective action: Check that all names have a nonblank length of less than 48 bytes.

Strings greater than 48 bytes are accepted if all bytes over 48 are blanks.

#### MQRCCF\_CFSL\_DUPLICATE\_PARM

Duplicate parameter.

A MQCFSL duplicate parameter was detected.

Corrective action: Check for and remove duplicate parameters.

This reason can occur if the same parameter is repeated with an MQCFST structure followed by an MQCFSL structure.

#### MQRCCF\_CFSL\_TOTAL\_LENGTH\_ERROR

Total string length error.

The total length of the strings (not including trailing blanks) in a MQCFSL structure exceeds the maximum allowable for the parameter.

Corrective action: Check that the structure has been specified correctly, and if so reduce the number of strings.

#### MQRCCF\_CFST\_DUPLICATE\_PARM

Duplicate parameter.

A MQCFST duplicate parameter was detected.

Corrective action: Check for and remove duplicate parameters.

This reason can occur if the same parameter is repeated with an MQCFSL structure followed by an MQCFST structure.

#### MQRCCF\_CFST\_LENGTH\_ERROR

Structure length not valid.

The MQCFST *StrucLength* field value was not valid. The value was not a multiple of four or was inconsistent with the MQCFST *StringLength* field value.

Corrective action: Specify a valid structure length.

#### MQRCCF\_CFST\_PARM\_ID\_ERROR

Parameter identifier is not valid.

The MQCFST *Parameter* field value was not valid.

Corrective action: Specify a valid parameter identifier.

#### MQRCCF\_CFST\_STRING\_LENGTH\_ERR

String length not valid.

The MQCFST *StringLength* field value was not valid. The value was negative or greater than the maximum permitted length of the parameter specified in the *Parameter* field.

Corrective action: Specify a valid string length for the parameter.

## Error codes

### MQRCCF\_CHAD\_ERROR

Channel automatic definition error.

The *ChannelAutoDef* value was not valid.

Corrective action: Specify MQCHAD\_ENABLED or MQCHAD\_DISABLED.

### MQRCCF\_CHAD\_EVENT\_ERROR

Channel automatic definition event error.

The *ChannelAutoDefEvent* value was not valid.

Corrective action: Specify MQEVR\_ENABLED or MQEVR\_DISABLED.

### MQRCCF\_CHAD\_EVENT\_WRONG\_TYPE

Channel automatic definition event parameter not allowed for this channel type.

The *ChannelAutoDefEvent* parameter is allowed only for receiver and server-connection channels.

Corrective action: Remove the parameter.

### MQRCCF\_CHAD\_EXIT\_ERROR

Channel automatic definition exit name error.

The *ChannelAutoDefExit* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

### MQRCCF\_CHAD\_EXIT\_WRONG\_TYPE

Channel automatic definition exit parameter not allowed for this channel type.

The *ChannelAutoDefExit* parameter is allowed only for receiver and server-connection channels.

Corrective action: Remove the parameter.

### MQRCCF\_CHAD\_WRONG\_TYPE

Channel automatic definition parameter not allowed for this channel type.

The *ChannelAutoDef* parameter is allowed only for receiver and server-connection channels.

Corrective action: Remove the parameter.

### MQRCCF\_CHANNEL\_ALREADY\_EXISTS

Channel already exists.

An attempt was made to create a channel but the channel already existed and *Replace* was not specified as MQRP\_YES.

Corrective action: Specify *Replace* as MQRP\_YES or use a different name for the channel to be created.

### MQRCCF\_CHANNEL\_DISABLED

Channel disabled.

An attempt was made to use a channel, but the channel was disabled.

Corrective action: Start the channel.

## MQRCCF\_CHANNEL\_IN\_USE

Channel in use.

An attempt was made to perform an operation on a channel, but the channel is currently active.

Corrective action: Stop the channel or wait for it to terminate.

## MQRCCF\_CHANNEL\_INDOUBT

Channel in-doubt.

The requested operation cannot complete because the channel is in doubt.

Corrective action: Examine the status of the channel, and either restart a channel to resolve the in-doubt state, or resolve the channel.

## MQRCCF\_CHANNEL\_NAME\_ERROR

Channel name error.

The *ChannelName* parameter contained characters that are not allowed for channel names.

Corrective action: Specify a valid name.

## MQRCCF\_CHANNEL\_NOT\_ACTIVE

Channel not active.

An attempt was made to stop a channel, but the channel was already stopped.

Corrective action: No action is required.

## MQRCCF\_CHANNEL\_NOT\_FOUND

Channel not found.

The channel specified does not exist.

Corrective action: Specify the name of a channel which exists.

## MQRCCF\_CHANNEL\_TABLE\_ERROR

Channel table value not valid.

The *ChannelTable* specified was not valid, or was not appropriate for the channel type specified on an Inquire Channel or Inquire Channel Names command.

Corrective action: Specify a valid channel table value.

## MQRCCF\_CHANNEL\_TYPE\_ERROR

Channel type not valid.

The *ChannelType* specified was not valid, or did not match the type of an existing channel being copied, changed or replaced.

Corrective action: Specify a valid channel type.

## MQRCCF\_CHL\_INST\_TYPE\_ERROR

Channel instance type not valid.

The *ChannelInstanceType* specified was not valid.

Corrective action: Specify a valid channel instance type.

## Error codes

### MQRCCF\_CHL\_STATUS\_NOT\_FOUND

Channel status not found.

For Inquire Channel Status, no channel status is available for the specified channel. This may indicate that the channel has not been used.

Corrective action: None, unless this is unexpected, in which case consult your systems administrator.

### MQRCCF\_CLUSTER\_NAME\_CONFLICT

*ClusterName* and *ClusterNameList* attributes conflict.

The command was rejected because it would have resulted in the *ClusterName* attribute and the *ClusterNameList* attribute both being nonblank. At least one of these attributes must be blank.

Corrective action: If the command specified one of these attributes only, you should also specify the other one, but with a value of blanks.

If the command specified both attributes, ensure that one of them has a value of blanks.

### MQRCCF\_CLUSTER\_Q\_USAGE\_ERROR

Cluster queue cannot be a transmission queue.

The command was rejected because it would have resulted in a cluster queue also being a transmission queue. This is not permitted.

Corrective action: Ensure that the command specifies either:

- The *Usage* parameter with a value of MQUS\_NORMAL, or
- The *ClusterName* and *ClusterNameList* parameters with values of blanks.

### MQRCCF\_COMMAND\_FAILED

Command failed.

The command has failed.

Corrective action: Refer to the previous error messages for this command.

### MQRCCF\_COMMIT\_FAILED

Commit failed.

An error was received when an attempt was made to commit a unit of work.

Corrective action: Consult your systems administrator.

### MQRCCF\_COMMS\_LIBRARY\_ERROR

Library for requested communications protocol could not be loaded.

The library needed for the requested communications protocol could not be loaded.

Corrective action: Install the library for the required communications protocol, or specify a communications protocol that has already been installed.

### MQRCCF\_CONFIGURATION\_ERROR

Configuration error.

A configuration error was detected in the channel definition or communication subsystem, and allocation of a conversation was not possible. This may be caused by one of the following:

- For LU 6.2, either the *ModeName* or the *TpName* is incorrect. The *ModeName* must match that on the remote system, and the *TpName* must be specified. (On OS/400, these are held in the communications Side Object.)
- For LU 6.2, the session may not be established.
- For TCP, the *ConnectionName* in the channel definition cannot be resolved to a network address. This may be because the name has not been correctly specified, or because the name server is not available.
- The requested communications protocol may not be supported on the platform.

Corrective action: Identify the error and take appropriate action.

#### MQRCCF\_CONN\_NAME\_ERROR

Error in connection name parameter.

The *ConnectionName* parameter contains one or more blanks at the start of the name.

Corrective action: Specify a valid connection name.

#### MQRCCF\_CONNECTION\_CLOSED

Connection closed.

An error occurred while receiving data from a remote system. The connection to the remote system has unexpectedly terminated.

Corrective action: Contact your systems administrator.

#### MQRCCF\_CONNECTION\_REFUSED

Connection refused.

The attempt to establish a connection to a remote system was rejected. The remote system might not be configured to allow a connection from this system.

- For LU 6.2 either the user ID or the password supplied to the remote system is incorrect.
- For TCP the remote system may not recognize the local system as valid, or the TCP listener program may not be started.

Corrective action: Correct the error or restart the listener program.

#### MQRCCF\_DATA\_CONV\_VALUE\_ERROR

Data conversion value not valid.

The value specified for *DataConversion* is not valid.

Corrective action: Specify a valid value.

#### MQRCCF\_DATA\_TOO\_LARGE

Data too large.

The data to be sent exceeds the maximum that can be supported for the command.

Corrective action: Reduce the size of the data.

#### MQRCCF\_DISC\_INT\_ERROR

Disconnection interval not valid.

The disconnection interval specified was not valid.

Corrective action: Specify a valid disconnection interval.

### MQRCCF\_DISC\_INT\_WRONG\_TYPE

Disconnection interval not allowed for this channel type.

The *DiscInterval* parameter is only allowed for sender or server channel types.

Corrective action: Remove the parameter.

### MQRCCF\_DYNAMIC\_Q\_SCOPE\_ERROR

Dynamic queue scope error.

The *Scope* attribute of the queue is to be MQSCO\_CELL, but this is not allowed for a dynamic queue.

Corrective action: Predefine the queue if it is to have cell scope.

### MQRCCF\_ENCODING\_ERROR

Encoding error.

The *Encoding* field in the message descriptor of the command does not match that required for the platform at which the command is being processed.

Corrective action: Construct the command with the correct encoding, and specify this in the message descriptor when sending the command.

### MQRCCF\_ENTRY\_ERROR

Invalid connection name.

The connection name in the channel definition could not be resolved into a network address. Either the name server does not contain the entry, or the name server was not available.

Corrective action: Ensure that the connection name is correctly specified and that the name server is available.

### MQRCCF\_ESCAPE\_TYPE\_ERROR

Escape type not valid.

The value specified for *EscapeType* is not valid.

Corrective action: Specify a valid value.

### MQRCCF\_FORCE\_VALUE\_ERROR

Force value not valid.

The force value specified was not valid.

Corrective action: Specify a valid force value.

### MQRCCF\_HB\_INTERVAL\_ERROR

Heartbeat interval not valid.

The *HeartbeatInterval* value was not valid.

Corrective action: Specify a value in the range 0-999 999.

### MQRCCF\_HB\_INTERVAL\_WRONG\_TYPE

Heartbeat interval parameter not allowed for this channel type.

The *HeartbeatInterval* parameter is allowed only for receiver and requester channels.

Corrective action: Remove the parameter.

**MQRCCF\_HOST\_NOT\_AVAILABLE**

Remote system not available.

An attempt to allocate a conversation to a remote system was unsuccessful. The error may be transitory, and the allocate may succeed later.

This reason can occur if the listening program at the remote system is not running.

Corrective action: Ensure that the listening program is running, and retry the operation.

**MQRCCF\_INDOUBT\_VALUE\_ERROR**

In-doubt value not valid.

The value specified for *InDoubt* is not valid.

Corrective action: Specify a valid value.

**MQRCCF\_LIKE\_OBJECT\_WRONG\_TYPE**

New and existing objects have different type.

An attempt was made to create an object based on the definition of an existing object, but the new and existing objects had different types.

Corrective action: Ensure that the new object has the same type as the one on which it is based.

**MQRCCF\_LISTENER\_NOT\_STARTED**

Listener not started.

The listener program could not be started. Either the communications subsystem has not been started or there are too many jobs waiting in the queue.

Corrective action: Ensure the communications subsystem is started or retry the operation later.

**MQRCCF\_LONG\_RETRY\_ERROR**

Long retry count not valid.

The long retry count value specified was not valid.

Corrective action: Specify a valid long retry count value.

**MQRCCF\_LONG\_RETRY\_WRONG\_TYPE**

Long retry parameter not allowed for this channel type.

The *LongRetryCount* parameter is only allowed for sender or server channel types.

Corrective action: Remove the parameter.

**MQRCCF\_LONG\_TIMER\_ERROR**

Long timer not valid.

The long timer (long retry wait interval) value specified was not valid.

Corrective action: Specify a valid long timer value.

**MQRCCF\_LONG\_TIMER\_WRONG\_TYPE**

Long timer parameter not allowed for this channel type.

The *LongRetryInterval* parameter is only allowed for sender or server channel types.

Corrective action: Remove the parameter.

## Error codes

### MQRCCF\_MAX\_MSG\_LENGTH\_ERROR

Maximum message length not valid.

The maximum message length value specified was not valid.

Corrective action: Specify a valid maximum message length.

### MQRCCF\_MCA\_NAME\_ERROR

Message channel agent name error.

The *MCAName* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

### MQRCCF\_MCA\_NAME\_WRONG\_TYPE

Message channel agent name not allowed for this channel type.

The *MCAName* parameter is only allowed for sender, server or requester channel types.

Corrective action: Remove the parameter.

### MQRCCF\_MCA\_TYPE\_ERROR

Message channel agent type not valid.

The *MCAType* value specified was not valid.

Corrective action: Specify a valid value.

### MQRCCF\_MD\_FORMAT\_ERROR

Format not valid.

The MQMD *Format* field value was not MQFMT\_ADMIN.

Corrective action: Specify the valid format.

### MQRCCF\_MISSING\_CONN\_NAME

Connection name parameter required but missing.

The *ConnectionName* parameter is required for sender or requester channel types, but is not present.

Corrective action: Add the parameter.

### MQRCCF\_MQCONN\_FAILED

MQCONN call failed.

Corrective action: Check whether the queue manager is active.

### MQRCCF\_MQGET\_FAILED

MQGET call failed.

Corrective action: Check whether the queue manager is active, and the queues involved are correctly set up, and enabled for MQGET.

### MQRCCF\_MQINQ\_FAILED

MQINQ call failed.

Corrective action: Check whether the queue manager is active.

### MQRCCF\_MQOPEN\_FAILED

MQOPEN call failed.

Corrective action: Check whether the queue manager is active, and the queues involved are correctly set up.

## MQRCCF\_MQPUT\_FAILED

MQPUT call failed.

Corrective action: Check whether the queue manager is active, and the queues involved are correctly set up, and not inhibited for puts.

## MQRCCF\_MQSET\_FAILED

MQSET call failed.

Corrective action: Check whether the queue manager is active.

## MQRCCF\_MR\_COUNT\_ERROR

Message retry count not valid.

The *MsgRetryCount* value was not valid.

Corrective action: Specify a value in the range 0-999 999 999.

## MQRCCF\_MR\_COUNT\_WRONG\_TYPE

Message-retry count parameter not allowed for this channel type.

The *MsgRetryCount* parameter is allowed only for receiver and requester channels.

Corrective action: Remove the parameter.

## MQRCCF\_MR\_EXIT\_NAME\_ERROR

Channel message-retry exit name error.

The *MsgRetryExit* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

## MQRCCF\_MR\_EXIT\_NAME\_WRONG\_TYPE

Message-retry exit parameter not allowed for this channel type.

The *MsgRetryExit* parameter is allowed only for receiver and requester channels.

Corrective action: Remove the parameter.

## MQRCCF\_MR\_INTERVAL\_ERROR

Message retry interval not valid.

The *MsgRetryInterval* value was not valid.

Corrective action: Specify a value in the range 0-999 999 999.

## MQRCCF\_MR\_INTERVAL\_WRONG\_TYPE

Message-retry interval parameter not allowed for this channel type.

The *MsgRetryInterval* parameter is allowed only for receiver and requester channels.

Corrective action: Remove the parameter.

## MQRCCF\_MSG\_EXIT\_NAME\_ERROR

Channel message exit name error.

The *MsgExit* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

## Error codes

### MQRCCF\_MSG\_LENGTH\_ERROR

Message length not valid.

A message length error was detected. The message data length was inconsistent with the length implied by the parameters in the message, or a positional parameter was out of sequence.

Corrective action: Specify a valid message length, and check that positional parameters are in the correct sequence.

### MQRCCF\_MSG\_SEQ\_NUMBER\_ERROR

Message sequence number not valid.

The message sequence number parameter value was not valid.

Corrective action: Specify a valid message sequence number.

### MQRCCF\_MSG\_TRUNCATED

Message truncated.

The command server received a message that is larger than its maximum valid message size.

Corrective action: Check the message contents are correct.

### MQRCCF\_NETBIOS\_NAME\_ERROR

NetBIOS listener name not defined.

The NetBIOS listener name is not defined.

Corrective action: Add a local name to the configuration file and retry the operation.

### MQRCCF\_NET\_PRIORITY\_ERROR

Network priority value is not valid.

Corrective action: Specify a valid value.

### MQRCCF\_NET\_PRIORITY\_WRONG\_TYPE

Network priority parameter not allowed for this channel type.

The *NetworkPriority* parameter is allowed for sender and server channels only.

Corrective action: Remove the parameter.

### MQRCCF\_NO\_COMMS\_MANAGER

Communications manager not available.

The communications subsystem is not available.

Corrective action: Ensure that the communications subsystem has been started.

### MQRCCF\_NO\_STORAGE

Not enough storage available.

Insufficient storage is available.

Corrective action: Consult your systems administrator.

### MQRCCF\_NOT\_XMIT\_Q

Queue is not a transmission queue.

The queue specified in the channel definition is not a transmission queue.

Corrective action: Ensure that the queue is specified correctly in the channel definition, and that it is correctly defined to the queue manager.

#### MQRCCF\_NPM\_SPEED\_ERROR

Nonpersistent message speed not valid.

The *NonPersistentMsgSpeed* value was not valid.

Corrective action: Specify MQNPMS\_NORMAL or MQNPMS\_FAST.

#### MQRCCF\_NPM\_SPEED\_WRONG\_TYPE

Nonpersistent message speed parameter not allowed for this channel type.

The *NonPersistentMsgSpeed* parameter is allowed only for sender, receiver, server, and requester channels.

Corrective action: Remove the parameter.

#### MQRCCF\_OBJECT\_ALREADY\_EXISTS

Object already exists.

An attempt was made to create an object, but the object already existed and the *Replace* parameter was not specified as MQRP\_YES.

Corrective action: Specify *Replace* as MQRP\_YES, or use a different name for the object to be created.

#### MQRCCF\_OBJECT\_NAME\_ERROR

Object name not valid.

An object name was specified using characters that were not valid.

Corrective action: Specify only valid characters for the name.

#### MQRCCF\_OBJECT\_OPEN

Object is open.

An attempt was made to delete or change an object that was in use.

Corrective action: Wait until the object is not in use, and then retry the operation. Alternatively specify *Force* as MQFC\_YES for a change command.

#### MQRCCF\_OBJECT\_WRONG\_TYPE

Object has wrong type.

An attempt was made to replace a queue object with one of a different type.

Corrective action: Ensure that the new object is the same type as the one it is replacing.

#### MQRCCF\_PARM\_COUNT\_TOO\_BIG

Parameter count too big.

The MQCFH *ParameterCount* field value was more than the maximum for the command.

Corrective action: Specify a parameter count that is valid for the command.

#### MQRCCF\_PARM\_COUNT\_TOO\_SMALL

Parameter count too small.

The MQCFH *ParameterCount* field value was less than the minimum required for the command.

Corrective action: Specify a parameter count that is valid for the command.

### MQRCCF\_PARM\_SEQUENCE\_ERROR

Parameter sequence not valid.

The sequence of parameters is not valid for this command.

Corrective action: Specify the positional parameters in a valid sequence for the command.

### MQRCCF\_PING\_DATA\_COMPARE\_ERROR

Ping Channel command failed.

The Ping Channel command failed with a data compare error. The data offset that failed is returned in the message (with parameter identifier MQIACF\_ERROR\_OFFSET).

Corrective action: Consult your systems administrator.

### MQRCCF\_PING\_DATA\_COUNT\_ERROR

Data count not valid.

The Ping Channel *DataCount* value was not valid.

Corrective action: Specify a valid data count value.

### MQRCCF\_PING\_ERROR

Ping error.

A ping operation can only be issued for a sender or server channel. If the local channel is a receiver channel, you must issue the ping from a remote queue manager.

Corrective action: Reissue the ping request for a different channel of the correct type, or for a receiver channel from a different queue manager.

### MQRCCF\_PURGE\_VALUE\_ERROR

Purge value not valid.

The *Purge* value was not valid.

Corrective action: Specify a valid purge value.

### MQRCCF\_PUT\_AUTH\_ERROR

Put authority value not valid.

The *PutAuthority* value was not valid.

Corrective action: Specify a valid authority value.

### MQRCCF\_PUT\_AUTH\_WRONG\_TYPE

Put authority parameter not allowed for this channel type.

The *PutAuthority* parameter is only allowed for receiver or requester channel types.

Corrective action: Remove the parameter.

### MQRCCF\_Q\_ALREADY\_IN\_CELL

Queue already exists in cell.

An attempt was made to define a queue with cell scope, or to change the scope of an existing queue from queue-manager scope to cell scope, but a queue with that name already existed in the cell.

Corrective action: Do one of the following:

- Delete the existing queue and retry the operation.

- Change the scope of the existing queue from cell to queue-manager and retry the operation.
- Create the new queue with a different name.

| MQRCCF\_Q\_MGR\_CCSID\_ERROR

| Queue manager coded character set identifier error.

| The coded character set value for the queue manager was not valid.

| Corrective action: Specify a valid value.

MQRCCF\_Q\_TYPE\_ERROR

Queue type not valid.

The *QType* value was not valid.

Corrective action: Specify a valid queue type.

MQRCCF\_Q\_WRONG\_TYPE

Action not valid for the queue of specified type.

An attempt was made to perform an action on a queue of the wrong type.

Corrective action: Specify a queue of the correct type.

MQRCCF\_QUIESCE\_VALUE\_ERROR

Quiesce value not valid.

The *Quiesce* value was not valid.

Corrective action: Specify a valid quiesce value.

MQRCCF\_RCV\_EXIT\_NAME\_ERROR

Channel receive exit name error.

The *ReceiveExit* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

MQRCCF\_RECEIVE\_FAILED

Receive failed.

The receive operation failed.

Corrective action: Correct the error and retry the operation.

MQRCCF\_RECEIVED\_DATA\_ERROR

Received data error.

An error occurred while receiving data from a remote system. This may be caused by a communications failure.

Corrective action: Consult your systems administrator.

MQRCCF\_REMOTE\_QM\_TERMINATING

Remote queue manager terminating.

The channel is ending because the remote queue manager is terminating.

Corrective action: Restart the remote queue manager.

MQRCCF\_REMOTE\_QM\_UNAVAILABLE

Remote queue manager not available.

The channel cannot be started because the remote queue manager is not available.

Corrective action: Start the remote queue manager.

### MQRCCF\_REPLACE\_VALUE\_ERROR

Replace value not valid.

The *Replace* value was not valid.

Corrective action: Specify a valid replace value.

### MQRCCF\_REPOS\_NAME\_CONFLICT

*RepositoryName* and *RepositoryNameList* attributes conflict.

The command was rejected because it would have resulted in the *RepositoryName* and *RepositoryNameList* attributes both being nonblank. At least one of these attributes must be blank.

Corrective action: If the command specified only one of these attributes, specify the other as well, but with a value of blanks.

If the command specified both attributes, ensure that one of them has a value of blanks.

### MQRCCF\_SEC\_EXIT\_NAME\_ERROR

Channel security exit name error.

The *SecurityExit* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

### MQRCCF\_SEND\_EXIT\_NAME\_ERROR

Channel send exit name error.

The *SendExit* value contained characters that are not allowed for program names on the platform in question.

Corrective action: Specify a valid name.

### MQRCCF\_SEND\_FAILED

Send failed.

An error occurred while sending data to a remote system. This may be caused by a communications failure.

Corrective action: Consult your systems administrator.

### MQRCCF\_SEQ\_NUMBER\_WRAP\_ERROR

Sequence wrap number not valid.

The *SeqNumberWrap* value was not valid.

Corrective action: Specify a valid sequence wrap number.

### MQRCCF\_SHORT\_RETRY\_ERROR

Short retry count not valid.

The *ShortRetryCount* value was not valid.

Corrective action: Specify a valid short retry count value.

### MQRCCF\_SHORT\_RETRY\_WRONG\_TYPE

Short retry parameter not allowed for this channel type.

The *ShortRetryCount* parameter is only allowed for sender or server channel types.

Corrective action: Remove the parameter.

## MQRCCF\_SHORT\_TIMER\_ERROR

Short timer value not valid.

The *ShortRetryInterval* value was not valid.

Corrective action: Specify a valid short timer value.

## MQRCCF\_SHORT\_TIMER\_WRONG\_TYPE

Short timer parameter not allowed for this channel type.

The *ShortRetryInterval* parameter is only allowed for sender or server channel types.

Corrective action: Remove the parameter.

## MQRCCF\_STRUCTURE\_TYPE\_ERROR

Structure type not valid.

The structure *Type* value was not valid.

Corrective action: Specify a valid structure type.

## MQRCCF\_SUPPRESSED\_BY\_EXIT

Action suppressed by exit program.

An attempt was made to define a channel automatically, but this was inhibited by the channel automatic definition exit. The *AuxErrorDataInt1* parameter contains the feedback code from the exit indicating why it inhibited the channel definition.

Corrective action: Examine the value of the *AuxErrorDataInt1* parameter, and take any action that is appropriate.

## MQRCCF\_TERMINATED\_BY\_SEC\_EXIT

Channel terminated by security exit.

A channel security exit terminated the channel.

Corrective action: Check that the channel is attempting to connect to the correct queue manager, and if so that the security exit is specified correctly, and is working correctly, at both ends.

## MQRCCF\_UNKNOWN\_Q\_MGR

Queue manager not known.

The queue manager specified was not known.

Corrective action: Specify the name of the queue manager to which the command is sent, or blank.

## MQRCCF\_UNKNOWN\_REMOTE\_CHANNEL

Remote channel not known.

There is no definition of the referenced channel at the remote system.

Corrective action: Ensure that the local channel is correctly defined. If it is, add an appropriate channel definition at the remote system.

## MQRCCF\_USER\_EXIT\_NOT\_AVAILABLE

User exit not available.

The channel was terminated because the user exit specified does not exist.

Corrective action: Ensure that the user exit is correctly specified and the program is available.

## Error codes

### MQRCCF\_XMIT\_PROTOCOL\_TYPE\_ERR

Transmission protocol type not valid.

The *TransportType* value was not valid.

Corrective action: Specify a valid transmission protocol type.

### MQRCCF\_XMIT\_Q\_NAME\_ERROR

Transmission queue name error.

The *XmitQName* parameter contains characters that are not allowed for queue names.

This reason code also occurs if the parameter is not present when a sender or server channel is being created, and no default value is available.

Corrective action: Specify a valid name, or add the parameter.

### MQRCCF\_XMIT\_Q\_NAME\_WRONG\_TYPE

Transmission queue name not allowed for this channel type.

The *XmitQName* parameter is only allowed for sender or server channel types.

Corrective action: Remove the parameter.

## Appendix B. Constants

This appendix specifies the values of the named constants that apply to events, commands, responses, and installable services.

The constants are grouped according to the parameter or field to which they relate. All of the names of the constants in a group begin with a common prefix of the form "MQxxxx\_", where xxxx represents a string of 0 through 4 characters that indicates the nature of the values defined in that group. The constants are ordered alphabetically by the prefix.

### Notes:

1. For constants with numeric values, the values are shown in both decimal and hexadecimal forms.
2. Hexadecimal values are represented using the notation X'hhhh', where each "h" denotes a single hexadecimal digit.
3. Character values are shown delimited by single quotation marks; the quotation marks are not part of the value.
4. Blanks in character values are represented by one or more occurrences of the symbol "b".

## List of constants

The following sections list all of the named constants mentioned in this book, and show their values.

### MQ\_\* (Lengths of character string and byte fields)

MQ_ACCOUNTING_TOKEN_LENGTH	32	X'00000020'
MQ_APPL_IDENTITY_DATA_LENGTH	32	X'00000020'
MQ_APPL_NAME_LENGTH	28	X'0000001C'
MQ_APPL_ORIGIN_DATA_LENGTH	4	X'00000004'
MQ_AUTHENTICATOR_LENGTH	8	X'00000008'
MQ_BRIDGE_NAME_LENGTH	24	X'00000018'
MQ_CHANNEL_DATE_LENGTH	12	X'0000000C'
MQ_CHANNEL_DESC_LENGTH	64	X'00000040'
MQ_CHANNEL_NAME_LENGTH	20	X'00000014'
MQ_CHANNEL_TIME_LENGTH	8	X'00000008'
MQ_CLUSTER_NAME_LENGTH	48	X'00000030'
MQ_CONN_NAME_LENGTH	264	X'00000108'
MQ_CORREL_ID_LENGTH	24	X'00000018'
MQ_CREATION_DATE_LENGTH	12	X'0000000C'
MQ_CREATION_TIME_LENGTH	8	X'00000008'
MQ_DATE_LENGTH	12	X'0000000C'
MQ_EXIT_DATA_LENGTH	32	X'00000020'
MQ_EXIT_NAME_LENGTH	(environment specific)	
MQ_EXIT_USER_AREA_LENGTH	16	X'00000010'
MQ_FORMAT_LENGTH	8	X'00000008'
MQ_LTERM_OVERRIDE_LENGTH	8	X'00000008'
MQ_LUWID_LENGTH	16	X'00000010'

## Constants

MQ_MCA_JOB_NAME_LENGTH	28	X'0000001C'
MQ_MCA_NAME_LENGTH	20	X'00000014'
MQ_MFS_MAP_NAME_LENGTH	8	X'00000008'
MQ_MODE_NAME_LENGTH	8	X'00000008'
MQ_MSG_HEADER_LENGTH	4000	X'00000FA0'
MQ_MSG_ID_LENGTH	24	X'00000018'
MQ_MSG_TOKEN_LENGTH	16	X'00000010'
MQ_NAMELIST_DESC_LENGTH	64	X'00000040'
MQ_NAMELIST_NAME_LENGTH	48	X'00000030'
MQ_OBJECT_INSTANCE_ID_LENGTH	24	X'00000018'
MQ_OBJECT_NAME_LENGTH	48	X'00000030'
MQ_PASSWORD_LENGTH	12	X'0000000C'
MQ_PROCESS_APPL_ID_LENGTH	256	X'00000100'
MQ_PROCESS_DESC_LENGTH	64	X'00000040'
MQ_PROCESS_ENV_DATA_LENGTH	128	X'00000080'
MQ_PROCESS_NAME_LENGTH	48	X'00000030'
MQ_PROCESS_USER_DATA_LENGTH	128	X'00000080'
MQ_PUT_APPL_NAME_LENGTH	28	X'0000001C'
MQ_PUT_DATE_LENGTH	8	X'00000008'
MQ_PUT_TIME_LENGTH	8	X'00000008'
MQ_Q_DESC_LENGTH	64	X'00000040'
MQ_Q_MGR_DESC_LENGTH	64	X'00000040'
MQ_Q_MGR_IDENTIFIER_LENGTH	48	X'00000030'
MQ_Q_MGR_NAME_LENGTH	48	X'00000030'
MQ_Q_NAME_LENGTH	48	X'00000030'
MQ_SECURITY_ID_LENGTH	40	X'00000028'
MQ_SERVICE_NAME_LENGTH	32	X'00000020'
MQ_SERVICE_STEP_LENGTH	8	X'00000008'
MQ_SHORT_CONN_NAME_LENGTH	20	X'00000014'
MQ_STORAGE_CLASS_LENGTH	8	X'00000008'
MQ_TIME_LENGTH	8	X'00000008'
MQ_TOTAL_EXIT_DATA_LENGTH	999	X'000003E7'
MQ_TOTAL_EXIT_NAME_LENGTH	999	X'000003E7'
MQ_TP_NAME_LENGTH	64	X'00000040'
MQ_TRAN_INSTANCE_ID_LENGTH	16	X'00000010'
MQ_TRIGGER_DATA_LENGTH	64	X'00000040'
MQ_USER_ID_LENGTH	12	X'0000000C'
MQ_MAX_EXIT_NAME_LENGTH	128	X'00000080'
MQ_MAX_MCA_USER_ID_LENGTH	64	X'00000040'
MQ_MCA_USER_ID_LENGTH	(environment specific)	

### MQACT\_\* (Action option)

MQACT_FORCE_REMOVE	1	X'00000001'
--------------------	---	-------------

### MQBT\_\* (Bridge type)

MQBT_OTMA	1	X'00000001'
-----------	---	-------------

**MQCA\_\* (Character attribute selector)**

MQCA_FIRST	2001	X'000007D1'
MQCA_APPL_ID	2001	X'000007D1'
MQCA_BASE_Q_NAME	2002	X'000007D2'
MQCA_COMMAND_INPUT_Q_NAME	2003	X'000007D3'
MQCA_CREATION_DATE	2004	X'000007D4'
MQCA_CREATION_TIME	2005	X'000007D5'
MQCA_DEAD_LETTER_Q_NAME	2006	X'000007D6'
MQCA_ENV_DATA	2007	X'000007D7'
MQCA_INITIATION_Q_NAME	2008	X'000007D8'
MQCA_NAMELIST_DESC	2009	X'000007D9'
MQCA_NAMELIST_NAME	2010	X'000007DA'
MQCA_PROCESS_DESC	2011	X'000007DB'
MQCA_PROCESS_NAME	2012	X'000007DC'
MQCA_Q_DESC	2013	X'000007DD'
MQCA_Q_MGR_DESC	2014	X'000007DE'
MQCA_Q_MGR_NAME	2015	X'000007DF'
MQCA_Q_NAME	2016	X'000007E0'
MQCA_REMOTE_Q_MGR_NAME	2017	X'000007E1'
MQCA_REMOTE_Q_NAME	2018	X'000007E2'
MQCA_BACKOUT_REQ_Q_NAME	2019	X'000007E3'
MQCA_NAMES	2020	X'000007E4'
MQCA_USER_DATA	2021	X'000007E5'
MQCA_STORAGE_CLASS	2022	X'000007E6'
MQCA_TRIGGER_DATA	2023	X'000007E7'
MQCA_XMIT_Q_NAME	2024	X'000007E8'
MQCA_DEF_XMIT_Q_NAME	2025	X'000007E9'
MQCA_CHANNEL_AUTO_DEF_EXIT	2026	X'000007EA'
MQCA_ALTERATION_DATE	2027	X'000007EB'
MQCA_ALTERATION_TIME	2028	X'000007EC'
MQCA_CLUSTER_NAME	2029	X'000007ED'
MQCA_CLUSTER_NAMELIST	2030	X'000007EE'
MQCA_CLUSTER_Q_MGR_NAME	2031	X'000007EF'
MQCA_Q_MGR_IDENTIFIER	2032	X'000007F0'
MQCA_CLUSTER_WORKLOAD_EXIT	2033	X'000007F1'
MQCA_CLUSTER_WORKLOAD_DATA	2034	X'000007F2'
MQCA_REPOSITORY_NAME	2035	X'000007F3'
MQCA_REPOSITORY_NAMELIST	2036	X'000007F4'
MQCA_CLUSTER_DATE	2037	X'000007F5'
MQCA_CLUSTER_TIME	2038	X'000007F6'
MQCA_USER_LIST	4000	X'00000FA0'
MQCA_LAST	4000	X'00000FA0'
MQCA_LAST_USED	(environment specific)	

**MQCACF\_\* (Character attribute command format parameter)**

MQCACF_FIRST	3001	X'00000BB9'
MQCACF_FROM_Q_NAME	3001	X'00000BB9'
MQCACF_TO_Q_NAME	3002	X'00000BBA'
MQCACF_FROM_PROCESS_NAME	3003	X'00000BBB'
MQCACF_TO_PROCESS_NAME	3004	X'00000BBC'
MQCACF_FROM_NAMELIST_NAME	3005	X'00000BBD'
MQCACF_TO_NAMELIST_NAME	3006	X'00000BBE'

## Constants

MQCACF_FROM_CHANNEL_NAME	3007	X'00000BBF'
MQCACF_TO_CHANNEL_NAME	3008	X'00000BC0'
MQCACF_Q_NAMES	3011	X'00000BC3'
MQCACF_PROCESS_NAMES	3012	X'00000BC4'
MQCACF_NAMELIST_NAMES	3013	X'00000BC5'
MQCACF_ESCAPE_TEXT	3014	X'00000BC6'
MQCACF_LOCAL_Q_NAMES	3015	X'00000BC7'
MQCACF_MODEL_Q_NAMES	3016	X'00000BC8'
MQCACF_ALIAS_Q_NAMES	3017	X'00000BC9'
MQCACF_REMOTE_Q_NAMES	3018	X'00000BCA'
MQCACF_SENDER_CHANNEL_NAMES	3019	X'00000BCB'
MQCACF_SERVER_CHANNEL_NAMES	3020	X'00000BCC'
MQCACF_REQUESTER_CHANNEL_NAMES	3021	X'00000BCD'
MQCACF_RECEIVER_CHANNEL_NAMES	3022	X'00000BCE'
MQCACF_OBJECT_Q_MGR_NAME	3023	X'00000BCF'
MQCACF_APPL_NAME	3024	X'00000BD0'
MQCACF_USER_IDENTIFIER	3025	X'00000BD1'
MQCACF_AUX_ERROR_DATA_STR_1	3026	X'00000BD2'
MQCACF_AUX_ERROR_DATA_STR_2	3027	X'00000BD3'
MQCACF_AUX_ERROR_DATA_STR_3	3028	X'00000BD4'
MQCACF_BRIDGE_NAME	3029	X'00000BD5'
MQCACF_LAST_USED	3029	X'00000BD5'

## MQCACH\_\* (Channel character attribute command format parameter)

MQCACH_FIRST	3501	X'00000DAD'
MQCACH_CHANNEL_NAME	3501	X'00000DAD'
MQCACH_DESC	3502	X'00000DAE'
MQCACH_MODE_NAME	3503	X'00000DAF'
MQCACH_TP_NAME	3504	X'00000DB0'
MQCACH_XMIT_Q_NAME	3505	X'00000DB1'
MQCACH_CONNECTION_NAME	3506	X'00000DB2'
MQCACH_MCA_NAME	3507	X'00000DB3'
MQCACH_SEC_EXIT_NAME	3508	X'00000DB4'
MQCACH_MSG_EXIT_NAME	3509	X'00000DB5'
MQCACH_SEND_EXIT_NAME	3510	X'00000DB6'
MQCACH_RCV_EXIT_NAME	3511	X'00000DB7'
MQCACH_CHANNEL_NAMES	3512	X'00000DB8'
MQCACH_SEC_EXIT_USER_DATA	3513	X'00000DB9'
MQCACH_MSG_EXIT_USER_DATA	3514	X'00000DBA'
MQCACH_SEND_EXIT_USER_DATA	3515	X'00000DBB'
MQCACH_RCV_EXIT_USER_DATA	3516	X'00000DBC'
MQCACH_USER_ID	3517	X'00000DBD'
MQCACH_PASSWORD	3518	X'00000DBE'
MQCACH_LAST_MSG_TIME	3524	X'00000DC4'
MQCACH_LAST_MSG_DATE	3525	X'00000DC5'
MQCACH_MCA_USER_ID	3527	X'00000DC7'
MQCACH_CHANNEL_START_TIME	3528	X'00000DC8'
MQCACH_CHANNEL_START_DATE	3529	X'00000DC9'
MQCACH_MCA_JOB_NAME	3530	X'00000DCA'
MQCACH_LAST_LUWID	3531	X'00000DCB'
MQCACH_CURRENT_LUWID	3532	X'00000DCC'
MQCACH_FORMAT_NAME	3533	X'00000DCD'
MQCACH_MR_EXIT_NAME	3534	X'00000DCE'

MQCACH_MR_EXIT_USER_DATA	3535	X'00000DCF'
MQCACH_LAST_USED	(environment specific)	

**MQCDC\_\* (Channel data conversion)**

MQCDC_NO_SENDER_CONVERSION	0	X'00000000'
MQCDC_SENDER_CONVERSION	1	X'00000001'

**MQCFC\_\* (Command format control options)**

MQCFC_NOT_LAST	0	X'00000000'
MQCFC_LAST	1	X'00000001'

**MQCFH\_\* (Command format header structure length)**

MQCFH_STRUC_LENGTH	36	X'00000024'
--------------------	----	-------------

**MQCFH\_\* (Command format header version)**

MQCFH_VERSION_1	1	X'00000001'
MQCFH_CURRENT_VERSION	1	X'00000001'

**MQCFIL\_\* (Command format integer-list parameter structure length)**

MQCFIL_STRUC_LENGTH_FIXED	16	X'00000010'
---------------------------	----	-------------

**MQCFIN\_\* (Command format integer parameter structure length)**

MQCFIN_STRUC_LENGTH	16	X'00000010'
---------------------	----	-------------

**MQCFSL\_\* (Command format string-list parameter structure length)**

MQCFSL_STRUC_LENGTH_FIXED	24	X'00000018'
---------------------------	----	-------------

**MQCFST\_\* (Command format string parameter structure length)**

MQCFST_STRUC_LENGTH_FIXED	20	X'00000014'
---------------------------	----	-------------

**MQCFT\_\* (Command structure type)**

MQCFT_COMMAND	1	X'00000001'
MQCFT_RESPONSE	2	X'00000002'
MQCFT_INTEGER	3	X'00000003'
MQCFT_STRING	4	X'00000004'
MQCFT_INTEGER_LIST	5	X'00000005'
MQCFT_STRING_LIST	6	X'00000006'
MQCFT_EVENT	7	X'00000007'
MQCFT_USER	8	X'00000008'

**MQCHAD\_\* (Channel auto-definition event reporting)**

MQCHAD_DISABLED	0	X'00000000'
MQCHAD_ENABLED	1	X'00000001'

## Constants

### MQCHS\_\* (Channel status)

	MQCHS_INACTIVE	0	X'00000000'
	MQCHS_BINDING	1	X'00000001'
	MQCHS_STARTING	2	X'00000002'
	MQCHS_RUNNING	3	X'00000003'
	MQCHS_STOPPING	4	X'00000004'
	MQCHS_RETRYING	5	X'00000005'
	MQCHS_STOPPED	6	X'00000006'
	MQCHS_REQUESTING	7	X'00000007'
	MQCHS_PAUSED	8	X'00000008'
	MQCHS_INITIALIZING	13	X'0000000D'

### MQCHT\_\* (Channel type)

	MQCHT_SENDER	1	X'00000001'
	MQCHT_SERVER	2	X'00000002'
	MQCHT_RECEIVER	3	X'00000003'
	MQCHT_REQUESTER	4	X'00000004'
	MQCHT_ALL	5	X'00000005'
	MQCHT_CLNTCONN	6	X'00000006'
	MQCHT_SVRCONN	7	X'00000007'
	MQCHT_CLUSRCVR	8	X'00000008'
	MQCHT_CLUSSDR	9	X'00000009'

### MQCMD\_\* (Command identifier)

	MQCMD_NONE	0	X'00000000'
	MQCMD_CHANGE_Q_MGR	1	X'00000001'
	MQCMD_INQUIRE_Q_MGR	2	X'00000002'
	MQCMD_CHANGE_PROCESS	3	X'00000003'
	MQCMD_COPY_PROCESS	4	X'00000004'
	MQCMD_CREATE_PROCESS	5	X'00000005'
	MQCMD_DELETE_PROCESS	6	X'00000006'
	MQCMD_INQUIRE_PROCESS	7	X'00000007'
	MQCMD_CHANGE_Q	8	X'00000008'
	MQCMD_CLEAR_Q	9	X'00000009'
	MQCMD_COPY_Q	10	X'0000000A'
	MQCMD_CREATE_Q	11	X'0000000B'
	MQCMD_DELETE_Q	12	X'0000000C'
	MQCMD_INQUIRE_Q	13	X'0000000D'
	MQCMD_RESET_Q_STATS	17	X'00000011'
	MQCMD_INQUIRE_Q_NAMES	18	X'00000012'
	MQCMD_INQUIRE_PROCESS_NAMES	19	X'00000013'
	MQCMD_INQUIRE_CHANNEL_NAMES	20	X'00000014'
	MQCMD_CHANGE_CHANNEL	21	X'00000015'
	MQCMD_COPY_CHANNEL	22	X'00000016'
	MQCMD_CREATE_CHANNEL	23	X'00000017'
	MQCMD_DELETE_CHANNEL	24	X'00000018'
	MQCMD_INQUIRE_CHANNEL	25	X'00000019'
	MQCMD_PING_CHANNEL	26	X'0000001A'
	MQCMD_RESET_CHANNEL	27	X'0000001B'
	MQCMD_START_CHANNEL	28	X'0000001C'
	MQCMD_STOP_CHANNEL	29	X'0000001D'
	MQCMD_START_CHANNEL_INIT	30	X'0000001E'

	MQCMD_START_CHANNEL_LISTENER	31	X'0000001F'
	MQCMD_CHANGE_NAMELIST	32	X'00000020'
	MQCMD_COPY_NAMELIST	33	X'00000021'
	MQCMD_CREATE_NAMELIST	34	X'00000022'
	MQCMD_DELETE_NAMELIST	35	X'00000023'
	MQCMD_INQUIRE_NAMELIST	36	X'00000024'
	MQCMD_INQUIRE_NAMELIST_NAMES	37	X'00000025'
	MQCMD_ESCAPE	38	X'00000026'
	MQCMD_RESOLVE_CHANNEL	39	X'00000027'
	MQCMD_PING_Q_MGR	40	X'00000028'
	MQCMD_INQUIRE_CHANNEL_STATUS	42	X'0000002A'
	MQCMD_Q_MGR_EVENT	44	X'0000002C'
	MQCMD_PERFM_EVENT	45	X'0000002D'
	MQCMD_CHANNEL_EVENT	46	X'0000002E'
	MQCMD_INQUIRE_CLUSTER_Q_MGR	70	X'00000046'
	MQCMD_RESUME_Q_MGR_CLUSTER	71	X'00000047'
	MQCMD_SUSPEND_Q_MGR_CLUSTER	72	X'00000048'
	MQCMD_REFRESH_CLUSTER	73	X'00000049'
	MQCMD_RESET_CLUSTER	74	X'0000004A'

**MQCQT\_\* (Cluster queue type)**

	MQCQT_LOCAL_Q	1	X'00000001'
	MQCQT_ALIAS_Q	2	X'00000002'
	MQCQT_REMOTE_Q	3	X'00000003'
	MQCQT_Q_MGR_ALIAS	4	X'00000004'

**MQET\_\* (Escape type)**

	MQET_MQSC	1	X'00000001'
--	-----------	---	-------------

**MQEVR\_\* (Event reporting)**

	MQEVR_DISABLED	0	X'00000000'
	MQEVR_ENABLED	1	X'00000001'

**MQFC\_\* (Force control)**

	MQFC_NO	0	X'00000000'
	MQFC_YES	1	X'00000001'

**MQIA\_\* (Integer attribute selector)**

	MQIA_FIRST	1	X'00000001'
	MQIA_APPL_TYPE	1	X'00000001'
	MQIA_CODED_CHAR_SET_ID	2	X'00000002'
	MQIA_CURRENT_Q_DEPTH	3	X'00000003'
	MQIA_DEF_INPUT_OPEN_OPTION	4	X'00000004'
	MQIA_DEF_PERSISTENCE	5	X'00000005'
	MQIA_DEF_PRIORITY	6	X'00000006'
	MQIA_DEFINITION_TYPE	7	X'00000007'
	MQIA_HARDEN_GET_BACKOUT	8	X'00000008'
	MQIA_INHIBIT_GET	9	X'00000009'
	MQIA_INHIBIT_PUT	10	X'0000000A'
	MQIA_MAX_HANDLES	11	X'0000000B'
	MQIA_USAGE	12	X'0000000C'

## Constants

	MQIA_MAX_MSG_LENGTH	13	X'0000000D'
	MQIA_MAX_PRIORITY	14	X'0000000E'
	MQIA_MAX_Q_DEPTH	15	X'0000000F'
	MQIA_MSG_DELIVERY_SEQUENCE	16	X'00000010'
	MQIA_OPEN_INPUT_COUNT	17	X'00000011'
	MQIA_OPEN_OUTPUT_COUNT	18	X'00000012'
	MQIA_NAME_COUNT	19	X'00000013'
	MQIA_Q_TYPE	20	X'00000014'
	MQIA_RETENTION_INTERVAL	21	X'00000015'
	MQIA_BACKOUT_THRESHOLD	22	X'00000016'
	MQIA_SHAREABILITY	23	X'00000017'
	MQIA_TRIGGER_CONTROL	24	X'00000018'
	MQIA_TRIGGER_INTERVAL	25	X'00000019'
	MQIA_TRIGGER_MSG_PRIORITY	26	X'0000001A'
	MQIA_TRIGGER_TYPE	28	X'0000001C'
	MQIA_TRIGGER_DEPTH	29	X'0000001D'
	MQIA_SYNCPOINT	30	X'0000001E'
	MQIA_COMMAND_LEVEL	31	X'0000001F'
	MQIA_PLATFORM	32	X'00000020'
	MQIA_MAX_UNCOMMITTED_MSGS	33	X'00000021'
	MQIA_DIST_LISTS	34	X'00000022'
	MQIA_TIME_SINCE_RESET	35	X'00000023'
	MQIA_HIGH_Q_DEPTH	36	X'00000024'
	MQIA_MSG_ENQ_COUNT	37	X'00000025'
	MQIA_MSG_DEQ_COUNT	38	X'00000026'
	MQIA_Q_DEPTH_HIGH_LIMIT	40	X'00000028'
	MQIA_Q_DEPTH_LOW_LIMIT	41	X'00000029'
	MQIA_Q_DEPTH_MAX_EVENT	42	X'0000002A'
	MQIA_Q_DEPTH_HIGH_EVENT	43	X'0000002B'
	MQIA_Q_DEPTH_LOW_EVENT	44	X'0000002C'
	MQIA_SCOPE	45	X'0000002D'
	MQIA_Q_SERVICE_INTERVAL_EVENT	46	X'0000002E'
	MQIA_AUTHORITY	47	X'0000002F'
	MQIA_INHIBIT_EVENT	48	X'00000030'
	MQIA_LOCAL_EVENT	49	X'00000031'
	MQIA_REMOTE_EVENT	50	X'00000032'
	MQIA_START_STOP_EVENT	52	X'00000034'
	MQIA_PERFORMANCE_EVENT	53	X'00000035'
	MQIA_Q_SERVICE_INTERVAL	54	X'00000036'
	MQIA_CHANNEL_AUTO_DEF	55	X'00000037'
	MQIA_CHANNEL_AUTO_DEF_EVENT	56	X'00000038'
	MQIA_CLUSTER_WORKLOAD_LENGTH	58	X'0000003A'
	MQIA_CLUSTER_Q_TYPE	59	X'0000003B'
	MQIA_ARCHIVE	60	X'0000003C'
	MQIA_DEF_BIND	61	X'0000003D'
	MQIA_LAST_USED	61	X'0000003D'
	MQIA_USER_LAST	2000	X'000007D0'
	MQIA_LAST	2000	X'000007D0'

**MQIACF\_\* (Integer attribute command format parameter)**

MQIACF_FIRST	1001	X'000003E9'
MQIACF_Q_MGR_ATTRS	1001	X'000003E9'
MQIACF_Q_ATTRS	1002	X'000003EA'
MQIACF_PROCESS_ATTRS	1003	X'000003EB'
MQIACF_NAMELIST_ATTRS	1004	X'000003EC'
MQIACF_FORCE	1005	X'000003ED'
MQIACF_REPLACE	1006	X'000003EE'
MQIACF_PURGE	1007	X'000003EF'
MQIACF_QUIESCE	1008	X'000003F0'
MQIACF_ALL	1009	X'000003F1'
MQIACF_PARAMETER_ID	1012	X'000003F4'
MQIACF_ERROR_ID	1013	X'000003F5'
MQIACF_ERROR_IDENTIFIER	1013	X'000003F5'
MQIACF_SELECTOR	1014	X'000003F6'
MQIACF_CHANNEL_ATTRS	1015	X'000003F7'
MQIACF_ESCAPE_TYPE	1017	X'000003F9'
MQIACF_ERROR_OFFSET	1018	X'000003FA'
MQIACF_REASON_QUALIFIER	1020	X'000003FC'
MQIACF_COMMAND	1021	X'000003FD'
MQIACF_OPEN_OPTIONS	1022	X'000003FE'
MQIACF_AUX_ERROR_DATA_INT_1	1070	X'0000042E'
MQIACF_AUX_ERROR_DATA_INT_2	1071	X'0000042F'
MQIACF_CONV_REASON_CODE	1072	X'00000430'
MQIACF_BRIDGE_TYPE	1073	X'00000431'
MQIACF_INQUIRY	1074	X'00000432'
MQIACF_WAIT_INTERVAL	1075	X'00000433'
MQIACF_CLUSTER_INFO	1083	X'0000043B'
MQIACF_Q_MGR_DEFINITION_TYPE	1084	X'0000043C'
MQIACF_Q_MGR_TYPE	1085	X'0000043D'
MQIACF_ACTION	1086	X'0000043E'
MQIACF_SUSPEND	1087	X'0000043F'
MQIACF_LAST_USED	1087	X'0000043F'
MQIACF_CLUSTER_Q_MGR_ATTRS	1093	X'00000445'

**MQIACH\_\* (Channel Integer attribute command format parameter)**

MQIACH_FIRST	1501	X'000005DD'
MQIACH_XMIT_PROTOCOL_TYPE	1501	X'000005DD'
MQIACH_BATCH_SIZE	1502	X'000005DE'
MQIACH_DISC_INTERVAL	1503	X'000005DF'
MQIACH_SHORT_TIMER	1504	X'000005E0'
MQIACH_SHORT_RETRY	1505	X'000005E1'
MQIACH_LONG_TIMER	1506	X'000005E2'
MQIACH_LONG_RETRY	1507	X'000005E3'
MQIACH_PUT_AUTHORITY	1508	X'000005E4'
MQIACH_SEQUENCE_NUMBER_WRAP	1509	X'000005E5'
MQIACH_MAX_MSG_LENGTH	1510	X'000005E6'
MQIACH_CHANNEL_TYPE	1511	X'000005E7'
MQIACH_DATA_COUNT	1512	X'000005E8'
MQIACH_MSG_SEQUENCE_NUMBER	1514	X'000005EA'
MQIACH_DATA_CONVERSION	1515	X'000005EB'
MQIACH_IN_DOUBT	1516	X'000005EC'
MQIACH_MCA_TYPE	1517	X'000005ED'

## Constants

MQIACH_CHANNEL_INSTANCE_TYPE	1523	X'000005F3'
MQIACH_CHANNEL_INSTANCE_ATTRS	1524	X'000005F4'
MQIACH_CHANNEL_ERROR_DATA	1525	X'000005F5'
MQIACH_CHANNEL_TABLE	1526	X'000005F6'
MQIACH_CHANNEL_STATUS	1527	X'000005F7'
MQIACH_INDOUBT_STATUS	1528	X'000005F8'
MQIACH_LAST_SEQ_NUMBER	1529	X'000005F9'
MQIACH_CURRENT_MSGS	1531	X'000005FB'
MQIACH_CURRENT_SEQ_NUMBER	1532	X'000005FC'
MQIACH_MSGS	1534	X'000005FE'
MQIACH_BYTES_SENT	1535	X'000005FF'
MQIACH_BYTES_RCVD	1536	X'00000600'
MQIACH_BATCHES	1537	X'00000601'
MQIACH_BUFFERS_SENT	1538	X'00000602'
MQIACH_BUFFERS_RCVD	1539	X'00000603'
MQIACH_LONG_RETRIES_LEFT	1540	X'00000604'
MQIACH_SHORT_RETRIES_LEFT	1541	X'00000605'
MQIACH_MCA_STATUS	1542	X'00000606'
MQIACH_STOP_REQUESTED	1543	X'00000607'
MQIACH_MR_COUNT	1544	X'00000608'
MQIACH_MR_INTERVAL	1545	X'00000609'
MQIACH_NPM_SPEED	1562	X'0000061A'
MQIACH_HB_INTERVAL	1563	X'0000061B'
MQIACH_BATCH_INTERVAL	1564	X'0000061C'
MQIACH_NETWORK_PRIORITY	1565	X'0000061D'
MQIACH_LAST_USED	(environment specific)	

## MQOT\_\* (Object type)

MQOT_Q	1	X'00000001'
MQOT_PROCESS	3	X'00000003'
MQOT_Q_MGR	5	X'00000005'
MQOT_CHANNEL	6	X'00000006'
MQOT_ALL	1001	X'000003E9'
MQOT_ALIAS_Q	1002	X'000003EA'
MQOT_MODEL_Q	1003	X'000003EB'
MQOT_LOCAL_Q	1004	X'000003EC'
MQOT_REMOTE_Q	1005	X'000003ED'
MQOT_SENDER_CHANNEL	1007	X'000003EF'
MQOT_SERVER_CHANNEL	1008	X'000003F0'
MQOT_REQUESTER_CHANNEL	1009	X'000003F1'
MQOT_RECEIVER_CHANNEL	1010	X'000003F2'
MQOT_CURRENT_CHANNEL	1011	X'000003F3'
MQOT_SAVED_CHANNEL	1012	X'000003F4'
MQOT_SVRCONN_CHANNEL	1013	X'000003F5'
MQOT_CLNTCONN_CHANNEL	1014	X'000003F6'

**MQPO\_\* (Purge option)**

MQPO_NO	0	X'00000000'
MQPO_YES	1	X'00000001'

**MQQMDT\_\* (Queue-manager definition type)**

MQQMDT_EXPLICIT_CLUSTER_SENDER	1	X'00000001'
MQQMDT_AUTO_CLUSTER_SENDER	2	X'00000002'
MQQMDT_CLUSTER_RECEIVER	3	X'00000003'
MQQMDT_AUTO_EXP_CLUSTER_SENDER	4	X'00000004'

**MQQMT\_\* (Queue-manager type)**

MQQMT_NORMAL	0	X'00000000'
MQQMT_REPOSITORY	1	X'00000001'

**MQQO\_\* (Quiesce option)**

MQQO_NO	0	X'00000000'
MQQO_YES	1	X'00000001'

**MQQSIE\_\* (Service interval events)**

MQQSIE_NONE	0	X'00000000'
MQQSIE_HIGH	1	X'00000001'
MQQSIE_OK	2	X'00000002'

**MQQT\_\* (Queue type)**

MQQT_LOCAL	1	X'00000001'
MQQT_MODEL	2	X'00000002'
MQQT_ALIAS	3	X'00000003'
MQQT_REMOTE	6	X'00000006'
MQQT_CLUSTER	7	X'00000007'
MQQT_ALL	1001	X'000003E9'

**MQRCCF\_\* (Reason code for command format)**

Note: the following list is in **numeric order**.

MQRCCF_CFH_TYPE_ERROR	3001	X'00000BB9'
MQRCCF_CFH_LENGTH_ERROR	3002	X'00000BBA'
MQRCCF_CFH_VERSION_ERROR	3003	X'00000BBB'
MQRCCF_CFH_MSG_SEQ_NUMBER_ERR	3004	X'00000BBC'
MQRCCF_CFH_CONTROL_ERROR	3005	X'00000BBD'
MQRCCF_CFH_PARM_COUNT_ERROR	3006	X'00000BBE'
MQRCCF_CFH_COMMAND_ERROR	3007	X'00000BBF'
MQRCCF_COMMAND_FAILED	3008	X'00000BC0'
MQRCCF_CFIN_LENGTH_ERROR	3009	X'00000BC1'
MQRCCF_CFST_LENGTH_ERROR	3010	X'00000BC2'
MQRCCF_CFST_STRING_LENGTH_ERR	3011	X'00000BC3'
MQRCCF_FORCE_VALUE_ERROR	3012	X'00000BC4'
MQRCCF_STRUCTURE_TYPE_ERROR	3013	X'00000BC5'
MQRCCF_CFIN_PARM_ID_ERROR	3014	X'00000BC6'
MQRCCF_CFST_PARM_ID_ERROR	3015	X'00000BC7'
MQRCCF_MSG_LENGTH_ERROR	3016	X'00000BC8'

## Constants

MQRCCF_CFIN_DUPLICATE_PARM	3017	X'00000BC9'
MQRCCF_CFST_DUPLICATE_PARM	3018	X'00000BCA'
MQRCCF_PARM_COUNT_TOO_SMALL	3019	X'00000BCB'
MQRCCF_PARM_COUNT_TOO_BIG	3020	X'00000BCC'
MQRCCF_Q_ALREADY_IN_CELL	3021	X'00000BCD'
MQRCCF_Q_TYPE_ERROR	3022	X'00000BCE'
MQRCCF_MD_FORMAT_ERROR	3023	X'00000BCF'
MQRCCF_CFSL_LENGTH_ERROR	3024	X'00000BD0'
MQRCCF_REPLACE_VALUE_ERROR	3025	X'00000BD1'
MQRCCF_CFIL_DUPLICATE_VALUE	3026	X'00000BD2'
MQRCCF_CFIL_COUNT_ERROR	3027	X'00000BD3'
MQRCCF_CFIL_LENGTH_ERROR	3028	X'00000BD4'
MQRCCF QUIESCE_VALUE_ERROR	3029	X'00000BD5'
MQRCCF_MSG_SEQ_NUMBER_ERROR	3030	X'00000BD6'
MQRCCF_PING_DATA_COUNT_ERROR	3031	X'00000BD7'
MQRCCF_PING_DATA_COMPARE_ERROR	3032	X'00000BD8'
MQRCCF_CFSL_PARM_ID_ERROR	3033	X'00000BD9'
MQRCCF_CHANNEL_TYPE_ERROR	3034	X'00000BDA'
MQRCCF_PARM_SEQUENCE_ERROR	3035	X'00000BDB'
MQRCCF_XMIT_PROTOCOL_TYPE_ERR	3036	X'00000BDC'
MQRCCF_BATCH_SIZE_ERROR	3037	X'00000BDD'
MQRCCF_DISC_INT_ERROR	3038	X'00000BDE'
MQRCCF_SHORT_RETRY_ERROR	3039	X'00000BDF'
MQRCCF_SHORT_TIMER_ERROR	3040	X'00000BE0'
MQRCCF_LONG_RETRY_ERROR	3041	X'00000BE1'
MQRCCF_LONG_TIMER_ERROR	3042	X'00000BE2'
MQRCCF_SEQ_NUMBER_WRAP_ERROR	3043	X'00000BE3'
MQRCCF_MAX_MSG_LENGTH_ERROR	3044	X'00000BE4'
MQRCCF_PUT_AUTH_ERROR	3045	X'00000BE5'
MQRCCF_PURGE_VALUE_ERROR	3046	X'00000BE6'
MQRCCF_CFIL_PARM_ID_ERROR	3047	X'00000BE7'
MQRCCF_MSG_TRUNCATED	3048	X'00000BE8'
MQRCCF_CCSID_ERROR	3049	X'00000BE9'
MQRCCF_ENCODING_ERROR	3050	X'00000BEA'
MQRCCF_DATA_CONV_VALUE_ERROR	3052	X'00000BEC'
MQRCCF_INDOUBT_VALUE_ERROR	3053	X'00000BED'
MQRCCF_ESCAPE_TYPE_ERROR	3054	X'00000BEE'
MQRCCF_TP_NAME_ERROR	3056	X'00000BF0'
MQRCCF_CHANNEL_TABLE_ERROR	3062	X'00000BF6'
MQRCCF_MCA_TYPE_ERROR	3063	X'00000BF7'
MQRCCF_CHL_INST_TYPE_ERROR	3064	X'00000BF8'
MQRCCF_CHL_STATUS_NOT_FOUND	3065	X'00000BF9'
MQRCCF_CFSL_DUPLICATE_PARM	3066	X'00000BFA'
MQRCCF_CFSL_TOTAL_LENGTH_ERROR	3067	X'00000BFB'
MQRCCF_CFSL_COUNT_ERROR	3068	X'00000BFC'
MQRCCF_CFSL_STRING_LENGTH_ERR	3069	X'00000BFD'
MQRCCF_Q_MGR_CCSID_ERROR	3086	X'00000C0E'
MQRCCF_CLUSTER_NAME_CONFLICT	3088	X'00000C10'
MQRCCF_REPOS_NAME_CONFLICT	3089	X'00000C11'
MQRCCF_CLUSTER_Q_USAGE_ERROR	3090	X'00000C12'
MQRCCF_ACTION_VALUE_ERROR	3091	X'00000C13'
MQRCCF_COMMS_LIBRARY_ERROR	3092	X'00000C14'
MQRCCF_NETBIOS_NAME_ERROR	3093	X'00000C15'
MQRCCF_OBJECT_ALREADY_EXISTS	4001	X'00000FA1'

MQRCCF_OBJECT_WRONG_TYPE	4002	X'00000FA2'
MQRCCF_LIKE_OBJECT_WRONG_TYPE	4003	X'00000FA3'
MQRCCF_OBJECT_OPEN	4004	X'00000FA4'
MQRCCF_ATTR_VALUE_ERROR	4005	X'00000FA5'
MQRCCF_UNKNOWN_Q_MGR	4006	X'00000FA6'
MQRCCF_Q_WRONG_TYPE	4007	X'00000FA7'
MQRCCF_OBJECT_NAME_ERROR	4008	X'00000FA8'
MQRCCF_ALLOCATE_FAILED	4009	X'00000FA9'
MQRCCF_HOST_NOT_AVAILABLE	4010	X'00000FAA'
MQRCCF_CONFIGURATION_ERROR	4011	X'00000FAB'
MQRCCF_CONNECTION_REFUSED	4012	X'00000FAC'
MQRCCF_ENTRY_ERROR	4013	X'00000FAD'
MQRCCF_SEND_FAILED	4014	X'00000FAE'
MQRCCF_RECEIVED_DATA_ERROR	4015	X'00000FAF'
MQRCCF_RECEIVE_FAILED	4016	X'00000FB0'
MQRCCF_CONNECTION_CLOSED	4017	X'00000FB1'
MQRCCF_NO_STORAGE	4018	X'00000FB2'
MQRCCF_NO_COMMS_MANAGER	4019	X'00000FB3'
MQRCCF_LISTENER_NOT_STARTED	4020	X'00000FB4'
MQRCCF_BIND_FAILED	4024	X'00000FB8'
MQRCCF_CHANNEL_INDOUBT	4025	X'00000FB9'
MQRCCF_MQCONN_FAILED	4026	X'00000FBA'
MQRCCF_MQOPEN_FAILED	4027	X'00000FBB'
MQRCCF_MQGET_FAILED	4028	X'00000FBC'
MQRCCF_MQPUT_FAILED	4029	X'00000FBD'
MQRCCF_PING_ERROR	4030	X'00000FBE'
MQRCCF_CHANNEL_IN_USE	4031	X'00000FBF'
MQRCCF_CHANNEL_NOT_FOUND	4032	X'00000FC0'
MQRCCF_UNKNOWN_REMOTE_CHANNEL	4033	X'00000FC1'
MQRCCF_REMOTE_QM_UNAVAILABLE	4034	X'00000FC2'
MQRCCF_REMOTE_QM_TERMINATING	4035	X'00000FC3'
MQRCCF_MQINQ_FAILED	4036	X'00000FC4'
MQRCCF_NOT_XMIT_Q	4037	X'00000FC5'
MQRCCF_CHANNEL_DISABLED	4038	X'00000FC6'
MQRCCF_USER_EXIT_NOT_AVAILABLE	4039	X'00000FC7'
MQRCCF_COMMIT_FAILED	4040	X'00000FC8'
MQRCCF_CHANNEL_ALREADY_EXISTS	4042	X'00000FCA'
MQRCCF_DATA_TOO_LARGE	4043	X'00000FCB'
MQRCCF_CHANNEL_NAME_ERROR	4044	X'00000FCC'
MQRCCF_XMIT_Q_NAME_ERROR	4045	X'00000FCD'
MQRCCF_MCA_NAME_ERROR	4047	X'00000FCF'
MQRCCF_SEND_EXIT_NAME_ERROR	4048	X'00000FD0'
MQRCCF_SEC_EXIT_NAME_ERROR	4049	X'00000FD1'
MQRCCF_MSG_EXIT_NAME_ERROR	4050	X'00000FD2'
MQRCCF_RCV_EXIT_NAME_ERROR	4051	X'00000FD3'
MQRCCF_XMIT_Q_NAME_WRONG_TYPE	4052	X'00000FD4'
MQRCCF_MCA_NAME_WRONG_TYPE	4053	X'00000FD5'
MQRCCF_DISC_INT_WRONG_TYPE	4054	X'00000FD6'
MQRCCF_SHORT_RETRY_WRONG_TYPE	4055	X'00000FD7'
MQRCCF_SHORT_TIMER_WRONG_TYPE	4056	X'00000FD8'
MQRCCF_LONG_RETRY_WRONG_TYPE	4057	X'00000FD9'
MQRCCF_LONG_TIMER_WRONG_TYPE	4058	X'00000FDA'
MQRCCF_PUT_AUTH_WRONG_TYPE	4059	X'00000FDB'
MQRCCF_MISSING_CONN_NAME	4061	X'00000FDD'

## Constants

MQRCCF_CONN_NAME_ERROR	4062	X'00000FDE'
MQRCCF_MQSET_FAILED	4063	X'00000FDF'
MQRCCF_CHANNEL_NOT_ACTIVE	4064	X'00000FE0'
MQRCCF_TERMINATED_BY_SEC_EXIT	4065	X'00000FE1'
MQRCCF_DYNAMIC_Q_SCOPE_ERROR	4067	X'00000FE3'
MQRCCF_CELL_DIR_NOT_AVAILABLE	4068	X'00000FE4'
MQRCCF_MR_COUNT_ERROR	4069	X'00000FE5'
MQRCCF_MR_COUNT_WRONG_TYPE	4070	X'00000FE6'
MQRCCF_MR_EXIT_NAME_ERROR	4071	X'00000FE7'
MQRCCF_MR_EXIT_NAME_WRONG_TYPE	4072	X'00000FE8'
MQRCCF_MR_INTERVAL_ERROR	4073	X'00000FE9'
MQRCCF_MR_INTERVAL_WRONG_TYPE	4074	X'00000FEA'
MQRCCF_NPM_SPEED_ERROR	4075	X'00000FEB'
MQRCCF_NPM_SPEED_WRONG_TYPE	4076	X'00000FEC'
MQRCCF_HB_INTERVAL_ERROR	4077	X'00000FED'
MQRCCF_HB_INTERVAL_WRONG_TYPE	4078	X'00000FEE'
MQRCCF_CHAD_ERROR	4079	X'00000FEF'
MQRCCF_CHAD_WRONG_TYPE	4080	X'00000FF0'
MQRCCF_CHAD_EVENT_ERROR	4081	X'00000FF1'
MQRCCF_CHAD_EVENT_WRONG_TYPE	4082	X'00000FF2'
MQRCCF_CHAD_EXIT_ERROR	4083	X'00000FF3'
MQRCCF_CHAD_EXIT_WRONG_TYPE	4084	X'00000FF4'
MQRCCF_SUPPRESSED_BY_EXIT	4085	X'00000FF5'
MQRCCF_BATCH_INT_ERROR	4086	X'00000FF6'
MQRCCF_BATCH_INT_WRONG_TYPE	4087	X'00000FF7'
MQRCCF_NET_PRIORITY_ERROR	4088	X'00000FF8'
MQRCCF_NET_PRIORITY_WRONG_TYPE	4089	X'00000FF9'

### MQRP\_\* (Replace option)

MQRP_NO	0	X'00000000'
MQRP_YES	1	X'00000001'

### MQRQ\_\* (Reason qualifier)

MQRQ_CONN_NOT_AUTHORIZED	1	X'00000001'
MQRQ_OPEN_NOT_AUTHORIZED	2	X'00000002'
MQRQ_CLOSE_NOT_AUTHORIZED	3	X'00000003'
MQRQ_CMD_NOT_AUTHORIZED	4	X'00000004'
MQRQ_Q_MGR_STOPPING	5	X'00000005'
MQRQ_Q_MGR QUIESCING	6	X'00000006'
MQRQ_CHANNEL_STOPPED_OK	7	X'00000007'
MQRQ_CHANNEL_STOPPED_ERROR	8	X'00000008'
MQRQ_CHANNEL_STOPPED_RETRY	9	X'00000009'
MQRQ_CHANNEL_STOPPED_DISABLED	10	X'0000000A'
MQRQ_BRIDGE_STOPPED_OK	11	X'0000000B'
MQRQ_BRIDGE_STOPPED_ERROR	12	X'0000000C'

### MQSUS\_\* (Suspend status)

MQSUS_NO	0	X'00000000'
MQSUS_YES	1	X'00000001'

**MQZAET\_\* (Authority service entity type)**

MQZAET_PRINCIPAL	1	X'00000001'
MQZAET_GROUP	2	X'00000002'

**MQZAO\_\* (Authority service authorization type)**

MQZAO_CONNECT	1	X'00000001'
MQZAO_BROWSE	2	X'00000002'
MQZAO_INPUT	4	X'00000004'
MQZAO_OUTPUT	8	X'00000008'
MQZAO_INQUIRE	16	X'00000010'
MQZAO_SET	32	X'00000020'
MQZAO_PASS_IDENTITY_CONTEXT	64	X'00000040'
MQZAO_PASS_ALL_CONTEXT	128	X'00000080'
MQZAO_SET_IDENTITY_CONTEXT	256	X'00000100'
MQZAO_SET_ALL_CONTEXT	512	X'00000200'
MQZAO_ALTERNATE_USER_AUTHORITY	1024	X'00000400'
MQZAO_ALL_MQI	2047	X'000007FF'
MQZAO_CREATE	65536	X'00010000'
MQZAO_DELETE	131072	X'00020000'
MQZAO_DISPLAY	262144	X'00040000'
MQZAO_CHANGE	524288	X'00080000'
MQZAO_CLEAR	1048576	X'00100000'
MQZAO_AUTHORIZE	8388608	X'00800000'
MQZAO_START_STOP	16777216	X'01000000'
MQZAO_DISPLAY_STATUS	33554432	X'02000000'
MQZAO_RESOLVE_RESET	67108864	X'04000000'
MQZAO_PING	134217728	X'08000000'
MQZAO_ALL_ADMIN	262012928	X'0F9E0000'
MQZAO_NONE	0	X'00000000'
MQZAO_ALL	262014975	X'0F9E07FF'

**MQZAS\_\* (Authority service version)**

MQZAS_VERSION_1	1	X'00000001'
MQZAS_VERSION_2	2	X'00000002'

**MQZED\_\* (Entity descriptor structure identifier)**

MQZED_STRUC_ID	'ZEDb'
----------------	--------

For the C programming language, the following is also defined:

MQZED_STRUC_ID_ARRAY	'Z','E','D','b'
----------------------	-----------------

**MQZED\_\* (Entity descriptor version)**

MQZED_VERSION_1	1	X'00000001'
MQZED_CURRENT_VERSION	1	X'00000001'

## Constants

### MQZCI\_\* (Continuation indicator)

MQZCI_DEFAULT	0	X'00000000'
MQZCI_CONTINUE	0	X'00000000'
MQZCI_STOP	1	X'00000001'

### MQZID\_\* (Function identifier, all services)

MQZID_INIT	0	X'00000000'
MQZID_TERM	1	X'00000001'

### MQZID\_\* (Function identifier, authority service)

MQZID_INIT_AUTHORITY	0	X'00000000'
MQZID_TERM_AUTHORITY	1	X'00000001'
MQZID_CHECK_AUTHORITY	2	X'00000002'
MQZID_COPY_ALL_AUTHORITY	3	X'00000003'
MQZID_DELETE_AUTHORITY	4	X'00000004'
MQZID_SET_AUTHORITY	5	X'00000005'
MQZID_GET_AUTHORITY	6	X'00000006'
MQZID_GET_EXPLICIT_AUTHORITY	7	X'00000007'

### MQZID\_\* (Function identifier, name service)

MQZID_INIT_NAME	0	X'00000000'
MQZID_TERM_NAME	1	X'00000001'
MQZID_LOOKUP_NAME	2	X'00000002'
MQZID_INSERT_NAME	3	X'00000003'
MQZID_DELETE_NAME	4	X'00000004'

### MQZID\_\* (Function identifier, userid service)

MQZID_INIT_USERID	0	X'00000000'
MQZID_TERM_USERID	1	X'00000001'
MQZID_FIND_USERID	2	X'00000002'

### MQZIO\_\* (Initialization options)

MQZIO_PRIMARY	0	X'00000000'
MQZIO_SECONDARY	1	X'00000001'

### MQZNS\_\* (Name service version)

MQZNS_VERSION_1	1	X'00000001'
-----------------	---	-------------

### MQZTO\_\* (Termination options)

MQZTO_PRIMARY	0	X'00000000'
MQZTO_SECONDARY	1	X'00000001'

### MQZUS\_\* (Userid service version)

MQZUS_VERSION_1	1	X'00000001'
-----------------	---	-------------

---

## Appendix C. Header, COPY, and INCLUDE files

Various header, COPY, and INCLUDE files are provided to assist applications with the processing of:

- Event messages
- PCF commands and responses
- Installable services

These are described below for each of the supported programming languages. Not all of the files are available in all environments.

See:

- “C header files”
- “COBOL COPY files” on page 572
- “PL/I INCLUDE files” on page 572
- “System/390 Assembler COPY files” on page 573

---

### C header files

The following header files are provided for the C programming language.

<i>Table 27. C header files</i>	
<b>Filename</b>	<b>Contents relating to this book</b>
CMQC	Elementary data types, some named constants for events and PCF commands
CMQCFC	PCF structures, additional named constants for events and PCF commands
CMQXC	Named constants for events and PCF commands relating to channels
CMQZC	Function prototypes, data types, and named constants for installable services (available only on OS/2, UNIX systems, and Windows NT)

## COBOL COPY files

The following COPY files are provided for the COBOL programming language. Two COPY files are provided for each structure; one COPY file has initial values, the other does not.

File name (with initial values)	File name (without initial values)	Contents relating to this book
CMQV	–	Some named constants for events and PCF commands (not available on DOS clients and Windows clients)
CMQCFV	–	Additional named constants for events and PCF commands (available only on OS/390)
CMQXV	–	Named constants for events and PCF commands relating to channels (available only on OS/390 and OS/400)
CMQCFHV	CMQCFHL	Header structure for events and PCF commands (available only on OS/390)
CMQCFINV	CMQCFINL	Single-integer parameter structure for events and PCF commands (available only on OS/390)
CMQCFILV	CMQCFILL	Integer-list parameter structure for events and PCF commands (available only on OS/390)
CMQCFSTV	CMQCFSTL	Single-string parameter structure for events and PCF commands (available only on OS/390)
CMQCFSLV	CMQCFSSL	String-list parameter structure for events and PCF commands (available only on OS/390)

## PL/I INCLUDE files

The following INCLUDE files are provided for the PL/I programming language. These files are available only on AIX, OS/390, OS/2, and Windows NT.

Filename	Contents relating to this book
CMQP	Some named constants for events and PCF commands
CMQCFP	PCF structures, and additional named constants for events and PCF commands
CMQXP	Named constants for events and PCF commands relating to channels

---

## System/390 Assembler COPY files

The following COPY files are provided for the System/390 Assembler programming language. These files are available only on OS/390.

*Table 30. System/390 Assembler COPY files*

<b>Filename</b>	<b>Contents relating to this book</b>
CMQA	Some named constants for events and PCF commands
CMQCFA	Additional named constants for events and PCF commands
CMQXA	Named constants for events and PCF commands relating to channels
CMQCFHA	Header structure for events and PCF commands
CMQCFINA	Single-integer parameter structure for events and PCF commands
CMQCFILA	Integer-list parameter structure for events and PCF commands
CMQCFSTA	Single-string parameter structure for events and PCF commands
CMQCFSLA	String-list parameter structure for events and PCF commands



---

## Appendix D. Notices

This information was developed for products and services offered in the United States. IBM may not offer the products, services, or features discussed in this information in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this information. The furnishing of this information does not give you any license to these patents. You can send license inquiries, in writing, to:

| IBM Director of Licensing  
| IBM Corporation  
| North Castle Drive  
| Armonk, NY 10504-1785  
| U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation  
Licensing  
2-31 Roppongi 3-chome, Minato-ku  
Tokyo 106, Japan

**The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:**

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the information. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this information at any time without notice.

Any references in this information to non-IBM documentation or non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those documents or Web sites. The materials for those documents or Web sites are not part of the materials for this IBM product and use of those documents or Web sites is at your own risk.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM United Kingdom Laboratories,  
Mail Point 151,  
Hursley Park,  
Winchester,  
Hampshire,  
England  
SO21 2JN.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Programming License Agreement, or any equivalent agreement between us.

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. You may copy, modify, and distribute these sample programs in any form without payment to IBM for the purposes of developing, using, marketing, or distributing application programs conforming to IBM's application programming interfaces.

---

## Programming interface information

This book is intended to help you to write application programs that run under:

- MQSeries for AIX Version 5.1
- MQSeries for AS/400 Version 4 Release 2 Modification 1
- MQSeries for AT&T GIS UNIX Version 2 Release 2
- MQSeries for Digital OpenVMS Version 2 Release 2
- MQSeries for HP-UX Version 5.1
- MQSeries for OS/2 Warp Version 5.1
- MQSeries for OS/390 Version 2 Release 1
- MQSeries for SINIX and DC/OSx Version 2 Release 2
- MQSeries for Sun Solaris Version 5.1
- MQSeries for Tandem NonStop Kernel Version 2 Release 2
- MQSeries for Windows NT Version 5.1
- MQSeries for Windows Version 2 Release 1

This book documents General-use Programming Interface and Associated Guidance Information provided by the MQSeries products listed above.

General-use Programming Interfaces allow the customer to write programs that obtain the services of the MQSeries products listed above.

---

## Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, or other countries, or both:

AIX	AS/400	BookManager
CICS	DB2	IBM
IMS	MQSeries	NetView
OS/2	OS/390	OS/400
Presentation Manager	S/390	System 390
VSE/ESA		

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and/or other countries.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States and/or other countries.

UNIX is a registered trademark in the United States and/or other countries licensed exclusively through X/Open Company Limited.

Other company, product, or service names, may be the trademarks or service marks of others.

## Notices

---

## Part 5. Glossary and Index



## Glossary of terms and abbreviations

This glossary defines MQSeries terms and abbreviations used in this book. If you do not find the term you are looking for, see the Index or the *IBM Dictionary of Computing*, New York: McGraw-Hill, 1994.

This glossary includes terms and definitions from the *American National Dictionary for Information Systems*, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies may be purchased from the American National Standards Institute, 11 West 42 Street, New York, New York 10036. Definitions are identified by the symbol (A) after the definition.

### A

**abend reason code.** A 4-byte hexadecimal code that uniquely identifies a problem with MQSeries for OS/390. A complete list of MQSeries for OS/390 abend reason codes and their explanations is contained in the *MQSeries for OS/390 Messages and Codes* manual.

**active log.** See *recovery log*.

**adapter.** An interface between MQSeries for OS/390 and TSO, IMS, CICS, or batch address spaces. An adapter is an attachment facility that enables applications to access MQSeries services.

**address space.** The area of virtual storage available for a particular job.

**address space identifier (ASID).** A unique, system-assigned identifier for an address space.

**administrator commands.** MQSeries commands used to manage MQSeries objects, such as queues, processes, and namelists.

**alert.** A message sent to a management services focal point in a network to identify a problem or an impending problem.

**alert monitor.** In MQSeries for OS/390, a component of the CICS adapter that handles unscheduled events occurring as a result of connection requests to MQSeries for OS/390.

**alias queue object.** An MQSeries object, the name of which is an alias for a base queue defined to the local queue manager. When an application or a queue manager uses an alias queue, the alias name is resolved and the requested operation is performed on the associated base queue.

**allied address space.** See *ally*.

**ally.** An OS/390 address space that is connected to MQSeries for OS/390.

**alternate user security.** A security feature in which the authority of one user ID can be used by another user ID; for example, to open an MQSeries object.

**APAR.** Authorized program analysis report.

**application environment.** The software facilities that are accessible by an application program. On the OS/390 platform, CICS and IMS are examples of application environments.

**application log.** In Windows NT, a log that records significant application events.

**application queue.** A queue used by an application.

**archive log.** See *recovery log*.

**ASID.** Address space identifier.

**asynchronous messaging.** A method of communication between programs in which programs place messages on message queues. With asynchronous messaging, the sending program proceeds with its own processing without waiting for a reply to its message. Contrast with *synchronous messaging*.

**attribute.** One of a set of properties that defines the characteristics of an MQSeries object.

**authorization checks.** Security checks that are performed when a user tries to issue administration commands against an object, for example to open a queue or connect to a queue manager.

**authorization file.** In MQSeries on UNIX systems, a file that provides security definitions for an object, a class of objects, or all classes of objects.

**authorization service.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, a service that provides authority checking of commands and MQI calls for the user identifier associated with the command or call.

**authorized program analysis report (APAR).** A report of a problem caused by a suspected defect in a current, unaltered release of a program.

### B

**backout.** An operation that reverses all the changes made during the current unit of recovery or unit of work. After the operation is complete, a new unit of recovery or unit of work begins. Contrast with *commit*.

**bag.** See *data bag*.

**basic mapping support (BMS).** An interface between CICS and application programs that formats input and output display data and routes multiple-page output messages without regard for control characters used by various terminals.

**BMS.** Basic mapping support.

**bootstrap data set (BSDS).** A VSAM data set that contains:

- An inventory of all active and archived log data sets known to MQSeries for OS/390
- A wrap-around inventory of all recent MQSeries for OS/390 activity

The BSDS is required if the MQSeries for OS/390 subsystem has to be restarted.

**browse.** In message queuing, to use the MQGET call to copy a message without removing it from the queue. See also *get*.

**browse cursor.** In message queuing, an indicator used when browsing a queue to identify the message that is next in sequence.

**BSDS.** Bootstrap data set.

**buffer pool.** An area of main storage used for MQSeries for OS/390 queues, messages, and object definitions. See also *page set*.

### C

**call back.** In MQSeries, a requester message channel initiates a transfer from a sender channel by first calling the sender, then closing down and awaiting a call back.

**CCF.** Channel control function.

**CCSID.** Coded character set identifier.

**CDF.** Channel definition file.

**channel.** See *message channel*.

**channel control function (CCF).** In MQSeries, a program to move messages from a transmission queue to a communication link, and from a communication link to a local queue, together with an operator panel interface to allow the setup and control of channels.

**channel definition file (CDF).** In MQSeries, a file containing communication channel definitions that associate transmission queues with communication links.

**channel event.** An event indicating that a channel instance has become available or unavailable. Channel events are generated on the queue managers at both ends of the channel.

**checkpoint.** (1) A time when significant information is written on the log. Contrast with *syncpoint*. (2) In MQSeries on UNIX systems, the point in time when a data record described in the log is the same as the data record in the queue. Checkpoints are generated automatically and are used during the system restart process.

**CI.** Control interval.

**circular logging.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, the process of keeping all restart data in a ring of log files. Logging fills the first file in the ring and then moves on to the next, until all the files are full. At this point, logging goes back to the first file in the ring and starts again, if the space has been freed or is no longer needed. Circular logging is used during restart recovery, using the log to roll back transactions that were in progress when the system stopped. Contrast with *linear logging*.

**CL.** Control Language.

**client.** A run-time component that provides access to queuing services on a server for local user applications. The queues used by the applications reside on the server. See also *MQSeries client*.

**client application.** An application, running on a workstation and linked to a client, that gives the application access to queuing services on a server.

**client connection channel type.** The type of MQI channel definition associated with an MQSeries client. See also *server connection channel type*.

**cluster.** A network of queue managers that are logically associated in some way.

**coded character set identifier (CCSID).** The name of a coded set of characters and their code point assignments.

**command.** In MQSeries, an administration instruction that can be carried out by the queue manager.

**command prefix (CPF).** In MQSeries for OS/390, a character string that identifies the queue manager to which MQSeries for OS/390 commands are directed,

and from which MQSeries for OS/390 operator messages are received.

**command processor.** The MQSeries component that processes commands.

**command server.** The MQSeries component that reads commands from the system-command input queue, verifies them, and passes valid commands to the command processor.

**commit.** An operation that applies all the changes made during the current unit of recovery or unit of work. After the operation is complete, a new unit of recovery or unit of work begins. Contrast with *backout*.

**completion code.** A return code indicating how an MQI call has ended.

**configuration file.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, a file that contains configuration information related to, for example, logs, communications, or installable services. Synonymous with *.ini file*. See also *stanza*.

**connect.** To provide a queue manager connection handle, which an application uses on subsequent MQI calls. The connection is made either by the MQCONN call, or automatically by the MQOPEN call.

**connection handle.** The identifier or token by which a program accesses the queue manager to which it is connected.

**context.** Information about the origin of a message.

**context security.** In MQSeries, a method of allowing security to be handled such that messages are obliged to carry details of their origins in the message descriptor.

**control command.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, a command that can be entered interactively from the operating system command line. Such a command requires only that the MQSeries product be installed; it does not require a special utility or program to run it.

**control interval (CI).** A fixed-length area of direct access storage in which VSAM stores records and creates distributed free spaces. The control interval is the unit of information that VSAM transmits to or from direct access storage.

**Control Language (CL).** In MQSeries for AS/400, a language that can be used to issue commands, either at the command line or by writing a CL program.

**controlled shutdown.** See *quiesced shutdown*.

**CPF.** Command prefix.

**Cross Systems Coupling Facility (XCF).** Provides the OS/390 coupling services that allow authorized programs in a multisystem environment to communicate with programs on the same or different OS/390 systems.

## D

**DAE.** Dump analysis and elimination.

| **data bag.** In the MQAI, a bag that allows you to  
| handle properties (or parameters) of objects.

| **data item.** In the MQAI, an item contained within a  
| data bag. This can be an integer item or a  
| character-string item, and a user item or a system item.

**data conversion interface (DCI).** The MQSeries interface to which customer- or vendor-written programs that convert application data between different machine encodings and CCSIDs must conform. A part of the MQSeries Framework.

**datagram.** The simplest message that MQSeries supports. This type of message does not require a reply.

**DCE.** Distributed Computing Environment.

**DCI.** Data conversion interface.

**dead-letter queue (DLQ).** A queue to which a queue manager or application sends messages that it cannot deliver to their correct destination.

**dead-letter queue handler.** An MQSeries-supplied utility that monitors a dead-letter queue (DLQ) and processes messages on the queue in accordance with a user-written rules table.

**default object.** A definition of an object (for example, a queue) with all attributes defined. If a user defines an object but does not specify all possible attributes for that object, the queue manager uses default attributes in place of any that were not specified.

**deferred connection.** A pending event that is activated when a CICS subsystem tries to connect to MQSeries for OS/390 before MQSeries for OS/390 has been started.

**distributed application.** In message queuing, a set of application programs that can each be connected to a different queue manager, but that collectively constitute a single application.

**Distributed Computing Environment (DCE).** Middleware that provides some basic services, making

## distributed queue management (DQM) • functional recovery routine (FRR)

the development of distributed applications easier. DCE is defined by the Open Software Foundation (OSF).

**distributed queue management (DQM).** In message queuing, the setup and control of message channels to queue managers on other systems.

**DLQ.** Dead-letter queue.

**DQM.** Distributed queue management.

**dual logging.** A method of recording MQSeries for OS/390 activity, where each change is recorded on two data sets, so that if a restart is necessary and one data set is unreadable, the other can be used. Contrast with *single logging*.

**dual mode.** See *dual logging*.

**dump analysis and elimination (DAE).** An OS/390 service that enables an installation to suppress SVC dumps and ABEND SYSUDUMP dumps that are not needed because they duplicate previously written dumps.

**dynamic queue.** A local queue created when a program opens a model queue object. See also *permanent dynamic queue* and *temporary dynamic queue*.

## E

**environment.** See *application environment*.

**ESM.** External security manager.

**ESTAE.** Extended specify task abnormal exit.

**event.** See *channel event*, *instrumentation event*, *performance event*, and *queue manager event*.

**event data.** In an event message, the part of the message data that contains information about the event (such as the queue manager name, and the application that gave rise to the event). See also *event header*.

**event header.** In an event message, the part of the message data that identifies the event type of the reason code for the event.

**event log.** See *application log*.

**event message.** Contains information (such as the category of event, the name of the application that caused the event, and queue manager statistics) relating to the origin of an instrumentation event in a network of MQSeries systems.

**event queue.** The queue onto which the queue manager puts an event message after it detects an event. Each category of event (queue manager, performance, or channel event) has its own event queue.

**Event Viewer.** A tool provided by Windows NT to examine and manage log files.

**extended specify task abnormal exit (ESTAE).** An OS/390 macro that provides recovery capability and gives control to the specified exit routine for processing, diagnosing an abend, or specifying a retry address.

**external security manager (ESM).** A security product that is invoked by the OS/390 System Authorization Facility. RACF is an example of an ESM.

## F

**FFST.** First Failure Support Technology.

**FIFO.** First-in-first-out.

**First Failure Support Technology (FFST).** Used by MQSeries on UNIX systems, MQSeries for OS/2 Warp, MQSeries for Windows NT, and MQSeries for AS/400 to detect and report software problems.

**first-in-first-out (FIFO).** A queuing technique in which the next item to be retrieved is the item that has been in the queue for the longest time. (A)

**forced shutdown.** A type of shutdown of the CICS adapter where the adapter immediately disconnects from MQSeries for OS/390, regardless of the state of any currently active tasks. Contrast with *quiesced shutdown*.

**Framework.** In MQSeries, a collection of programming interfaces that allow customers or vendors to write programs that extend or replace certain functions provided in MQSeries products. The interfaces are:

- MQSeries data conversion interface (DCI)
- MQSeries message channel interface (MCI)
- MQSeries name service interface (NSI)
- MQSeries security enabling interface (SEI)
- MQSeries trigger monitor interface (TMI)

**FRR.** Functional recovery routine.

**functional recovery routine (FRR).** An OS/390 recovery/termination manager facility that enables a recovery routine to gain control in the event of a program interrupt.

## G

**GCPC.** Generalized command preprocessor.

**generalized command preprocessor (GCPC).** An MQSeries for OS/390 component that processes MQSeries commands and runs them.

**Generalized Trace Facility (GTF).** An OS/390 service program that records significant system events, such as supervisor calls and start I/O operations, for the purpose of problem determination.

**get.** In message queuing, to use the MQGET call to remove a message from a queue. See also *browse*.

**global trace.** An MQSeries for OS/390 trace option where the trace data comes from the entire MQSeries for OS/390 subsystem.

**GTF.** Generalized Trace Facility.

## H

**handle.** See *connection handle* and *object handle*.

**hardened message.** A message that is written to auxiliary (disk) storage so that the message will not be lost in the event of a system failure. See also *persistent message*.

## I

**immediate shutdown.** In MQSeries, a shutdown of a queue manager that does not wait for applications to disconnect. Current MQI calls are allowed to complete, but new MQI calls fail after an immediate shutdown has been requested. Contrast with *quiesced shutdown* and *preemptive shutdown*.

**in-doubt unit of recovery.** In MQSeries, the status of a unit of recovery for which a syncpoint has been requested but not yet confirmed.

**.ini file.** See *configuration file*.

**initialization input data sets.** Data sets used by MQSeries for OS/390 when it starts up.

**initiation queue.** A local queue on which the queue manager puts trigger messages.

**input/output parameter.** A parameter of an MQI call in which you supply information when you make the call, and in which the queue manager changes the information when the call completes or fails.

**input parameter.** A parameter of an MQI call in which you supply information when you make the call.

**installable services.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, additional functionality provided as independent components. The installation of each component is optional: in-house or third-party components can be used instead. See also *authorization service*, *name service*, and *user identifier service*.

**instrumentation event.** A facility that can be used to monitor the operation of queue managers in a network of MQSeries systems. MQSeries provides instrumentation events for monitoring queue manager resource definitions, performance conditions, and channel conditions. Instrumentation events can be used by a user-written reporting mechanism in an administration application that displays the events to a system operator. They also allow applications acting as agents for other administration networks to monitor reports and create the appropriate alerts.

**Interactive Problem Control System (IPCS).** A component of OS/390 that permits online problem management, interactive problem diagnosis, online debugging for disk-resident abend dumps, problem tracking, and problem reporting.

**Interactive System Productivity Facility (ISPF).** An IBM licensed program that serves as a full-screen editor and dialog manager. It is used for writing application programs, and provides a means of generating standard screen panels and interactive dialogues between the application programmer and terminal user.

**IPCS.** Interactive Problem Control System.

**ISPF.** Interactive System Productivity Facility.

## L

**linear logging.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, the process of keeping restart data in a sequence of files. New files are added to the sequence as necessary. The space in which the data is written is not reused until the queue manager is restarted. Contrast with *circular logging*.

**listener.** In MQSeries distributed queuing, a program that monitors for incoming network connections.

**local definition.** An MQSeries object belonging to a local queue manager.

**local definition of a remote queue.** An MQSeries object belonging to a local queue manager. This object defines the attributes of a queue that is owned by another queue manager. In addition, it is used for queue-manager aliasing and reply-to-queue aliasing.

## locale • MQI channel

**locale.** On UNIX systems, a subset of a user's environment that defines conventions for a specific culture (such as time, numeric, or monetary formatting and character classification, collation, or conversion). The queue manager CCSID is derived from the locale of the user ID that created the queue manager.

**local queue.** A queue that belongs to the local queue manager. A local queue can contain a list of messages waiting to be processed. Contrast with *remote queue*.

**local queue manager.** The queue manager to which a program is connected and that provides message queuing services to the program. Queue managers to which a program is not connected are called *remote queue managers*, even if they are running on the same system as the program.

**log.** In MQSeries, a file recording the work done by queue managers while they receive, transmit, and deliver messages, to enable them to recover in the event of failure.

**log control file.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, the file containing information needed to monitor the use of log files (for example, their size and location, and the name of the next available file).

**log file.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, a file in which all significant changes to the data controlled by a queue manager are recorded. If the primary log files become full, MQSeries allocates secondary log files.

**logical unit of work (LUW).** See *unit of work*.

## M

**machine check interrupt.** An interruption that occurs as a result of an equipment malfunction or error. A machine check interrupt can be either hardware recoverable, software recoverable, or nonrecoverable.

**MCA.** Message channel agent.

**MCI.** Message channel interface.

**media image.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, the sequence of log records that contain an image of an object. The object can be recreated from this image.

**message.** (1) In message queuing applications, a communication sent between programs. See also *persistent message* and *nonpersistent message*. (2) In system programming, information intended for the terminal operator or system administrator.

**message channel.** In distributed message queuing, a mechanism for moving messages from one queue manager to another. A message channel comprises two message channel agents (a sender at one end and a receiver at the other end) and a communication link. Contrast with *MQI channel*.

**message channel agent (MCA).** A program that transmits prepared messages from a transmission queue to a communication link, or from a communication link to a destination queue. See also *message queue interface*.

**message channel interface (MCI).** The MQSeries interface to which customer- or vendor-written programs that transmit messages between an MQSeries queue manager and another messaging system must conform. A part of the MQSeries Framework.

**message descriptor.** Control information describing the message format and presentation that is carried as part of an MQSeries message. The format of the message descriptor is defined by the MQMD structure.

**message priority.** In MQSeries, an attribute of a message that can affect the order in which messages on a queue are retrieved, and whether a trigger event is generated.

**message queue.** Synonym for *queue*.

**message queue interface (MQI).** The programming interface provided by the MQSeries queue managers. This programming interface allows application programs to access message queuing services.

**message queuing.** A programming technique in which each program within an application communicates with the other programs by putting messages on queues.

**message sequence numbering.** A programming technique in which messages are given unique numbers during transmission over a communication link. This enables the receiving process to check whether all messages are received, to place them in a queue in the original order, and to discard duplicate messages.

**messaging.** See *synchronous messaging* and *asynchronous messaging*.

**model queue object.** A set of queue attributes that act as a template when a program creates a dynamic queue.

**MQAI.** MQSeries Administration Interface.

**MQI.** Message queue interface.

**MQI channel.** Connects an MQSeries client to a queue manager on a server system, and transfers only

MQI calls and responses in a bidirectional manner. Contrast with *message channel*.

**MQSC.** MQSeries commands.

**MQSeries.** A family of IBM licensed programs that provides message queuing services.

**MQSeries Administration Interface (MQAI).** A programming interface to MQSeries.

**MQSeries client.** Part of an MQSeries product that can be installed on a system without installing the full queue manager. The MQSeries client accepts MQI calls from applications and communicates with a queue manager on a server system.

**MQSeries commands (MQSC).** Human readable commands, uniform across all platforms, that are used to manipulate MQSeries objects. Contrast with *programmable command format (PCF)*.

## N

**namelist.** An MQSeries object that contains a list of names, for example, queue names.

**name service.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, the facility that determines which queue manager owns a specified queue.

**name service interface (NSI).** The MQSeries interface to which customer- or vendor-written programs that resolve queue-name ownership must conform. A part of the MQSeries Framework.

**name transformation.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, an internal process that changes a queue manager name so that it is unique and valid for the system being used. Externally, the queue manager name remains unchanged.

**New Technology File System (NTFS).** A Windows NT recoverable file system that provides security for files.

**nonpersistent message.** A message that does not survive a restart of the queue manager. Contrast with *persistent message*.

**NSI.** Name service interface.

**NTFS.** New Technology File System.

**null character.** The character that is represented by X'00'.

## O

**OAM.** Object authority manager.

**object.** In MQSeries, an object is a queue manager, a queue, a process definition, a channel, a namelist, or a storage class (OS/390 only).

**object authority manager (OAM).** In MQSeries on UNIX systems and MQSeries for Windows NT, the default authorization service for command and object management. The OAM can be replaced by, or run in combination with, a customer-supplied security service.

**object descriptor.** A data structure that identifies a particular MQSeries object. Included in the descriptor are the name of the object and the object type.

**object handle.** The identifier or token by which a program accesses the MQSeries object with which it is working.

**off-loading.** In MQSeries for OS/390, an automatic process whereby a queue manager's active log is transferred to its archive log.

**Open Transaction Manager Access (OTMA).** A transaction-based, connectionless client/server protocol. It functions as an interface for host-based communications servers accessing IMS TM applications through the OS/390 Cross Systems Coupling Facility (XCF). OTMA is implemented in an OS/390 sysplex environment. Therefore, the domain of OTMA is restricted to the domain of XCF.

**OTMA.** Open Transaction Manager Access.

**output log-buffer.** In MQSeries for OS/390, a buffer that holds recovery log records before they are written to the archive log.

**output parameter.** A parameter of an MQI call in which the queue manager returns information when the call completes or fails.

## P

**page set.** A VSAM data set used when MQSeries for OS/390 moves data (for example, queues and messages) from buffers in main storage to permanent backing storage (DASD).

**PCF.** Programmable command format.

**PCF command.** See *programmable command format*.

**pending event.** An unscheduled event that occurs as a result of a connect request from a CICS adapter.

## percolation • quiescing

**percolation.** In error recovery, the passing along a preestablished path of control from a recovery routine to a higher-level recovery routine.

**performance event.** A category of event indicating that a limit condition has occurred.

**performance trace.** An MQSeries trace option where the trace data is to be used for performance analysis and tuning.

**permanent dynamic queue.** A dynamic queue that is deleted when it is closed only if deletion is explicitly requested. Permanent dynamic queues are recovered if the queue manager fails, so they can contain persistent messages. Contrast with *temporary dynamic queue*.

**persistent message.** A message that survives a restart of the queue manager. Contrast with *nonpersistent message*.

**ping.** In distributed queuing, a diagnostic aid that uses the exchange of a test message to confirm that a message channel or a TCP/IP connection is functioning.

**platform.** In MQSeries, the operating system under which a queue manager is running.

**point of recovery.** In MQSeries for OS/390, the term used to describe a set of backup copies of MQSeries for OS/390 page sets and the corresponding log data sets required to recover these page sets. These backup copies provide a potential restart point in the event of page set loss (for example, page set I/O error).

**preemptive shutdown.** In MQSeries, a shutdown of a queue manager that does not wait for connected applications to disconnect, nor for current MQI calls to complete. Contrast with *immediate shutdown* and *quiesced shutdown*.

**principal.** In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, a term used for a user identifier. Used by the object authority manager for checking authorizations to system resources.

**process definition object.** An MQSeries object that contains the definition of an MQSeries application. For example, a queue manager uses the definition when it works with trigger messages.

**programmable command format (PCF).** A type of MQSeries message used by:

- User administration applications, to put PCF commands onto the system command input queue of a specified queue manager

- User administration applications, to get the results of a PCF command from a specified queue manager
- A queue manager, as a notification that an event has occurred

Contrast with *MQSC*.

**program temporary fix (PTF).** A solution or by-pass of a problem diagnosed by IBM field engineering as the result of a defect in a current, unaltered release of a program.

**PTF.** Program temporary fix.

## Q

**queue.** An MQSeries object. Message queuing applications can put messages on, and get messages from, a queue. A queue is owned and maintained by a queue manager. Local queues can contain a list of messages waiting to be processed. Queues of other types cannot contain messages—they point to other queues, or can be used as models for dynamic queues.

**queue manager.** (1) A system program that provides queuing services to applications. It provides an application programming interface so that programs can access messages on the queues that the queue manager owns. See also *local queue manager* and *remote queue manager*. (2) An MQSeries object that defines the attributes of a particular queue manager.

**queue manager event.** An event that indicates:

- An error condition has occurred in relation to the resources used by a queue manager. For example, a queue is unavailable.
- A significant change has occurred in the queue manager. For example, a queue manager has stopped or started.

**queuing.** See *message queuing*.

**quiesced shutdown.** (1) In MQSeries, a shutdown of a queue manager that allows all connected applications to disconnect. Contrast with *immediate shutdown* and *preemptive shutdown*. (2) A type of shutdown of the CICS adapter where the adapter disconnects from MQSeries, but only after all the currently active tasks have been completed. Contrast with *forced shutdown*.

**quiescing.** In MQSeries, the state of a queue manager prior to it being stopped. In this state, programs are allowed to finish processing, but no new programs are allowed to start.

## R

**RBA.** Relative byte address.

**reason code.** A return code that describes the reason for the failure or partial success of an MQI call.

**receiver channel.** In message queuing, a channel that responds to a sender channel, takes messages from a communication link, and puts them on a local queue.

**recovery log.** In MQSeries for OS/390, data sets containing information needed to recover messages, queues, and the MQSeries subsystem. MQSeries for OS/390 writes each record to a data set called the *active log*. When the active log is full, its contents are off-loaded to a DASD or tape data set called the *archive log*. Synonymous with *log*.

**recovery termination manager (RTM).** A program that handles all normal and abnormal termination of tasks by passing control to a recovery routine associated with the terminating function.

**Registry.** In Windows NT, a secure database that provides a single source for system and application configuration data.

**Registry Editor.** In Windows NT, the program item that allows the user to edit the Registry.

**Registry Hive.** In Windows NT, the structure of the data stored in the Registry.

**relative byte address (RBA).** The displacement in bytes of a stored record or control interval from the beginning of the storage space allocated to the data set to which it belongs.

**remote queue.** A queue belonging to a remote queue manager. Programs can put messages on remote queues, but they cannot get messages from remote queues. Contrast with *local queue*.

**remote queue manager.** To a program, a queue manager that is not the one to which the program is connected.

**remote queue object.** See *local definition of a remote queue*.

**remote queuing.** In message queuing, the provision of services to enable applications to put messages on queues belonging to other queue managers.

**reply message.** A type of message used for replies to request messages. Contrast with *request message* and *report message*.

**reply-to queue.** The name of a queue to which the program that issued an MQPUT call wants a reply message or report message sent.

**report message.** A type of message that gives information about another message. A report message can indicate that a message has been delivered, has arrived at its destination, has expired, or could not be processed for some reason. Contrast with *reply message* and *request message*.

**requester channel.** In message queuing, a channel that may be started remotely by a sender channel. The requester channel accepts messages from the sender channel over a communication link and puts the messages on the local queue designated in the message. See also *server channel*.

**request message.** A type of message used to request a reply from another program. Contrast with *reply message* and *report message*.

**RESLEVEL.** In MQSeries for OS/390, an option that controls the number of CICS user IDs checked for API-resource security in MQSeries for OS/390.

**resolution path.** The set of queues that are opened when an application specifies an alias or a remote queue on input to an MQOPEN call.

**resource.** Any facility of the computing system or operating system required by a job or task. In MQSeries for OS/390, examples of resources are buffer pools, page sets, log data sets, queues, and messages.

**resource manager.** An application, program, or transaction that manages and controls access to shared resources such as memory buffers and data sets. MQSeries, CICS, and IMS are resource managers.

**responder.** In distributed queuing, a program that replies to network connection requests from another system.

**resynch.** In MQSeries, an option to direct a channel to start up and resolve any in-doubt status messages, but without restarting message transfer.

**return codes.** The collective name for completion codes and reason codes.

**rollback.** Synonym for *back out*.

**RTM.** Recovery termination manager.

**rules table.** A control file containing one or more rules that the dead-letter queue handler applies to messages on the DLQ.

## S

**SAF.** System Authorization Facility.

**SDWA.** System diagnostic work area.

**security enabling interface (SEI).** The MQSeries interface to which customer- or vendor-written programs that check authorization, supply a user identifier, or perform authentication must conform. A part of the MQSeries Framework.

**SEI.** Security enabling interface.

**sender channel.** In message queuing, a channel that initiates transfers, removes messages from a transmission queue, and moves them over a communication link to a receiver or requester channel.

**sequential delivery.** In MQSeries, a method of transmitting messages with a sequence number so that the receiving channel can reestablish the message sequence when storing the messages. This is required where messages must be delivered only once, and in the correct order.

**sequential number wrap value.** In MQSeries, a method of ensuring that both ends of a communication link reset their current message sequence numbers at the same time. Transmitting messages with a sequence number ensures that the receiving channel can reestablish the message sequence when storing the messages.

**server.** (1) In MQSeries, a queue manager that provides queue services to client applications running on a remote workstation. (2) The program that responds to requests for information in the particular two-program, information-flow model of client/server. See also *client*.

**server channel.** In message queuing, a channel that responds to a requester channel, removes messages from a transmission queue, and moves them over a communication link to the requester channel.

**server connection channel type.** The type of MQI channel definition associated with the server that runs a queue manager. See also *client connection channel type*.

**service interval.** A time interval, against which the elapsed time between a put or a get and a subsequent get is compared by the queue manager in deciding whether the conditions for a service interval event have been met. The service interval for a queue is specified by a queue attribute.

**service interval event.** An event related to the service interval.

**session ID.** In MQSeries for OS/390, the CICS-unique identifier that defines the communication link to be used by a message channel agent when moving messages from a transmission queue to a link.

**shutdown.** See *immediate shutdown*, *preemptive shutdown*, and *quiesced shutdown*.

**signaling.** In MQSeries for OS/390 and MQSeries for Windows 2.1, a feature that allows the operating system to notify a program when an expected message arrives on a queue.

**single logging.** A method of recording MQSeries for OS/390 activity where each change is recorded on one data set only. Contrast with *dual logging*.

**single-phase backout.** A method in which an action in progress must not be allowed to finish, and all changes that are part of that action must be undone.

**single-phase commit.** A method in which a program can commit updates to a queue without coordinating those updates with updates the program has made to resources controlled by another resource manager. Contrast with *two-phase commit*.

**SIT.** System initialization table.

**stanza.** A group of lines in a configuration file that assigns a value to a parameter modifying the behavior of a queue manager, client, or channel. In MQSeries on UNIX systems, MQSeries for OS/2 Warp, and MQSeries for Windows NT, a configuration (.ini) file may contain a number of stanzas.

**storage class.** In MQSeries for OS/390, a storage class defines the page set that is to hold the messages for a particular queue. The storage class is specified when the queue is defined.

**store and forward.** The temporary storing of packets, messages, or frames in a data network before they are retransmitted toward their destination.

**subsystem.** In OS/390, a group of modules that provides function that is dependent on OS/390. For example, MQSeries for OS/390 is an OS/390 subsystem.

**supervisor call (SVC).** An OS/390 instruction that interrupts a running program and passes control to the supervisor so that it can perform the specific service indicated by the instruction.

**SVC.** Supervisor call.

**switch profile.** In MQSeries for OS/390, a RACF profile used when MQSeries starts up or when a refresh security command is issued. Each switch profile that

MQSeries detects turns off checking for the specified resource.

**symptom string.** Diagnostic information displayed in a structured format designed for searching the IBM software support database.

**synchronous messaging.** A method of communication between programs in which programs place messages on message queues. With synchronous messaging, the sending program waits for a reply to its message before resuming its own processing. Contrast with *asynchronous messaging*.

**syncpoint.** An intermediate or end point during processing of a transaction at which the transaction's protected resources are consistent. At a syncpoint, changes to the resources can safely be committed, or they can be backed out to the previous syncpoint.

**System Authorization Facility (SAF).** An OS/390 facility through which MQSeries for OS/390 communicates with an external security manager such as RACF.

**system.command.input queue.** A local queue on which application programs can put MQSeries commands. The commands are retrieved from the queue by the command server, which validates them and passes them to the command processor to be run.

**system control commands.** Commands used to manipulate platform-specific entities such as buffer pools, storage classes, and page sets.

**system diagnostic work area (SDWA).** Data recorded in a SYS1.LOGREC entry, which describes a program or hardware error.

**system initialization table (SIT).** A table containing parameters used by CICS on start up.

**SYS1.LOGREC.** A service aid containing information about program and hardware errors.

## T

**target library high-level qualifier (thlqual).** High-level qualifier for OS/390 target data set names.

**task control block (TCB).** An OS/390 control block used to communicate information about tasks within an address space that are connected to an OS/390 subsystem such as MQSeries for OS/390 or CICS.

**task switching.** The overlapping of I/O operations and processing between several tasks. In MQSeries for OS/390, the task switcher optimizes performance by allowing some MQI calls to be executed under subtasks rather than under the main CICS TCB.

**TCB.** Task control block.

**temporary dynamic queue.** A dynamic queue that is deleted when it is closed. Temporary dynamic queues are not recovered if the queue manager fails, so they can contain nonpersistent messages only. Contrast with *permanent dynamic queue*.

**termination notification.** A pending event that is activated when a CICS subsystem successfully connects to MQSeries for OS/390.

**thlqual.** Target library high-level qualifier.

**thread.** In MQSeries, the lowest level of parallel execution available on an operating system platform.

**time-independent messaging.** See *asynchronous messaging*.

**TMI.** Trigger monitor interface.

**trace.** In MQSeries, a facility for recording MQSeries activity. The destinations for trace entries can include GTF and the system management facility (SMF). See also *global trace* and *performance trace*.

**tranid.** See *transaction identifier*.

**transaction identifier.** In CICS, a name that is specified when the transaction is defined, and that is used to invoke the transaction.

**transmission program.** See *message channel agent*.

**transmission queue.** A local queue on which prepared messages destined for a remote queue manager are temporarily stored.

**trigger event.** An event (such as a message arriving on a queue) that causes a queue manager to create a trigger message on an initiation queue.

**triggering.** In MQSeries, a facility allowing a queue manager to start an application automatically when predetermined conditions on a queue are satisfied.

**trigger message.** A message containing information about the program that a trigger monitor is to start.

**trigger monitor.** A continuously-running application serving one or more initiation queues. When a trigger message arrives on an initiation queue, the trigger monitor retrieves the message. It uses the information in the trigger message to start a process that serves the queue on which a trigger event occurred.

**trigger monitor interface (TMI).** The MQSeries interface to which customer- or vendor-written trigger

## two-phase commit • XCF

monitor programs must conform. A part of the MQSeries Framework.

**two-phase commit.** A protocol for the coordination of changes to recoverable resources when more than one resource manager is used by a single transaction. Contrast with *single-phase commit*.

## U

**UIS.** User identifier service.

**undelivered-message queue.** See *dead-letter queue*.

**undo/redo record.** A log record used in recovery. The redo part of the record describes a change to be made to an MQSeries object. The undo part describes how to back out the change if the work is not committed.

**unit of recovery.** A recoverable sequence of operations within a single resource manager. Contrast with *unit of work*.

**unit of work.** A recoverable sequence of operations performed by an application between two points of consistency. A unit of work begins when a transaction starts or after a user-requested syncpoint. It ends either at a user-requested syncpoint or at the end of a transaction. Contrast with *unit of recovery*.

**user identifier service (UIS).** In MQSeries for OS/2 Warp, the facility that allows MQI applications to associate a user ID, other than the default user ID, with MQSeries messages.

**utility.** In MQSeries, a supplied set of programs that provide the system operator or system administrator with facilities in addition to those provided by the MQSeries commands. Some utilities invoke more than one function.

## X

**XCF.** Cross Systems Coupling Facility.

# Index

## A

Action parameter, Reset Cluster command 369  
 algorithms for queue service interval events 21  
 Alias Base Queue Type Error 43  
 AlterationDate parameter  
   Inquire Channel (Response) command 294  
   Inquire Cluster Queue Manager (Response) command 318  
   Inquire Namelist (Response) command 323  
   Inquire Process (Response) command 329  
   Inquire Queue (Response) command 346  
   Inquire Queue Manager (Response) command 357  
 AlterationTime parameter  
   Inquire Channel (Response) command 294  
   Inquire Cluster Queue Manager (Response) command 318  
   Inquire Namelist (Response) command 323  
   Inquire Process (Response) command 329  
   Inquire Queue (Response) command 346  
   Inquire Queue Manager (Response) command 357  
 ApplId parameter  
   Change Process command 167  
   Copy Process command 217  
   Create Process command 256  
   Inquire Process (Response) command 329  
 ApplType parameter  
   Change Process command 165  
   Copy Process command 216  
   Create Process command 254  
   Inquire Process (Response) command 328  
 AS/400 Control Language 128  
 authority checking (PCF)  
   Digital OpenVMS 137  
   OS/2 137  
   OS/400 135  
   Tandem NSK 137  
   UNIX systems 137  
   Windows NT 137  
 authority events 12  
 Authority parameter  
   MQZ\_CHECK\_AUTHORITY call 461  
   MQZ\_CHECK\_AUTHORITY\_2 call 467  
   MQZ\_GET\_AUTHORITY call 479  
   MQZ\_GET\_AUTHORITY\_2 call 483  
   MQZ\_GET\_EXPLICIT\_AUTHORITY call 487  
   MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 491  
   MQZ\_SET\_AUTHORITY call 498  
   MQZ\_SET\_AUTHORITY\_2 call 502  
 AuthorityEvent parameter  
   Change Queue Manager command 184  
   Inquire Queue Manager (Response) command 355

AuthorityMask parameter  
   MQZ\_GET\_EXPLICIT\_AUTHORITY call 487  
   MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 491  
 authorization service  
   component 433  
   defining to Digital OpenVMS 434  
   defining to MQSeries for OS/2 434  
   defining to MQSeries for UNIX systems 434  
   defining to MQSeries for Windows NT 434  
   defining to Tandem NSK 434  
   stanza, Digital OpenVMS 437  
   stanza, OS/2 Warp 436  
   stanza, Tandem NSK 438  
   stanza, UNIX systems 434  
   stanza, Windows NT 436  
   user interface 438  
 auto-definition of channels 51, 53

## B

BackoutRequeueName parameter  
   Change Queue command 173  
   Copy Queue command 223  
   Create Queue command 262  
   Inquire Queue (Response) command 341  
 BackoutThreshold parameter  
   Change Queue command 173  
   Copy Queue command 222  
   Create Queue command 261  
   Inquire Queue (Response) command 341  
 BaseQName parameter  
   Change Queue command 172  
   Copy Queue command 221  
   Create Queue command 260  
   Inquire Queue (Response) command 344  
 Batches parameter, Inquire Channel Status (Response) command 308  
 BatchInterval parameter  
   Change Channel command 158  
   Copy Channel command 207  
   Create Channel command 247  
   Inquire Channel (Response) command 294  
   Inquire Cluster Queue Manager (Response) command 318  
 BatchSize parameter  
   Change Channel command 152  
   Copy Channel command 196  
   Create Channel command 236  
   Inquire Channel (Response) command 290  
   Inquire Channel Status (Response) command 309  
   Inquire Cluster Queue Manager (Response) command 315

## Index

bibliography x  
BookManager xiv  
Bridge Started 45  
Bridge Stopped 47  
BuffersReceived parameter, Inquire Channel Status (Response) command 308  
BuffersSent parameter, Inquire Channel Status (Response) command 308  
BytesReceived parameter, Inquire Channel Status (Response) command 308  
BytesSent parameter, Inquire Channel Status (Response) command 308

## C

cell, DCE and queues 444  
Change Channel 144  
Change Namelist 163  
Change Process 165  
Change Queue 169  
Change Queue Manager 183  
Channel Activated 49  
Channel Auto-definition Error 51  
Channel Auto-definition OK 53  
Channel Conversion Error 55  
channel event  
  enabling 15  
  queue 6, 14  
Channel Not Activated 58  
Channel parameter, Inquire Cluster Queue Manager command 310  
Channel Started 60  
Channel Stopped 62  
Channel Stopped By User 66  
ChannelAttrs parameter, Inquire Channel command 281  
ChannelAutoDef parameter  
  Change Queue Manager command 186  
  Inquire Queue Manager (Response) command 356  
ChannelAutoDefEvent parameter  
  Change Queue Manager command 186  
  Inquire Queue Manager (Response) command 356  
ChannelAutoDefExit parameter  
  Change Queue Manager command 187  
  Inquire Queue Manager (Response) command 357  
ChannelDesc parameter  
  Change Channel command 146  
  Copy Channel command 196  
  Create Channel command 236  
  Inquire Channel (Response) command 290  
  Inquire Cluster Queue Manager (Response) command 315  
ChannelInstanceAttrs parameter, Inquire Channel Status command 301  
ChannelInstanceType parameter  
  Inquire Channel Status (Response) command 305

ChannelInstanceType parameter (*continued*)  
  Inquire Channel Status command 300  
ChannelName parameter  
  Change Channel command 145  
  Create Channel command 234  
  Delete Channel command 272  
  Inquire Channel (Response) command 289  
  Inquire Channel command 280  
  Inquire Channel Names command 295  
  Inquire Channel Status (Response) command 305  
  Inquire Channel Status command 300  
  Inquire Cluster Queue Manager (Response) command 314  
  Ping Channel command 362  
  Reset Channel command 367  
  Resolve Channel command 374  
  Start Channel command 378  
  Stop Channel command 383  
ChannelNames parameter, Inquire Channel Names (Response) command 297  
ChannelStartDate parameter, Inquire Channel Status (Response) command 308  
ChannelStartTime parameter, Inquire Channel Status (Response) command 308  
ChannelStatus parameter  
  Inquire Channel Status (Response) command 306  
  Inquire Cluster Queue Manager (Response) command 319  
ChannelTable parameter, Delete Channel command 272  
ChannelType parameter  
  Change Channel command 145  
  Copy Channel command 194  
  Create Channel command 234  
  Inquire Channel (Response) command 289  
  Inquire Channel command 280  
  Inquire Channel Names command 295  
  Inquire Channel Status (Response) command 306  
Clear Queue 191  
ClusterDate parameter  
  Inquire Cluster Queue Manager (Response) command 319  
  Inquire Queue (Response) command 346  
ClusterInfo parameter  
  Inquire Cluster Queue Manager (Response) command 319  
  Inquire Queue command 333  
ClusterName parameter  
  Change Channel command 158  
  Change Queue command 180  
  Copy Channel command 208  
  Copy Queue command 230  
  Create Channel command 247  
  Create Queue command 269  
  Inquire Channel (Response) command 294  
  Inquire Cluster Queue Manager (Response) command 318

- ClusterName parameter (*continued*)
  - Inquire Cluster Queue Manager command 310
  - Inquire Queue (Response) command 346
  - Inquire queue command 333
  - Refresh Cluster command 366
  - Reset Cluster command 369
  - Resume Queue Manager Cluster command 376
  - Suspend Queue Manager Cluster command 385
- ClusterNameList parameter
  - Change Channel command 158
  - Change Queue command 180
  - Copy Channel command 208
  - Copy Queue command 230
  - Create Channel command 248
  - Create Queue command 269
  - Inquire Channel (Response) command 294
  - Inquire Queue (Response) command 346
  - Inquire Queue command 333
  - Resume Queue Manager Cluster command 376
  - Suspend Queue Manager Cluster command 385
- ClusterQMGrAttrs parameter, Inquire Cluster Queue Manager command 311
- ClusterQMGrName parameter
  - Inquire Cluster Queue Manager command 310
- ClusterQType parameter, Inquire Queue (Response) command 347
- ClusterTime parameter
  - Inquire Cluster Queue Manager (Response) command 319
  - Inquire Queue (Response) command 346
- ClusterWorkloadData parameter
  - Change Queue Manager command 187
  - Inquire Queue Manager (Response) command 357
- ClusterWorkloadExit parameter
  - Change Queue Manager command 187
  - Inquire Queue Manager (Response) command 357
- ClusterWorkloadLength parameter
  - Change Queue Manager command 188
  - Inquire Queue Manager (Response) command 358
- CodedCharSetId field
  - MQCFSL structure 404
  - MQCFST structure 398
- CodedCharSetId parameter, Inquire Queue Manager (Response) command 354
- command
  - queue 131
  - structures 387
- Command field, MQCFH structure 389
- CommandInputQName parameter, Inquire Queue Manager (Response) command 353
- CommandLevel parameter, Inquire Queue Manager (Response) command 352
- commands
  - constants 555
- CompCode field, MQCFH structure 392
- CompCode parameter
  - MQZ\_CHECK\_AUTHORITY call 463
  - MQZ\_CHECK\_AUTHORITY\_2 call 469
  - MQZ\_COPY\_ALL\_AUTHORITY call 473
  - MQZ\_DELETE\_AUTHORITY call 476
  - MQZ\_DELETE\_NAME call 508
  - MQZ\_FIND\_USERID call 524
  - MQZ\_GET\_AUTHORITY call 479
  - MQZ\_GET\_AUTHORITY\_2 call 483
  - MQZ\_GET\_EXPLICIT\_AUTHORITY call 487
  - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 491
  - MQZ\_INIT\_AUTHORITY call 495
  - MQZ\_INIT\_NAME call 512
  - MQZ\_INIT\_USERID call 527
  - MQZ\_INSERT\_NAME call 515
  - MQZ\_LOOKUP\_NAME call 518
  - MQZ\_SET\_AUTHORITY call 498
  - MQZ\_SET\_AUTHORITY\_2 call 502
  - MQZ\_TERM\_AUTHORITY call 506
  - MQZ\_TERM\_NAME call 520
  - MQZ\_TERM\_USERID call 529
  - MQZEP call 455
- completion codes 535
- ComponentData parameter
  - MQZ\_CHECK\_AUTHORITY call 463
  - MQZ\_CHECK\_AUTHORITY\_2 call 469
  - MQZ\_COPY\_ALL\_AUTHORITY call 472
  - MQZ\_DELETE\_AUTHORITY call 475
  - MQZ\_DELETE\_NAME call 508
  - MQZ\_FIND\_USERID call 523
  - MQZ\_GET\_AUTHORITY call 479
  - MQZ\_GET\_AUTHORITY\_2 call 483
  - MQZ\_GET\_EXPLICIT\_AUTHORITY call 487
  - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 491
  - MQZ\_INIT\_AUTHORITY call 494
  - MQZ\_INIT\_NAME call 511
  - MQZ\_INIT\_USERID call 526
  - MQZ\_INSERT\_NAME call 514
  - MQZ\_LOOKUP\_NAME call 517
  - MQZ\_SET\_AUTHORITY call 498
  - MQZ\_SET\_AUTHORITY\_2 call 502
  - MQZ\_TERM\_AUTHORITY call 505
  - MQZ\_TERM\_NAME call 520
  - MQZ\_TERM\_USERID call 529
- ComponentDataLength parameter
  - MQZ\_INIT\_AUTHORITY call 494
  - MQZ\_INIT\_NAME call 511
  - MQZ\_INIT\_USERID call 526
- components, installable services 423
- conditions giving events 5
- configuration file
  - authorization service 434
  - name service 445
  - user identifier service 447
- ConnectionName parameter
  - Change Channel command 151

## Index

ConnectionName parameter (*continued*)  
  Copy Channel command 201  
  Create Channel command 241  
  Inquire Channel (Response) command 290  
  Inquire Channel Status (Response) command 305  
  Inquire Channel Status command 300  
  Inquire Cluster Queue Manager (Response)  
    command 315  
constants 555  
constants, values of 555—570  
Continuation parameter  
  MQZ\_CHECK\_AUTHORITY call 463  
  MQZ\_CHECK\_AUTHORITY\_2 call 469  
  MQZ\_COPY\_ALL\_AUTHORITY call 473  
  MQZ\_DELETE\_AUTHORITY call 476  
  MQZ\_DELETE\_NAME call 508  
  MQZ\_FIND\_USERID call 524  
  MQZ\_GET\_AUTHORITY call 479  
  MQZ\_GET\_AUTHORITY\_2 call 483  
  MQZ\_GET\_EXPLICIT\_AUTHORITY call 487  
  MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 491  
  MQZ\_INSERT\_NAME call 514  
  MQZ\_LOOKUP\_NAME call 518  
  MQZ\_SET\_AUTHORITY call 498  
  MQZ\_SET\_AUTHORITY\_2 call 502  
control attribute for queue service interval events 21  
Control field, MQCFH structure 392  
control Language, AS/400 128  
Copy Channel 193  
COPY files 571  
Copy Namelist 212  
Copy Process 215  
Copy Queue 219  
Count field  
  MQCFIL structure 401  
  MQCFSL structure 404  
Create Channel 233  
Create Namelist 252  
Create Process 254  
Create Queue 258  
creating service components 429  
CreationDate parameter, Inquire Queue (Response)  
  command 343  
CreationTime parameter, Inquire Queue (Response)  
  command 343  
CurrentLUWID parameter, Inquire Channel Status  
  (Response) command 308  
CurrentMsgs parameter, Inquire Channel Status  
  (Response) command 307  
CurrentQDepth parameter, Inquire Queue (Response)  
  command 343  
CurrentSequenceNumber parameter, Inquire Channel  
  Status (Response) command 307

## D

data  
  conversions 9  
  event 39  
  header 39  
  response 134  
data types, detailed description  
  elementary  
    MQHCONFIG 457  
    PMQFUNC 457  
  structure  
    MQCFH 41, 388  
    MQMD 40  
    MQZED 458  
DataConversion parameter  
  Change Channel command 153  
  Copy Channel command 203  
  Create Channel command 243  
  Inquire Channel (Response) command 291  
  Inquire Cluster Queue Manager (Response)  
    command 315  
DataCount parameter, Ping Channel command 362  
DCE  
  cell 444  
  name service 424  
  sharing queues 444  
DeadLetterQName parameter  
  Change Queue Manager command 184  
  Inquire Queue Manager (Response) command 353  
default structures 387  
Default Transmission Queue Type Error 68  
Default Transmission Queue Usage Error 70  
DefBind parameter  
  Inquire Queue (Response) command 347  
DefBind parameter,  
  Change Queue command 180  
  Copy Queue command 230  
  Create Queue command 269  
definitions of PCFs 139  
DefinitionType parameter  
  Change Queue command 177  
  Copy Queue command 227  
  Create Queue command 266  
  Inquire Queue (Response) command 342  
DefInputOpenOption parameter  
  Change Queue command 173  
  Copy Queue command 223  
  Create Queue command 262  
  Inquire Queue (Response) command 342  
DefPersistence parameter  
  Change Queue command 171  
  Copy Queue command 221  
  Create Queue command 260  
  Inquire Queue (Response) command 341

- DefPriority parameter
    - Change Queue command 171
    - Copy Queue command 221
    - Create Queue command 260
    - Inquire Queue (Response) command 341
  - DefXmitQName parameter
    - Change Queue Manager command 184
    - Inquire Queue Manager (Response) command 354
  - Delete Channel 272
  - Delete Namelist 274
  - Delete Process 275
  - Delete Queue 276
  - descriptor, message 131
  - disabling
    - events other than queue manager 7
    - queue manager events 11
  - DisclInterval parameter
    - Change Channel command 152
    - Copy Channel command 202
    - Create Channel command 242
    - Inquire Channel (Response) command 290
    - Inquire Cluster Queue Manager (Response) command 315
  - DistLists parameter
    - Change Queue command 174
    - Copy Queue command 224
    - Create Queue command 263
    - Inquire Queue (Response) command 343
    - Inquire Queue Manager (Response) command 354
  - distributed monitoring 9
  - dynamic binding 427
- E**
- enabling
    - events other than queue manager 7
    - Queue Depth High events 29
    - Queue Depth Low events 29
    - Queue Full events 30
    - queue manager events 11, 14
    - queue service interval events 21
  - enquire local queue attributes 409
  - EntityData parameter
    - MQZ\_CHECK\_AUTHORITY\_2 call 466
    - MQZ\_GET\_AUTHORITY\_2 call 482
    - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 490
    - MQZ\_SET\_AUTHORITY\_2 call 501
  - EntityDomainPtr field, MQZED structure 459
  - EntityName parameter
    - MQZ\_CHECK\_AUTHORITY call 460
    - MQZ\_GET\_AUTHORITY call 478
    - MQZ\_GET\_EXPLICIT\_AUTHORITY call 486
    - MQZ\_SET\_AUTHORITY call 497
  - EntityNamePtr field, MQZED structure 458
  - EntityType parameter
    - MQZ\_CHECK\_AUTHORITY call 460
  - EntityType parameter (*continued*)
    - MQZ\_CHECK\_AUTHORITY\_2 call 466
    - MQZ\_GET\_AUTHORITY call 478
    - MQZ\_GET\_AUTHORITY\_2 call 482
    - MQZ\_GET\_EXPLICIT\_AUTHORITY call 486
    - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 490
    - MQZ\_SET\_AUTHORITY call 497
    - MQZ\_SET\_AUTHORITY\_2 call 501
  - entry points, user identifier service 447
  - EntryPoint parameter, MQZEP call 455
  - EnvData parameter
    - Change Process command 167
    - Create Process command 256
    - Inquire Process (Response) command 329
  - error
    - codes 535
    - on channels 8
    - on event queues 8
    - response 134
  - Escape 278
  - Escape (Response) 279
  - EscapeText parameter
    - Escape (Response) command 279
    - Escape command 278
  - EscapeType parameter
    - Escape (Response) command 279
    - Escape command 278
  - event
    - attribute setting 8
    - authority 12
    - channel 6, 14
    - considerations when using 8
    - data 18, 39
    - enabling and disabling 7
    - enabling queue manager 11
    - header reason codes 40
    - inhibit 12
    - local 13
    - message 18
    - message data 37
    - messages
      - event queues 6
      - format 9
      - formats 38
      - lost 7
      - unit of work 8
    - overview of 4
    - platforms supported 3
    - queue depth
      - Queue Depth High 28
      - Queue Depth Low 28
      - Queue Full 28
    - queue manager 11
    - queues
      - errors 8
      - names for 6
      - transmission 8

## Index

event (*continued*)  
  queues (*continued*)  
    trigger messages 8  
    triggered 7  
    unavailable 7  
    use of 6  
  remote 13  
  reporting 3  
  service interval 19  
  start and stop 13  
  statistics  
    example summary 24, 27  
    resetting 18  
  timer 20  
  trigger 6  
  types of 6  
  use for 3  
events, constants 555  
example  
  queue depth events 30  
  using PCFs 409

## F

Force parameter  
  Change Queue command 170  
  Change Queue Manager command 183  
Format field  
  message descriptor 133  
  MQCFH structure 388  
format of event messages 9, 38  
FromChannelName parameter, Copy Channel command 194  
FromNamelistName parameter, Copy Namelist command 212  
FromProcessName parameter, Copy Process command 215  
FromQName parameter, Copy Queue command 219  
Function parameter, MQZEP call 455

## G

Get Inhibited 72  
glossary 581  
groups for PCFs 141

## H

HardenGetBackout parameter  
  Change Queue command 173  
  Copy Queue command 223  
  Create Queue command 262  
  Inquire Queue (Response) command 342  
Hconfig parameter  
  MQZ\_INIT\_AUTHORITY call 494  
  MQZ\_INIT\_NAME call 511

Hconfig parameter (*continued*)  
  MQZ\_INIT\_USERID call 526  
  MQZ\_TERM\_AUTHORITY call 505  
  MQZ\_TERM\_NAME call 520  
  MQZ\_TERM\_USERID call 529  
  MQZEP call 455  
header  
  files 571  
  MQSeries events 41  
  MQSeries messages 39  
  MQSeries PCFs 41  
HeartbeatInterval parameter  
  Change Channel command 157  
  Copy Channel command 206  
  Create Channel command 246  
  Inquire Channel (Response) command 294  
  Inquire Channel Status (Response) command 309  
  Inquire Cluster Queue Manager (Response) command 318  
high (service interval) event 19  
HighQDepth parameter, Reset Queue Statistics (Response) command 373  
HTML (Hypertext Markup Language) xv  
Hypertext Markup Language (HTML) xv

## I

INCLUDE files 571  
InDoubt parameter, Resolve Channel command 374  
InDoubtStatus parameter, Inquire Channel Status (Response) command 307  
inhibit events 12  
InhibitEvent parameter  
  Change Queue Manager command 185  
  Inquire Queue Manager (Response) command 355  
InhibitGet parameter  
  Change Queue command 171  
  Copy Queue command 221  
  Create Queue command 260  
  Inquire Queue (Response) command 341  
InhibitPut parameter  
  Change Queue command 171  
  Copy Queue command 221  
  Create Queue command 260  
  Inquire Queue (Response) command 341  
initialization 426  
InitiationQName parameter  
  Change Queue command 169, 175  
  Copy Queue command 225  
  Create Queue command 264  
  Inquire Queue (Response) command 343  
  Start Channel Initiator command 380  
Inquire Channel 280  
Inquire Channel (Response) 289  
Inquire Channel Names 295

- Inquire Channel Names (Response) 297
- Inquire Channel Status 298
- Inquire Channel Status (Response) 305
- Inquire Cluster Queue Manager 310
- Inquire Cluster Queue Manager (Response) 314
- Inquire Namelist 321
- Inquire Namelist (Response) 323
- Inquire Namelist Names 324
- Inquire Namelist Names (Response) 325
- Inquire Process 326
- Inquire Process (Response) 328
- Inquire Process Names 330
- Inquire Process Names (Response) 331
- Inquire Queue 332
- Inquire Queue (Response) 340
- Inquire Queue Manager 348
- Inquire Queue Manager (Response) 351
- Inquire Queue Names 359
- Inquire Queue Names (Response) 361
- installable service
  - authorization service 433
  - component
    - MQZ\_CHECK\_AUTHORITY 460
    - MQZ\_CHECK\_AUTHORITY\_2 466
    - MQZ\_COPY\_ALL\_AUTHORITY 472
    - MQZ\_DELETE\_AUTHORITY 475
    - MQZ\_DELETE\_NAME 508
    - MQZ\_FIND\_USERID 523
    - MQZ\_GET\_AUTHORITY 478
    - MQZ\_GET\_AUTHORITY\_2 482
    - MQZ\_GET\_EXPLICIT\_AUTHORITY 486
    - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 490
    - MQZ\_INIT\_AUTHORITY 494
    - MQZ\_INIT\_NAME 511
    - MQZ\_INIT\_USERID 526
    - MQZ\_INSERT\_NAME 514
    - MQZ\_LOOKUP\_NAME 517
    - MQZ\_SET\_AUTHORITY 497
    - MQZ\_SET\_AUTHORITY\_2 501
    - MQZ\_TERM\_AUTHORITY 505
    - MQZ\_TERM\_NAME 520
    - MQZ\_TERM\_USERID 529
    - MQZEP 455
  - Component data 426
  - component entry-points 425
  - components 424
  - configuring services 427
  - example configuration file 445
  - functions 424
  - initialization 426
  - interface to 453
  - multiple components 430
  - name service 441
  - name service interface 442
  - return information 426
  - user identifier service 447

- installable services
  - constants 555

## L

- LastLUWID parameter, Inquire Channel Status (Response) command 307
- LastMsgDate parameter, Inquire Channel Status (Response) command 308
- LastMsgTime parameter, Inquire Channel Status (Response) command 308
- LastSequenceNumber parameter, Inquire Channel Status (Response) command 307
- limits, queue depth 31
- local events 13
- LocalEvent parameter
  - Change Queue Manager command 185
  - Inquire Queue Manager (Response) command 355
- LongRetriesLeft parameter, Inquire Channel Status (Response) command 308
- LongRetryCount parameter
  - Change Channel command 153
  - Copy Channel command 203
  - Create Channel command 243
  - Inquire Channel (Response) command 291
  - Inquire Cluster Queue Manager (Response) command 315
- LongRetryInterval parameter
  - Change Channel command 153
  - Copy Channel command 203
  - Create Channel command 243
  - Inquire Channel (Response) command 291
  - Inquire Cluster Queue Manager (Response) command 315

## M

- MaxHandles parameter
  - Change Queue Manager command 184
  - Inquire Queue Manager (Response) command 354
- maximum depth reached 28
- MaxMsgLength parameter
  - Change Channel command 148
  - Change Queue command 172
  - Change Queue Manager command 186
  - Copy Channel command 199
  - Copy Queue command 222
  - Create Channel command 239
  - Create Queue command 261
  - Inquire Channel (Response) command 292
  - Inquire Cluster Queue Manager (Response) command 316
  - Inquire Queue (Response) command 341
  - Inquire Queue Manager (Response) command 354
- MaxPriority parameter, Inquire Queue Manager (Response) command 353

## Index

- MaxQDepth parameter
    - Change Queue command 172
    - Copy Queue command 222
    - Create Queue command 261
    - Inquire Queue (Response) command 341
  - MaxUncommittedMsgs parameter
    - Change Queue Manager command 184
    - Inquire Queue Manager (Response) command 354
  - MCAJobName parameter, Inquire Channel Status (Response) command 309
  - MCAName parameter
    - Change Channel command 151
    - Copy Channel command 202
    - Create Channel command 242
    - Inquire Channel (Response) command 290
    - Inquire Cluster Queue Manager (Response) command 315
  - MCAStatus parameter, Inquire Channel Status (Response) command 309
  - MCAType parameter
    - Change Channel command 154
    - Copy Channel command 204
    - Create Channel command 244
    - Inquire Channel (Response) command 293
    - Inquire Cluster Queue Manager (Response) command 317
  - MCAUserIdentifier parameter
    - Change Channel command 155
    - Copy Channel command 204
    - Create Channel command 244
    - Inquire Channel (Response) command 293
    - Inquire Cluster Queue Manager (Response) command 317
  - message descriptor
    - events 39
    - PCF messages 131
    - response 135
  - ModeName parameter
    - Change Channel command 150
    - Copy Channel command 195
    - Create Channel command 235
    - Inquire Channel (Response) command 290
    - Inquire Cluster Queue Manager (Response) command 314
  - monitoring performance on Windows NT 9
  - monitoring queue managers 3
  - MQ\_\* values 555
  - MQAI (MQSeries Administration Interface) 130
  - MQCFH 41, 388
  - MQCFH\_DEFAULT 393
  - MQCFIL 400
  - MQCFIL\_DEFAULT 402
  - MQCFIN 395
  - MQCFIN\_DEFAULT 396
  - MQCFSL 403
  - MQCFSL\_DEFAULT 406
  - MQCFST 397
  - MQCFST\_DEFAULT 399
  - MQCFT\_\* values 389
  - MQCMDL\_\* values 352
  - MQHCONFIG 457
  - MQMD message descriptor 40
  - MQRCCF\_\* values 536
  - MQSeries
    - Commands (MQSC) 128
    - name service interface (NSI) 441
    - security enabling interface (SEI) 433
  - MQSeries Administration Interface (MQAI) 130
  - MQSeries publications x
  - MQZ\_CHECK\_AUTHORITY 460
  - MQZ\_CHECK\_AUTHORITY\_2 466
  - MQZ\_COPY\_ALL\_AUTHORITY 472
  - MQZ\_DELETE\_AUTHORITY 475
  - MQZ\_DELETE\_NAME 508
  - MQZ\_FIND\_USERID 523
  - MQZ\_GET\_AUTHORITY 478
  - MQZ\_GET\_AUTHORITY\_2 482
  - MQZ\_GET\_EXPLICIT\_AUTHORITY 486
  - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 490
  - MQZ\_INIT\_AUTHORITY 494
  - MQZ\_INIT\_NAME 511
  - MQZ\_INIT\_USERID 526
  - MQZ\_INSERT\_NAME 514
  - MQZ\_LOOKUP\_NAME 517
  - MQZ\_SET\_AUTHORITY 497
  - MQZ\_SET\_AUTHORITY\_2 501
  - MQZ\_TERM\_AUTHORITY 505
  - MQZ\_TERM\_NAME 520
  - MQZ\_TERM\_USERID 529
- MQZED 458
  - MQZED\_\* values 458
  - MQZEP 455
- MsgDeliverySequence parameter
  - Change Queue command 174
  - Copy Queue command 224
  - Create Queue command 263
  - Inquire Queue (Response) command 342
- MsgDeqCount parameter, Reset Queue Statistics (Response) command 373
- MsgEnqCount parameter, Reset Queue Statistics (Response) command 373
- MsgExit parameter
  - Change Channel command 147
  - Copy Channel command 197
  - Create Channel command 237
  - Inquire Channel (Response) command 291
  - Inquire Cluster Queue Manager (Response) command 316
- MsgRetryCount parameter
  - Change Channel command 156
  - Copy Channel command 206

- MsgRetryCount parameter (*continued*)
    - Create Channel command 246
    - Inquire Channel (Response) command 294
    - Inquire Cluster Queue Manager (Response) command 318
  - MsgRetryExit parameter
    - Change Channel command 156
    - Copy Channel command 205
    - Inquire Channel (Response) command 293
    - Inquire Cluster Queue Manager (Response) command 318
  - MsgRetryInterval parameter
    - Change Channel command 156
    - Copy Channel command 206
    - Create Channel command 246
    - Inquire Channel (Response) command 294
    - Inquire Cluster Queue Manager (Response) command 318
  - MsgRetryUserData parameter
    - Change Channel command 156
    - Copy Channel command 206
    - Create Channel command 245
    - Inquire Channel (Response) command 294
    - Inquire Cluster Queue Manager (Response) command 318
  - Msgs parameter, Inquire Channel Status (Response) command 308
  - MsgSeqNumber field, MQCFH structure 392
  - MsgSeqNumber parameter, Reset Channel command 367
  - MsgUserData parameter
    - Change Channel command 149
    - Copy Channel command 200
    - Create Channel command 240
    - Inquire Channel (Response) command 292
    - Inquire Cluster Queue Manager (Response) command 317
  - multiple service components 430
- N**
- name service
    - configuration 445
    - interface (NSI) 441
  - NamelistAttrs parameter, Inquire Namelist command 321
  - NamelistDesc parameter
    - Change Namelist command 163
    - Copy Namelist command 212
    - Create Namelist command 252
    - Inquire Namelist (Response) command 323
  - NamelistName parameter
    - Change Namelist command 163
    - Create Namelist command 252
    - Delete Namelist command 274
    - Inquire Namelist (Response) command 323
  - NamelistName parameter (*continued*)
    - Inquire Namelist command 321
    - Inquire Namelist Names command 324
  - NamelistNames parameter
    - Inquire Namelist Names (Response) command 325
  - Names parameter
    - Change Namelist command 163
    - Copy Namelist command 213
    - Create Namelist command 252
    - Inquire Namelist (Response) command 323
  - names, of event queues 6
  - NetworkPriority parameter
    - Change Channel command 159
    - Copy Channel command 208
    - Create Channel command 248
    - Inquire Channel (Response) command 294
  - NonPersistentMsgSpeed parameter
    - Change Channel command 157
    - Copy Channel command 207
    - Create Channel command 247
    - Inquire Channel (Response) command 294
    - Inquire Channel Status (Response) command 309
    - Inquire Cluster Queue Manager (Response) command 318
  - Not Authorized (type 1) 74
  - Not Authorized (type 2) 76
  - Not Authorized (type 3) 78
  - Not Authorized (type 4) 80
  - notification of events 6
  - NSI (MQSeries name service interface) 441
- O**
- object authority manager 433
  - ObjectName parameter
    - MQZ\_CHECK\_AUTHORITY call 460
    - MQZ\_CHECK\_AUTHORITY\_2 call 466
    - MQZ\_COPY\_ALL\_AUTHORITY call 472
    - MQZ\_DELETE\_AUTHORITY call 475
    - MQZ\_GET\_AUTHORITY call 478
    - MQZ\_GET\_AUTHORITY\_2 call 482
    - MQZ\_GET\_EXPLICIT\_AUTHORITY call 486
    - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 490
    - MQZ\_SET\_AUTHORITY call 497
    - MQZ\_SET\_AUTHORITY\_2 call 501
  - ObjectType parameter
    - MQZ\_CHECK\_AUTHORITY call 461
    - MQZ\_CHECK\_AUTHORITY\_2 call 466
    - MQZ\_COPY\_ALL\_AUTHORITY call 472
    - MQZ\_DELETE\_AUTHORITY call 475
    - MQZ\_GET\_AUTHORITY call 479
    - MQZ\_GET\_AUTHORITY\_2 call 483
    - MQZ\_GET\_EXPLICIT\_AUTHORITY call 487
    - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 491
    - MQZ\_SET\_AUTHORITY call 498
    - MQZ\_SET\_AUTHORITY\_2 call 502

## Index

OK (service interval) event 19  
OK events algorithm 22  
OK response 133  
OpenInputCount parameter, Inquire Queue (Response) command 343  
OpenOutputCount parameter, Inquire Queue (Response) command 343  
Options parameter  
  MQZ\_INIT\_AUTHORITY call 494  
  MQZ\_INIT\_NAME call 511  
  MQZ\_INIT\_USERID call 526  
  MQZ\_TERM\_AUTHORITY call 505  
  MQZ\_TERM\_NAME call 520  
  MQZ\_TERM\_USERID call 529  
OS/2 user identifier 447

## P

Parameter field  
  MQCFIL structure 401  
  MQCFIN structure 395  
  MQCFSL structure 404  
  MQCFST structure 398  
ParameterCount field, MQCFH structure 393  
Password parameter  
  Change Channel command 155  
  Copy Channel command 205  
  Create Channel command 245  
  Inquire Channel (Response) command 293  
  Inquire Cluster Queue Manager (Response) command 317  
  MQZ\_FIND\_USERID call 523  
PCF definitions  
  Change Channel 144  
  Change Namelist 163  
  Change Process 165  
  Change Queue 169  
  Change Queue Manager 183  
  Clear Queue 191  
  Copy Channel 193  
  Copy Namelist 212  
  Copy Process 215  
  Copy Queue 219  
  Create Channel 233  
  Create Namelist 252  
  Create Process 254  
  Create Queue 258  
  Delete Channel 272  
  Delete Namelist 274  
  Delete Process 275  
  Delete Queue 276  
  Escape 278  
  Escape (Response) 279  
  Inquire Channel 280  
  Inquire Channel Names 295  
  Inquire Channel Status 298

PCF definitions (*continued*)  
  Inquire Cluster Queue Manager 310  
  Inquire Namelist 321  
  Inquire Namelist Names 324  
  Inquire Process 326  
  Inquire Process Names 330  
  Inquire Queue 332  
  Inquire Queue Manager 348  
  Inquire Queue Names 359  
  Ping Channel 362  
  Ping Queue Manager 365  
  Refresh Cluster 366  
  Reset Channel 367  
  Reset Cluster 369  
  Reset Queue Statistics 371  
  Resolve Channel 374  
  Resume Queue Manager Cluster 376  
  Start Channel 378  
  Start Channel Initiator 380  
  Start Channel Listener 382  
  Stop Channel 383  
  Suspend Queue Manager Cluster 385  
PCFs, constants 555  
PDF (Portable Document Format) xv  
performance event queue 6  
performance events 17—35  
  control attribute 21  
  enabling 21  
  event data 18  
  event statistics 18  
  types of 17  
performance monitoring on Windows NT 9  
PerformanceEvent parameter  
  Change Queue Manager command 185  
  Inquire Queue Manager (Response) command 356  
Ping Channel 362  
Ping Queue Manager 365  
Platform parameter, Inquire Queue Manager (Response) command 351  
platforms for events 3  
PMQFUNC 457  
Portable Document Format (PDF) xv  
PostScript format xv  
primary initialization 426  
primary termination 427  
ProcessAttrs parameter, Inquire Process command 326  
ProcessDesc parameter  
  Change Process command 165  
  Copy Process command 215  
  Create Process command 254  
  Inquire Process (Response) command 328  
ProcessName parameter  
  Change Process command 165  
  Change Queue command 172  
  Copy Queue command 222

- ProcessName parameter (*continued*)
    - Create Process command 254
    - Create Queue command 261
    - Delete Process command 275
    - Inquire Process (Response) command 328
    - Inquire Process command 326
    - Inquire Process Names command 330
    - Inquire Queue (Response) command 341
  - ProcessNames parameter, Inquire Process Names (Response) command 331
  - Programmable Command Format (PCF)
    - authority checking
      - Digital OpenVMS 137
      - OS/2 137
      - OS/400 135
      - Tandem NSK 137
      - UNIX systems 137
      - Windows NT 137
    - commands in groups 141
    - example program 409
  - publications, MQSeries x
  - Purge parameter, Delete Queue command 276
  - Put Inhibited 82
  - PutAuthority parameter
    - Change Channel command 154
    - Copy Channel command 204
    - Create Channel command 243
    - Inquire Channel (Response) command 292
    - Inquire Cluster Queue Manager (Response) command 316
- Q**
- QAttr parameter, Inquire Queue command 333
  - QDepthHighEvent parameter
    - Change Queue command 178
    - Copy Queue command 228
    - Create Queue command 267
    - Inquire Queue (Response) command 345
  - QDepthHighLimit parameter
    - Change Queue command 178
    - Copy Queue command 227
    - Create Queue command 266
    - Inquire Queue (Response) command 345
  - QDepthLowEvent parameter
    - Change Queue command 179
    - Copy Queue command 229
    - Create Queue command 268
    - Inquire Queue (Response) command 345
  - QDepthLowLimit parameter
    - Change Queue command 178
    - Copy Queue command 228
    - Create Queue command 267
    - Inquire Queue (Response) command 345
  - QDepthMaxEvent parameter
    - Change Queue command 178
  - QDepthMaxEvent parameter (*continued*)
    - Copy Queue command 228
    - Create Queue command 267
    - Inquire Queue (Response) command 345
  - QDesc parameter
    - Change Queue command 171
    - Copy Queue command 221
    - Create Queue command 259
    - Inquire Queue (Response) command 340
  - QMGrAttrs parameter, Inquire Queue Manager command 348
  - QMGrDefinitionType parameter, Inquire Cluster Queue Manager (Response) command 318
  - QMGrDesc parameter
    - Change Queue Manager command 183
    - Inquire Queue Manager (Response) command 351
  - QMGrIdentifier parameter
    - Inquire Cluster Queue Manager (Response) command 319
    - Inquire Queue (Response) command 347
    - Inquire Queue Manager (Response) command 358
  - QMGrName parameter
    - Change Channel command 157
    - Copy Channel command 196
    - Create Channel command 236
    - Inquire Channel (Response) command 290
    - Inquire Cluster Queue Manager (Response) command 315
    - Inquire Queue (Response) command 347
    - Inquire Queue Manager (Response) command 351
    - MQZ\_CHECK\_AUTHORITY call 460
    - MQZ\_CHECK\_AUTHORITY\_2 call 466
    - MQZ\_COPY\_ALL\_AUTHORITY call 472
    - MQZ\_DELETE\_AUTHORITY call 475
    - MQZ\_DELETE\_NAME call 508
    - MQZ\_FIND\_USERID call 523
    - MQZ\_GET\_AUTHORITY call 478
    - MQZ\_GET\_AUTHORITY\_2 call 482
    - MQZ\_GET\_EXPLICIT\_AUTHORITY call 486
    - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 490
    - MQZ\_INIT\_AUTHORITY call 494
    - MQZ\_INIT\_NAME call 511
    - MQZ\_INIT\_USERID call 526
    - MQZ\_INSERT\_NAME call 514
    - MQZ\_LOOKUP\_NAME call 517
    - MQZ\_SET\_AUTHORITY call 497
    - MQZ\_SET\_AUTHORITY\_2 call 501
    - MQZ\_TERM\_AUTHORITY call 505
    - MQZ\_TERM\_NAME call 520
    - MQZ\_TERM\_USERID call 529
    - Reset Cluster command 369
  - QMGrType parameter, Inquire Cluster Queue Manager (Response) command 319
  - QName parameter
    - Clear Queue command 191
    - Create Queue command 258

## Index

- QName parameter (*continued*)
    - Delete Queue command 276
    - Inquire Queue (Response) command 340
    - Inquire Queue command 332
    - Inquire Queue Names command 359
    - MQZ\_DELETE\_NAME call 508
    - MQZ\_INSERT\_NAME call 514
    - MQZ\_LOOKUP\_NAME call 517
    - Reset Queue Statistics (Response) command 373
    - Reset Queue Statistics command 371
  - QNames parameter, Inquire Queue Names (Response) command 361
  - QServiceInterval parameter
    - Change Queue command 179
    - Copy Queue command 229
    - Create Queue command 268
    - Inquire Queue (Response) command 346
  - QServiceIntervalEvent parameter
    - Change Queue command 179
    - Copy Queue command 229
    - Create Queue command 268
    - Inquire Queue (Response) command 346
  - QType parameter
    - Change Queue command 169
    - Copy Queue command 220
    - Create Queue command 258
    - Delete Queue command 276
    - Inquire Queue (Response) command 340
    - Inquire Queue command 332
    - Inquire Queue Names command 359
  - queue
    - channel events 14
    - command 131
    - depth events
      - enabling 29
      - examples 30
    - depth limits 31
    - SYSTEM.ADMIN.COMMAND.QUEUE 131
  - Queue Depth High 84
  - Queue Depth Low 86
  - Queue Full 88
  - queue manager
    - event queue 6
    - events
      - enabling 11, 14
      - start and stop 13
    - ini file
      - authorization service 434
      - name service 445
      - user identifier service 447
    - monitoring 3
  - Queue Manager Active 90
  - queue manager ini file 434
  - Queue Manager Not Active 91
  - queue service interval events
    - algorithm for 21
  - queue service interval events (*continued*)
    - enabling 21
    - examples 22
    - high 19
    - OK 19
  - Queue Service Interval High 92
  - Queue Service Interval OK 94
  - Queue Type Error 96
  - queues
    - shared configuration tasks 444
    - shared on different queue managers 444
  - Quiesce parameter
    - Stop Channel command 383
    - Suspend Queue Manager Cluster command 385
- ## R
- reason codes for command format
    - alphabetic list 535
    - numeric list 565
  - reason codes, characters
  - Reason field, MQCFH structure 392
  - Reason parameter
    - Change Channel command 159
    - Change Namelist command 163
    - Change Process command 167
    - Change Queue command 181
    - Change Queue Manager command 189
    - Clear Queue command 191
    - Copy Channel command 208
    - Copy Namelist command 213
    - Copy Process command 218
    - Copy Queue command 231
    - Create Channel command 248
    - Create Namelist command 253
    - Create Process command 256
    - Create Queue command 270
    - Delete Channel command 272
    - Delete Namelist command 274
    - Delete Process command 275
    - Delete Queue command 277
    - Escape command 278
    - Inquire Channel command 288
    - Inquire Channel Names command 296
    - Inquire Channel Status command 303
    - Inquire Cluster Queue Manager command 313
    - Inquire Namelist command 322
    - Inquire Namelist Names command 324
    - Inquire Process command 327
    - Inquire Process Names command 330
    - Inquire Queue command 339
    - Inquire Queue Manager command 350
    - Inquire Queue Names command 360
    - MQZ\_CHECK\_AUTHORITY call 463
    - MQZ\_CHECK\_AUTHORITY\_2 call 469
    - MQZ\_COPY\_ALL\_AUTHORITY call 473

- Reason parameter (*continued*)
  - MQZ\_DELETE\_AUTHORITY call 476
  - MQZ\_DELETE\_NAME call 509
  - MQZ\_FIND\_USERID call 524
  - MQZ\_GET\_AUTHORITY call 479
  - MQZ\_GET\_AUTHORITY\_2 call 483
  - MQZ\_GET\_EXPLICIT\_AUTHORITY call 488
  - MQZ\_GET\_EXPLICIT\_AUTHORITY\_2 call 492
  - MQZ\_INIT\_AUTHORITY call 495
  - MQZ\_INIT\_NAME call 512
  - MQZ\_INIT\_USERID call 527
  - MQZ\_INSERT\_NAME call 515
  - MQZ\_LOOKUP\_NAME call 518
  - MQZ\_SET\_AUTHORITY call 498
  - MQZ\_SET\_AUTHORITY\_2 call 503
  - MQZ\_TERM\_AUTHORITY call 506
  - MQZ\_TERM\_NAME call 521
  - MQZ\_TERM\_USERID call 530
  - MQZEP call 455
  - Ping Channel command 362
  - Ping Queue Manager command 365
  - Refresh Cluster command 366
  - Reset Channel command 368
  - Reset Cluster command 369
  - Reset Queue Statistics command 371
  - Resolve Channel command 375
  - Resume Queue Manager Cluster command 376
  - Start Channel command 378
  - Start Channel Initiator command 380
  - Start Channel Listener command 382
  - Stop Channel command 383
  - Suspend Queue Manager Cluster command 385
- ReceiveExit parameter
  - Change Channel command 148
  - Copy Channel command 199
  - Create Channel command 238
  - Inquire Channel (Response) command 292
  - Inquire Cluster Queue Manager (Response) command 316
- ReceiveUserData parameter
  - Change Channel command 150
  - Copy Channel command 201
  - Create Channel command 240
  - Inquire Channel (Response) command 293
  - Inquire Cluster Queue Manager (Response) command 317
- RefObjectName parameter,
  - MQZ\_COPY\_ALL\_AUTHORITY call 472
- Refresh Cluster 366
- remote events 13
- Remote Queue Name Error 98
- RemoteEvent parameter
  - Change Queue Manager command 185
  - Inquire Queue Manager (Response) command 355
- RemoteQMgrName parameter
  - Change Queue command 176
- RemoteQMgrName parameter (*continued*)
  - Copy Queue command 226
  - Create Queue command 265
  - Inquire Queue (Response) command 344
- RemoteQName parameter
  - Change Queue command 176
  - Copy Queue command 226
  - Create Queue command 265
  - Inquire Queue (Response) command 344
- Replace parameter
  - Copy Channel command 195
  - Copy Namelist command 212
  - Copy Process command 215
  - Copy Queue command 220
  - Create Channel command 234
  - Create Namelist command 252
  - Create Process command 254
  - Create Queue command 259
- reporting events 3
- RepositoryName parameter
  - Change Queue Manager command 188
  - Inquire Queue Manager (Response) command 358
- RepositoryNamelist parameter
  - Change Queue Manager command 188
  - Inquire Queue Manager (Response) command 358
- Reset Channel 367
- Reset Cluster 369
- Reset Queue Statistics 371
- Reset Queue Statistics (Response) 373
- reset service timer 20
- Resolve Channel 374
- ResolvedQMgrName parameter
  - MQZ\_INSERT\_NAME call 514
  - MQZ\_LOOKUP\_NAME call 517
- response
  - data 134
  - error 134
  - OK 133
  - structures 387
- Responses
  - Alias Base Queue Type Error 43
  - Bridge Started 45
  - Bridge Stopped 47
  - Channel Activated 49
  - Channel Auto-definition Error 51
  - Channel Auto-definition OK 53
  - Channel Conversion Error 55
  - Channel Not Activated 58
  - Channel Started 60
  - Channel Stopped 62, 66
  - constants 555
  - Default Transmission Queue Type Error 68
  - Default Transmission Queue Usage Error 70
  - Get Inhibited 72
  - Inquire Channel (Response) 289
  - Inquire Channel Names (Response) 297

## Index

### Responses (*continued*)

- Inquire Channel Status (Response) 305
- Inquire Cluster Queue Manager (Response) 314
- Inquire Namelist (Response) 323
- Inquire Namelist Names (Response) 325
- Inquire Process (Response) 328
- Inquire Process Names (Response) 331
- Inquire Queue (Response) 340
- Inquire Queue Manager (Response) 351
- Inquire Queue Names (Response) 361
- Not Authorized (type 1) 74
- Not Authorized (type 2) 76
- Not Authorized (type 3) 78
- Not Authorized (type 4) 80
- Put Inhibited 82
- Queue Depth High 84
- Queue Depth Low 86
- Queue Full 88
- Queue Manager Active 90
- Queue Manager Not Active 91
- Queue Service Interval High 92
- Queue Service Interval OK 94
- Queue Type Error 96
- Remote Queue Name Error 98
- Reset Queue Statistics (Response) 373
- Transmission Queue Type Error 100
- Transmission Queue Usage Error 102
- Unknown Alias Base Queue 104
- Unknown Default Transmission Queue 106
- Unknown Object Name 108
- Unknown Remote Queue Manager 110
- Unknown Transmission Queue 113
- Resume Queue Manager Cluster 376
- RetentionInterval parameter
  - Change Queue command 174
  - Copy Queue command 224
  - Create Queue command 263
  - Inquire Queue (Response) command 342
- return codes 535

## S

### Scope parameter

- Change Queue command 177
- Copy Queue command 227
- Create Queue command 266
- Inquire Queue (Response) command 345

secondary initialization 426

secondary termination 427

security enabling interface (SEI) 433

### SecurityExit parameter

- Change Channel command 146
- Copy Channel command 197
- Create Channel command 237
- Inquire Channel (Response) command 291
- Inquire Cluster Queue Manager (Response) command 316

SecurityId field, MQZED structure 459

### SecurityUserData parameter

- Change Channel command 149
- Copy Channel command 200
- Create Channel command 240
- Inquire Channel (Response) command 292
- Inquire Cluster Queue Manager (Response) command 316

SEI (MQSeries security enabling interface) 433

### SendExit parameter

- Change Channel command 147
- Copy Channel command 198
- Create Channel command 238
- Inquire Channel (Response) command 291
- Inquire Cluster Queue Manager (Response) command 316

### SendUserData parameter

- Change Channel command 149
- Copy Channel command 200
- Create Channel command 240
- Inquire Channel (Response) command 292
- Inquire Cluster Queue Manager (Response) command 317

### SeqNumberWrap parameter

- Change Channel command 154
- Copy Channel command 199
- Create Channel command 239
- Inquire Channel (Response) command 292
- Inquire Cluster Queue Manager (Response) command 316

### service component

- authorization 433
- creating your own 429
- multiple 430

service interval events 19

### service timer

- algorithm for 21
- resetting 20

### Shareability parameter

- Change Queue command 173
- Copy Queue command 223
- Create Queue command 262
- Inquire Queue (Response) command 342

sharing queues, configuration tasks 444

ShortRetriesLeft parameter, Inquire Channel Status (Response) command 309

### ShortRetryCount parameter

- Change Channel command 152
- Copy Channel command 202
- Create Channel command 242
- Inquire Channel (Response) command 291
- Inquire Cluster Queue Manager (Response) command 315

### ShortRetryInterval parameter

- Change Channel command 153
- Copy Channel command 202

- ShortRetryInterval parameter (*continued*)
    - Create Channel command 242
    - Inquire Channel (Response) command 291
    - Inquire Cluster Queue Manager (Response) command 315
  - softcopy books xiv
  - stanza
    - authorization service, Digital OpenVMS 437
    - authorization service, OS/2 Warp 436
    - authorization service, Tandem NSK 438
    - authorization service, UNIX systems 434
    - authorization service, Windows NT 436
    - user identifier service 447
  - start and stop events 13
  - Start Channel 378
  - Start Channel Initiator 380
  - Start Channel Listener 382
  - StartStopEvent parameter
    - Change Queue Manager command 185
    - Inquire Queue Manager (Response) command 356
  - statistics, events 18
  - Stop Channel 383
  - StopRequested parameter, Inquire Channel Status (Response) command 309
  - String field, MQCFST structure 398
  - StringLength field
    - MQCFSL structure 404
    - MQCFST structure 398
  - Strings field, MQCFSL structure 405
  - StrucId field, MQZED structure 458
  - StrucLength field
    - MQCFH structure 389
    - MQCFIL structure 401
    - MQCFIN structure 395
    - MQCFSL structure 404
    - MQCFST structure 397
  - structure of event messages 39
  - structures 387
    - MQCFH 388
    - MQCFIL 400
    - MQCFIN 395
    - MQCFSL 403
    - MQCFST 397
  - Suspend parameter, Inquire Cluster Queue Manager (Response) command 320
  - Suspend Queue Manager Cluster 385
  - SyncPoint parameter, Inquire Queue Manager (Response) command 354
  - SYSTEM.ADMIN.COMMAND.QUEUE 131
- T**
- termination 427
  - terminology used in this book 581
  - threading in Sun Solaris 429
  - thresholds for queue depth 31
  - time since reset 18
  - TimeSinceReset parameter, Reset Queue Statistics (Response) command 373
  - ToChannelName parameter, Copy Channel command 194
  - ToNamelistName parameter, Copy Namelist command 212
  - ToProcessName parameter, Copy Process command 215
  - ToQName parameter, Copy Queue command 219
  - TpName parameter
    - Change Channel command 150
    - Copy Channel command 196
    - Create Channel command 236
    - Inquire Channel (Response) command 290
    - Inquire Cluster Queue Manager (Response) command 315
  - Transmission Queue Type Error 100
  - Transmission Queue Usage Error 102
  - transmission queues, as event queues 8
  - TransportType parameter
    - Change Channel command 145
    - Copy Channel command 195
    - Create Channel command 235
    - Inquire Channel (Response) command 290
    - Inquire Cluster Queue Manager (Response) command 314
    - Start Channel Listener command 382
  - trigger events 6
  - trigger messages, from event queues 8
  - TriggerControl parameter
    - Change Queue command 175
    - Copy Queue command 225
    - Create Queue command 264
    - Inquire Queue (Response) command 343
  - TriggerData parameter
    - Change Queue command 176
    - Copy Queue command 226
    - Create Queue command 265
    - Inquire Queue (Response) command 344
  - TriggerDepth parameter
    - Change Queue command 176
    - Copy Queue command 226
    - Create Queue command 264
    - Inquire Queue (Response) command 344
  - triggered event queues 7
  - TriggerInterval parameter
    - Change Queue Manager command 183
    - Inquire Queue Manager (Response) command 353
  - TriggerMsgPriority parameter
    - Change Queue command 176
    - Copy Queue command 225
    - Create Queue command 264
    - Inquire Queue (Response) command 344

## Index

TriggerType parameter  
  Change Queue command 175  
  Copy Queue command 225  
  Create Queue command 264  
  Inquire Queue (Response) command 344

Type field  
  MQCFH structure 389  
  MQCFIL structure 401  
  MQCFIN structure 395  
  MQCFSL structure 403  
  MQCFST structure 397

types of event 6

## U

unit of work, and events 8  
Unknown Alias Base Queue 104  
Unknown Default Transmission Queue 106  
Unknown Object Name 108  
Unknown Remote Queue Manager 110  
Unknown Transmission Queue 113  
Usage parameter  
  Change Queue command 175  
  Copy Queue command 224  
  Create Queue command 263  
  Inquire Queue (Response) command 343  
user data 133  
user identifier service  
  defining to OS/2 447  
  stanza 447  
  user interface 448  
UserData parameter  
  Change Process command 167  
  Copy Process command 217  
  Create Process command 256  
  Inquire Process (Response) command 329  
Userid parameter, MQZ\_FIND\_USERID call 523  
UserIdentifier parameter  
  Change Channel command 155  
  Copy Channel command 205  
  Create Channel command 244  
  Inquire Channel (Response) command 293  
  Inquire Cluster Queue Manager (Response)  
    command 317  
using events 3

## V

Value field, MQCFIN structure 395  
Values field, MQCFIL structure 401  
Version field  
  MQCFH structure 389  
  MQZED structure 458  
Version parameter  
  MQZ\_INIT\_AUTHORITY call 495  
  MQZ\_INIT\_NAME call 512

Version parameter (*continued*)  
  MQZ\_INIT\_USERID call 526

## W

Windows Help xv  
Windows products vii

## X

XmitQName parameter  
  Change Channel command 151  
  Change Queue command 177  
  Copy Channel command 202  
  Copy Queue command 226  
  Create Channel command 241  
  Create Queue command 266  
  Inquire Channel (Response) command 290  
  Inquire Channel Status (Response) command 305  
  Inquire Channel Status command 300  
  Inquire Cluster Queue Manager (Response)  
    command 315  
  Inquire Queue (Response) command 344

---

## **Sending your comments to IBM**

**MQSeries®**

**Programmable System Management**

**SC33-1482-07**

If you especially like or dislike anything about this book, please use one of the methods listed below to send your comments to IBM.

Feel free to comment on what you regard as specific errors or omissions, and on the accuracy, organization, subject matter, or completeness of this book. Please limit your comments to the information in this book and the way in which the information is presented.

To request additional publications, or to ask questions or make comments about the functions of IBM products or systems, you should talk to your IBM representative or to your IBM authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate, without incurring any obligation to you.

You can send your comments to IBM in any of the following ways:

- By mail, use the Readers' Comment Form
- By fax:
  - From outside the U.K., after your international access code use 44 1962 870229
  - From within the U.K., use 01962 870229
- Electronically, use the appropriate network ID:
  - IBM Mail Exchange: GBIBM2Q9 at IBMMAIL
  - IBMLink: HURSLEY(IDRCF)
  - Internet: idrcf@hursley.ibm.com

Whichever you use, ensure that you include:

- The publication number and title
- The page number or topic to which your comment applies
- Your name and address/telephone number/fax number/network ID.



# Readers' Comments

MQSeries®

## Programmable System Management

### SC33-1482-07

Use this form to tell us what you think about this manual. If you have found errors in it, or if you want to express your opinion about it (such as organization, subject matter, appearance) or make suggestions for improvement, this is the form to use.

To request additional publications, or to ask questions or make comments about the functions of IBM products or systems, you should talk to your IBM representative or to your IBM authorized remarketer. This form is provided for comments about the information in this manual and the way it is presented.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you.

Be sure to print your name and address below if you would like a reply.

---

Name

---

Address

---

Company or Organization

---

Telephone

---

Email



**You can send your comments POST FREE on this form from any one of these countries:**

Australia	Finland	Iceland	Netherlands	Singapore	United States
Belgium	France	Israel	New Zealand	Spain	of America
Bermuda	Germany	Italy	Norway	Sweden	
Cyprus	Greece	Luxembourg	Portugal	Switzerland	
Denmark	Hong Kong	Monaco	Republic of Ireland	United Arab Emirates	

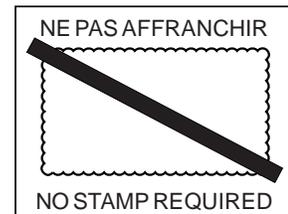
If your country is not listed here, your local IBM representative will be pleased to forward your comments to us. Or you can pay the postage and send the form direct to IBM (this includes mailing in the U.K.).

1 Cut along this line

2 Fold along this line

**By air mail**  
*Par avion*

IBRS/CCR NUMBER: PHQ - D/1348/SO



**REPONSE PAYEE**  
**GRANDE-BRETAGNE**

IBM United Kingdom Laboratories  
Information Development Department (MP095)  
Hursley Park,  
WINCHESTER, Hants  
SO21 2ZZ United Kingdom

3 Fold along this line

*From:* Name \_\_\_\_\_  
Company or Organization \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_

EMAIL \_\_\_\_\_  
Telephone \_\_\_\_\_

1 Cut along this line

4 Fasten here with adhesive tape



Printed in the United States of America  
on recycled paper containing 10%  
recovered post-consumer fiber.

SC33-1482-07

