

New IBM MQ 7.1, 7.5, 8.0, 9.0, 9.1, 9.2, 9.3 and 9.4 LTS attributes in DISPLAY QMGR for new or migrated queue managers

<https://www.ibm.com/support/pages/node/198031>

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+++ Question

Are there new attributes in DISPLAY QMGR added in IBM MQ 7.1, 7.5, 8.0, 9.0, 9.0.1, 9.1, 9.2, 9.3 and 9.4 LTS?

The discussion is centered on Long Term Support (LTS); that is, this document does not cover Continuous Delivery (CD).

+++ References

+ Documentation

<https://www.ibm.com/docs/en/ibm-mq/9.4?topic=reference-mqsc-commands>

IBM MQ / 9.4

MQSC commands reference

<https://www.ibm.com/docs/en/ibm-mq/9.4?topic=reference-display-qmgr-display-queue-manager-settings>

IBM MQ / 9.4

DISPLAY QMGR (display queue manager settings)

+ Related technotes

<https://www.ibm.com/support/pages/node/487355>

New objects and new attributes for objects in IBM MQ 7.1, 7.5, 8.0, 9.0, 9.1, 9.2, 9.3 and 9.4 LTS

<https://www.ibm.com/support/pages/node/213019>

New SYSTEM queues added in IBM MQ 7.1, 7.5, 8.0, 9.0, 9.1, 9.2, 9.3 and 9.4 LTS

+++ Answer:

+ SUMMARY

The following table shows the new attributes added to the DISPLAY QMGR, across the different version.releases starting with MQ 7.1.

	7.1	7.5	8.0	9.0	9.1	9.2	9.3	9.4
ACTVCONO (DISABLED)	7.1							
ACTVTRC (OFF)	7.1							
ADVCAP (ENABLED)					9.1			
AMQPCAP (YES)			8.0.0.4					
CERTLABL ('ibmwebspheremqgm_X')	8.0							
CERTVPOL (ANY)	7.1							
CHLAUTH ()	7.1							
CONNAUTH ('*.AUTHINFO.IDPWOS')	8.0							
CUSTOM ()	7.1							
DEFCLXQ (SCTQ)		7.5						
IMGINTVL (60)					9.1			
IMGLOGLN (OFF)					9.1			
IMGRCOVO (YES)					9.1			
IMGRCOVQ (YES)					9.1			
IMGSCHEM (MANUAL)					9.1			
INITKEY							9.3	
KEYRPWD							9.3	
PSCLUS (ENABLED)	7.1							
SPLCAP (DISABLED)		7.5						
SUITEB (NONE)	7.1							
VERSION ()	7.1							
XRCAP (NO)	7.1							

Note:

CHLAUTH () Added in 7.1: Feature is DISABLED for migrated Queue Mgr
But it is ENABLED for new Queue Managers

++ For MQ 9.4 LTS

No new attributes for DISPLAY QMGR were added in MQ 9.4 LTS.

++ For MQ 9.3 LTS

+ Attributes INITKEY and KEYRPWD (New in 9.3)

<https://www.ibm.com/docs/en/ibm-mq/9.3?topic=reference-alter-qmgr-alter-queue-manager-settings>

IBM MQ / 9.3

ALTER QMGR (alter queue manager settings)

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[MQ 9.3.0 Jun 2022][MQ 9.3.0 Jun 2022][UNIX, Linux, Windows, IBM i]

INITKEY

The initial key for the password protection system. IBM MQ encrypts the value of some queue manager attributes using the IBM MQ Password Protection system.

An initial key is used by the encryption algorithm to encrypt and decrypt these attributes. You should use this attribute to set a unique initial key for the queue manager, prior to setting a values of the attributes that are encrypted.

If an initial key is not set using this attribute, a default initial key is used.

Warning: If you change this attribute, the values of the attributes that are encrypted are invalidated and must be reset before they can be used.

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[MQ 9.3.0 Jun 2022][AIX, Linux, Windows][MQ 9.3.0 Jun 2022]

KEYRPWD

The password to access the TLS key repository.

If a value is specified for this attribute, it is used as the password to access the Secure Sockets Layer key repository. If this attribute is blank, the stash file that is associated with the key repository is used. If the stash file is not present or cannot be read, the key repository cannot be accessed and channels using TLS fail to start.

You should set INITKEY to a unique value for the queue manager before this attribute is set. The default value is blank.

++ For MQ 9.2 LTS

No new attributes for DISPLAY QMGR were added in MQ 9.2 LTS.

++ For MQ 9.1 LTS

+ Attribute ADVCAP (New in 9.1)

https://www.ibm.com/support/knowledgecenter/SSFKSJ_9.1.0/com.ibm.mq.pro.doc/q127180_.htm

IBM MQ / 9.1

What's changed in IBM MQ Version 9.1.0 since Version 9.0.0

Command and configuration file changes for Version 9.1.0

IBM MQ Advanced identification

From Version 9.1.0, new queue manager attribute is added to enable queue managers with IBM MQ Advanced entitlement to identify themselves as advanced queue managers.

This allows other components such as IBM MQ clients, Managed File Transfer agents, and IBM MQ Bridge to blockchain to ensure they connect to a correctly entitled queue manager.

You can also use this feature help to identify which queue manager entitlements are installed, IBM MQ Advanced or IBM MQ Base.

For more information, see the ADVCAP attribute of the DISPLAY QMGR MQSC command, and the MQIA_ADVANCED_CAPABILITY attribute of the Inquire Queue Manager (MQCMD_INQUIRE_Q_MGR) PCF command.

https://www.ibm.com/support/knowledgecenter/SSFKSJ_9.1.0/com.ibm.mq.ref.adm.doc/q086240_.htm

IBM MQ / 9.1 /MQSC commands

DISPLAY QMGR

[IBM MQ Advanced] ADVCAP

Whether IBM MQ Advanced extended capabilities are available for a queue manager.

• [z/OS][V9.1.0 Jul 2018] On z/OS, from IBM MQ Version 9.0.4, the queue manager sets the value to be ENABLED, only if the value of QMGRPROD is ADVANCEDVUE. For any other value of QMGRPROD, or if QMGRPROD is not set, the queue manager sets the value to DISABLED. If ADVCAP is ENABLED you must be entitled to IBM MQ Advanced for z/OS Value Unit Edition (VUE). See START QMGR on z/OS and Installing IBM MQ Advanced for z/OS Value Unit Edition for more information.

• [UNIX, Linux, Windows, IBM i][V9.1.0 Jul 2018] On other platforms, from IBM MQ Version 9.0.5, the queue manager sets the value to be ENABLED, only if you have installed Managed File Transfer, XR, Advanced Message Security or RDQM. If you have not installed Managed File Transfer, XR, Advanced Message Security or RDQM, ADVCAP is set to DISABLED. If ADVCAP is ENABLED, you must be entitled to IBM MQ Advanced. The list of installable components that enable ADVCAP might change in future releases. for more information, see IBM MQ components and features and Installing IBM MQ Advanced for Multiplatforms.

+ Attributes IMG* (New in 9.1):

https://www.ibm.com/support/knowledgecenter/SSFKSJ_9.1.0/com.ibm.mq.con.doc/q018500_.htm

IBM MQ / 9.1 / Managing logs
Managing log files

https://www.ibm.com/support/knowledgecenter/SSFKSJ_9.1.0/com.ibm.mq.ref.adm.doc/q086240_.htm

IBM MQ / 9.1 / MQSC commands
DISPLAY QMGR

[V9.1.0 Jul 2018] IMGINTVL

The target frequency with which the queue manager automatically writes media images.

[z/OS]This parameter is not valid on z/OS.

[V9.1.0 Jul 2018] IMGLOGLN

The target amount of recovery log written by which the queue manager automatically writes media images.

[z/OS]This parameter is not valid on z/OS.

[V9.1.0 Jul 2018] IMGRCOVO

Whether specified objects are recoverable from a media image, if linear logging is being used.

[z/OS]This parameter is not valid on z/OS.

[V9.1.0 Jul 2018] IMGRCOVQ

Whether a local or permanent dynamic queue object is recoverable from a media image, if linear logging is being used.

[z/OS]This parameter is not valid on z/OS.

[V9.1.0 Jul 2018] IMGSCHEM

Whether the queue manager automatically writes media images.

[z/OS]This parameter is not valid on z/OS.

++ For MQ 9.0 LTS

No new attributes for DISPLAY QMGR were added in MQ 9.0 LTS.

++ For MQ 8.0

+ Attribute AMQPCAP (New in 8.0.0.4)

Indicates if the AMQP Service component has been installed.

For MQ 8.0: It can ONLY be installed by using the IBM MQ V8.0.0.4 manufacturing refresh (or later), not the V8.0.0.4 Fix Pack.

You cannot install the AMQP component on a version of the queue manager earlier than V8.0.0.4.

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For more information see:

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.1.0/com.ibm.mq.ref.adm.doc/q086240.htm

IBM MQ 9.1.x / IBM MQ / Reference / Administration reference / MQSC commands / DISPLAY QMGR

AMQPCAP

Whether AMQP capabilities are available for a queue manager.

+ Attribute CERTLABL (New in 8.0):

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=keywords-certlabl-certificate-label>

IBM MQ / 9.2

CERTLABL (Certificate label)

This attribute specifies the certificate label of the channel definition.

The label identifies which personal certificate in the key repository is sent to the remote peer. The certificate is defined as described in Digital certificate labels.

Example for queue manager called QMGR1:

```
CERTLABL('ibmwebspheremqmqm_qmgr1')
```

+ Attribute CONNAUTH('SYSTEM.DEFAULT.AUTHINFO.IDPWOS') (New in 8.0):

Starting with MQ 8.0, the MQ Administrators are required to provide a password when doing a remote access.

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The user/password that we are talking here are the ones from the operating system where the queue manager resides. The queue manager does NOT store passwords.

The MQ Client passes the userid and password to the queue manager, the queue manager checks the entry for AUTHINFO and it sees that the CHCKCLNT(REQADM) is set, which means that the MQ Administrators must provide a valid password. The queue manager receives the userid from the client and it determines that this userid belongs to the local group "mqm".

Thus, the queue manager asks the operating system (OS) to validate the received password for the userid. The OS is the one in charge of validating that the provided password is the correct one, and tells the results to the queue manager. If the password is fine, then the queue manager proceeds with the connection, but if the password is not valid, then the queue manager will issue a reason code 2035.

See the following technote for the new errors that are generated and some workarounds to overcome them. This technote includes also information on the MQCSP structure that can be used to specify userids and passwords that are longer than 12 characters.

<https://www.ibm.com/support/pages/node/246843>

MQ errors AMQ5540, AMQ5541 and AMQ5542, application did not supply a user ID and password, 2035 MQRC_NOT_AUTHORIZED [MQCSP, CONNAUTH CHCKCLNT(REQDADM)]

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=authentication-connection-configuration>

IBM MQ / 9.2

Connection authentication: Configuration

A queue manager can be configured to use a supplied user ID and password to check whether a user has authority to access resources.

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On a queue manager object, the CONNAUTH attribute can be set to the name of an authentication information (AUTHINFO) object. This object can be one of two types (AUTHTYPE attribute):

IDPWOS = Indicates that the queue manager uses the local operating system to authenticate the user ID and password.

IDPWLLDAP = Indicates that the queue manager uses an LDAP server to authenticate the user ID and password.

+ Attribute REVDNS (New in 8.0):

https://www.ibm.com/docs/en/ibm-mq/8.0?topic=800-new-family-features#q113120__chlauth

IBM MQ / 8.0

New family features

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Security: Reverse lookup host names in CHLAUTH rules

The WebSphere MQ CHLAUTH rules have been enhanced so that CHLAUTH definitions can use Domain Name Server (DNS) host names instead of IP addresses. The queue manager REVDNS attribute controls whether reverse lookup of the hostname from a Domain Name Server is done for the IP address from which a channel has connected. If this attribute is enabled, DNS host names are reverse looked-up for the IP addresses of inbound channels when this information is required.

If the REVDNS attribute is not enabled, DNS host names are not reverse looked-up for the IP addresses of inbound channels.

++ For MQ 7.5

+ Attribute DEFCLXQ (New in 7.5):

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=dc-planning-how-you-use-multiple-cluster-transmission-queues>

IBM MQ / 9.2

Planning how you use multiple cluster transmission queues

Defining the transmission queues

There are two methods of defining transmission queues:

- Automatically, using the queue manager attribute DEFCLXQ, as follows:

ALTER QMGR DEFCLXQ(SCTQ | CHANNEL)

DEFCLXQ(SCTQ) indicates that the default transmission queue for all cluster-sender channels is SYSTEM.CLUSTER.TRANSMIT.QUEUE. This is the default value.

DEFCLXQ(CHANNEL) indicates that by default each cluster-sender channel uses a separate transmission queue named SYSTEM.CLUSTER.TRANSMIT.channel name. Each transmission queue is automatically defined by the queue manager. See Automatically-defined cluster transmission queues for more information.

- Manually, by defining a transmission queue with a value specified for the CLCHNAME attribute. The CLCHNAME attribute indicates which cluster-sender channels should use the transmission queue. See Planning for manually-defined cluster transmission queues for more information

+ Attribute SPLCAP (New in 7.5):

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=manager-splcap>

IBM MQ / 9.2

SPLCAP

SPLCAP

Indicates whether security capabilities of MQ Advanced Message Security (AMS) are available for a queue manager.

MQCAP_SUPPORTED: This is the default value if the MQ AMS component is installed for the installation that the queue manager is running under.

MQCAP_NOT_SUPPORTED

Historical Note: The original product name for AMS was SPL.

++ For MQ 7.1

+ Attribute ACTVCONO (New in 7.1):

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=cacaati-setting-mqconnx-options-control-collection-activity-trace-information>

IBM MQ / 9.2

Setting MQCONNX options to control collection of activity trace information

If the queue manager attribute ACTVCONO is set to ENABLED, you can use the ConnectOpts parameter on the MQCONNX call to enable or disable application activity reports on a per connection basis.

These options override the activity trace behavior defined by the queue manager attribute ACTVTRC, and can be overridden by settings in the activity trace configuration file mqat.ini.

+ Attribute ACTVTRC (New in 7.1):

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=information-setting-actvtrc-control-collection-activity-trace>

IBM MQ / 9.2

Setting ACTVTRC to control collection of activity trace information

Application activity trace messages are generated only for connections that begin after application activity trace is enabled. The ACTVTRC parameter can have the following values:

ON = API activity trace collection is enabled

OFF = API activity trace collection is disabled

+ Attribute CERTVPOL (New in 7.1):

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=mq-configuring-certificate-validation-policies-in>

IBM MQ / 9.2

Configuring certificate validation policies in IBM MQ

You can specify which TLS certificate validation policy is used to validate digital certificates received from remote partner systems in four ways.

On the queue manager, the certificate validation policy can be set in the following ways:

Using the queue manager attribute CERTVPOL. For more information about setting this attribute, see ALTER QMGR.

Changes to this attribute take effect only after a refresh security command has been issued.

+ Attribute CHLAUTH (New in 7.1):

Whether channel authentication records are checked.

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=mechanisms-channel-authentication-records>

IBM MQ / 9.2

Channel authentication records

To exercise more precise control over the access granted to connecting systems at a channel level, you can use channel authentication records.

To get channel authentication records to control inbound channels, use the MQSC command

ALTER QMGR CHLAUTH(ENABLED).

CHLAUTH rules are applied for a channel MCA that is created in response to a new inbound connection. For a channel MCA created in response to the channel being started locally, no CHLAUTH rules are applied.

The CHLAUTH attribute is added to upgraded queue managers:

CHLAUTH(DISABLED) => Channel Authority Records feature is DISABLED.

By default, when creating a new queue manager in MQ 7.1 or later, the following attribute is ENABLED:

CHLAUTH(ENABLED) => Channel Authority Records feature is ENABLED.

See the following technote related to MQ RC 2035 when trying to use an MQ administrator id to remotely access a new queue manager created in MQ 7.1 or later:

<https://www.ibm.com/support/pages/node/196563>

MQ RC 2035 MQRC_NOT_AUTHORIZED or AMQ4036 or JMSWMQ2013 when using client connection as an MQ Administrator (CHLAUTH, channel authentication records)

<https://www.ibm.com/support/pages/how-remove-ibm-mq-channel-authentication-record-chlauth>

How to remove an IBM MQ channel authentication record (CHLAUTH)

+ Attribute CUSTOM (New in 7.1):

This attribute is reserved for the configuration of new features before separate attributes have been introduced. It can contain the values of zero or more attributes as pairs of attribute name and value in the form NAME(VALUE).

+ Attribute PSCLUS (New in 7.1):

Controls whether this queue manager participates in publish subscribe activity across any clusters in which it is a member. No clustered topic objects can exist in any cluster when modifying from ENABLED to DISABLED.

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=reference-display-qmgr-display-queue-manager-settings>

IBM MQ / 9.2

DISPLAY QMGR

PSCLUS

Controls whether this queue manager participates in publish subscribe activity across any clusters in which it is a member. No clustered topic objects can exist in any cluster when modifying from ENABLED to DISABLED.

+ Attribute SUITEB (New in 7.1):

Whether Suite B compliant cryptography is used.

<https://www.ibm.com/docs/en/ibm-mq/9.2?topic=mq-configuring-suite-b>

IBM MQ / 9.2

[AIX, Linux, Windows]

Configuring IBM MQ for Suite B

+ Attribute VERSION (New in 7.1):

The version of the WebSphere MQ installation, the queue manager is associated with. The version has the format VVRRMMFF:

VV: Version

RR: Release

MM: Maintenance level

FF: Fix level

For example, the value shown in this technote of VERSION(07010000) means: 7.1.0.0

07: Version

01: Release

00: Modification level

00: Fix level

Examples:

VERSION(07050000)

VERSION(08000000)

+ Attribute XRCAP (New in 7.1):

XRCAP means "Telemetry capable".

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.1.0/com.ibm.mq.ref.adm.doc/q086240.htm

IBM MQ / 9.1

DISPLAY QMGR

XRCAP = Whether MQ Telemetry capability is supported by the queue manager.

+++ end