meshIQ Manage

User's Guide

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Chapter 1: Introduction

Welcome to the *meshIQ Manage User's Guide*. This guide will introduce the user to basic functionality and describe the dialog windows encountered while working with meshIQ Manage. Please review this guide carefully before installing the product.

1.1 How this Guide is Organized

Chapter 1: Document information.

Chapter 2: Contains a brief functional description of meshIQ Manage.

Chapter 3: Information on system access.

Chapter 4: Detailed information on how to use meshIQ Manage.

Appendix A: Provides a list of all reference information.

Appendix B: Contains a list of objects and their icons.

Appendix C: Descriptions of object menu options.

Appendix D: MQ Statistics table attributes listed.

Index: Contains document index.

1.2 History of this Document

Table 1.2-A. History of this Document

Release Date	Document Number	Product Version	Summary
March 2020	NN10.008	10	Update figure 4.1.
April 2020	NN.10.009	10	Updated figures 4. 1-A, 4.3.1.3.1-A, 4.3.1.4-A, 4.3.1.3.1.2-A. Add info for EMS consumers and connections in 4.3.1.1, Table B-1, Table C-1. Add section 4.2.8, Sharing Dashboards.
June 2020	NN.10.010	10	Miscellaneous updates throughout for version 10.0.7, including support for Apache Kafka. The following sections have been updated: 4.6 Scheduling, 4.5 Inactivity, 4.3.3.2 EMS Manager, Table C1, 4.3.4.4 Force Update, 4.3.7.6 Resize Viewlets, 4.4.3.3 Load Messages.
August 2020	NN.10.011	10	Recreate section 4.2.2 Add a New Dashboard). Updates to table C-1, Workgroup Server > Create option. Add section 4.1.1.4 (Create Remote Kafka Manager). Update figures throughout for the new add viewlet screen. Add section 4.2.9 (Default Dashboard Templates). Update "Show Empty Queues" setting in Table 4.4.3.1-A.
September 2020	NN.10.012	10	Updates to section 4.3.8.2.
November 2021	NN.10.019	10	Updated Dashboards section with Dashboard Management, tags, import and export, and User Views (now User Perspectives). Added Attribute Filters and Message Criteria

Table 1.2-A. History of this Document

Release Date	Document Number	Product Version	Summary
			sharing, exporting viewlet data to file, Color Settings, Environment Level. Added Allow/Inhibit Get and Put from options menu (prior release).
January 2022	NN.10.021	10	Updated Message Commands, Message Criteria, and Load Messages Settings to reflect option to select a message criteria record or change default Message Descriptor properties. Added Load Messages Max loaded messages count. Updated Message Commands to add limitation on actions when the method of message selection is Message Position and multiple individual messages are selected. Renamed Inactivity section (now Updating the Configuration File) and reworked to remove obsolete content and add new configuration setting.
March 2022	NN.10.021	10	Dashboard Ownership Management; new User Settings for collapsed viewlets, minimum refresh interval; new global setting for session timeout; secondary column sorting in schemas; force refresh mode; Delete IIB Message Flows, Sub Flows, and Resources; attribute search in console.
April 2022	NN.10.021.1	10	Manage Filtered Columns, Manage Frozen Columns; Kafka Schema, Schema Subject, and Schema Subject Version viewlets; Solace viewlets
October 2022	NN.10.022	10	Navigator version 10.5 updates. Statistics report; Attribute filters applies at workgroup server; Dashboard Ownership Permissions columns; User Views renamed User Perspectives; Request History Export; New Queue Manager fields; Global Settings Bulk selection Max limits.
October 2023	MM.11.000	11	v10.x changes (Nov.- Dec 2022): Sorting behavior changes (v10.5.0.9); updated Reroute rights (v10.3.x fix). v11 changes: meshIQ Manage and meshIQ Security names, logo updates throughout; Multiple Workgroup servers (User Settings, Color Settings tab, Creating New / Temporary Viewlets); Create RabbitMQ Remote Manager, RabbitMQ Viewlets; Remote connection manager actions (copy as, undo, verify); Kafka encryption (SSL connections) and import properties, Confluent Platform Metadata Service (MDS) Setup; Attribute filter variables; Result Limit affects total objects label; Retrieving Messages from an Inoperable Cluster Queue; Shared Storage options for messages; other v11 changes.

1.2.1 User Feedback

meshIQ encourages all Users and Administrators of meshIQ Manage to submit comments, suggestions, corrections, and recommendations for improvement of all documentation. Please send your comments via e-mail to: support@meshiq.com. You will receive a response, along with status of any proposed change, update, or correction.

1.3 Related Documents

The complete listing of related and referenced documents is listed in *Appendix A* of this guide.

1.4 Release Notes

See README files on installation media or the meshIQ Manage installation directory.

1.5 Intended Audience

This guide is intended for users of meshIQ Manage. There are three user groups defined for installation, use, and middleware management (diagnostics and administration):

- Middleware Team
- Application Support
- Development

1.6 Technical Support

If you need additional technical support, you can contact meshIQ by telephone or by e-mail. To contact technical support by telephone, call 800-963-9822 ext. 1. If you are calling from outside the United States, dial 001-516-801-2100. To contact meshIQ technical support by e-mail, send a message to *mysupport@meshiq.com*. To access the meshIQ automated support system (user ID and password required), go to *https://mysupport.meshiq.com/*. Contact your local meshIQ Manage Administrator for further information.

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Chapter 2: About meshIQ Manage

2.1 meshIQ Manage

The purpose of this guide is to familiarize users with the meshIQ Manage application, introduce them to basic functionality, and describe all dialog windows that they can encounter when working with meshIQ Manage.

The system consists of two main parts:

- Server-side components that reside within an Apache-Tomcat JSP container or equivalent.
- Client application running in a browser using HTML pages, which are served by the server-side components.

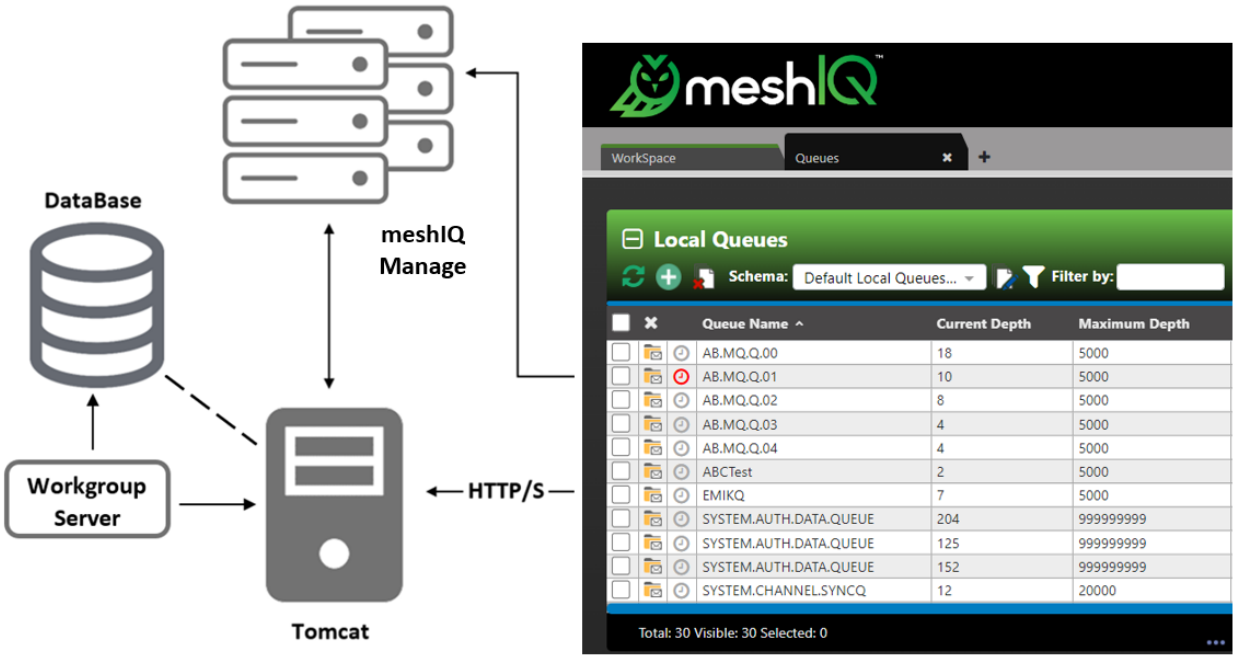

Figure 2.1-A. Message Management Flow Chart

meshIQ Secure must be installed and configured at a minimum to use meshIQ Manage.

meshIQ Manage supports IBM MQ, IIB, ACE, TIBCO EMS, Apache Kafka, Solace, and RabbitMQ objects. For information on each platform, please see the following links:

- IBM MQ: *https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.0.0/com.ibm.mq.pro.doc/q003070_.htm*
- IBM IIB and ACE: *https://www.ibm.com/docs/en/app-connect/11.0.0?topic=app-connect-enterprise-software*
- TIBCO EMS: *https://docs.tibco.com/pub/ems/8.4.0/doc/pdf/TIB_ems_8.4_users_guide.pdf*

- Apache Kafka:
  https://kafka.apache.org/documentation/

- Solace Pub/Sub
  https://docs.solace.com/

- RabbitMQ
  https://www.rabbitmq.com/documentation.html

Chapter 3: Accessing meshIQ Manage

3.1 System Access

After successful deployment, the web application can be accessed using the following URL:

`http://<machine_name>:8080/manage/`

meshIQ Manage uses workgroup server authentication when logging into the application. The login/password pair must be defined with appropriate group permissions.

Enter your assigned **User ID** and **Password**. Only specify the **Domain** if instructed to do so by your administrator. Click **LOGIN** to enter the application.

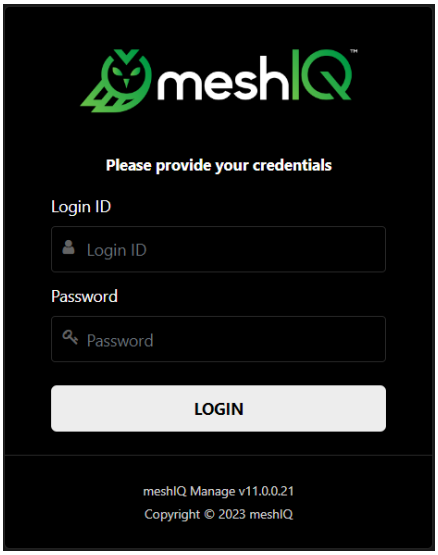

Figure 3.1-A. meshIQ Manage Login

3.2 Connecting to the Network

If this is the first time you are logging into meshIQ Manage and your Administrator has not yet assigned connections, the *Connect to WGS* window will appear. This is where you select the environments you want to log into.

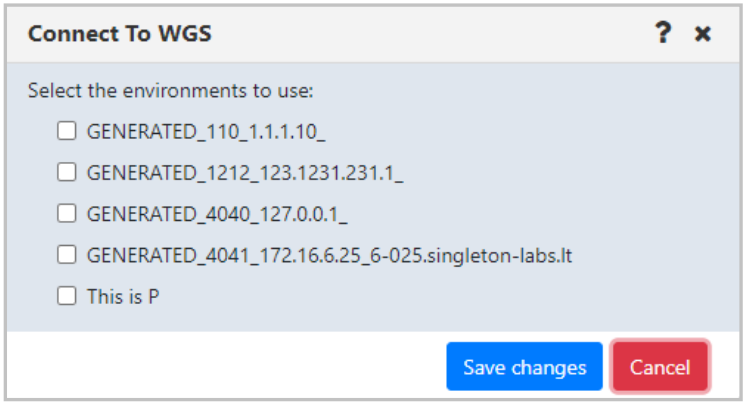

Figure 3.2-A. Connecting to a Workgroup Server selection

If there are issues logging into one of the selected environments, go to *Failed Connection*, for more information.

3.2.1 Select Different Workgroup Server

Users can select different connection environments in which they want to work in. Do this by clicking the **Add** button located at the top-left of the *Workgroup servers* viewlet.

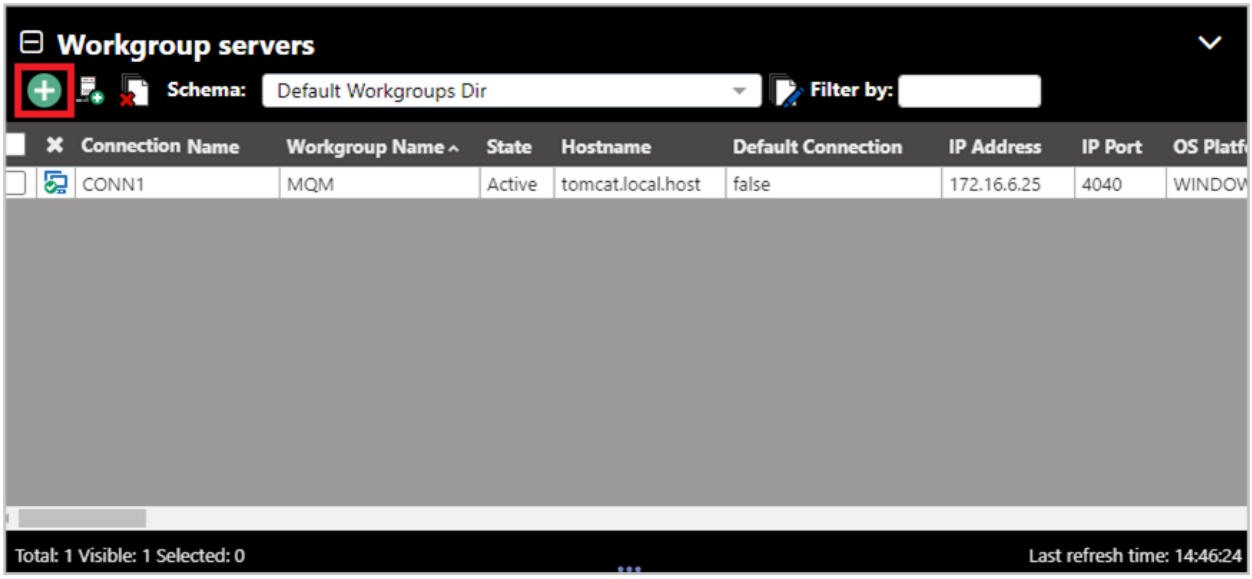

Figure 3.2.1-A. Workgroup Servers Viewlet

The *Connect to WGS* window opens (this is the same window displayed when logging in with no specified connections, as seen in section 3.2 above). All connections available to the user are displayed. The check mark represents environments the user is currently connected to. Select all desired connections and click **Save changes**. meshIQ Manage will now connect to the selected environments.

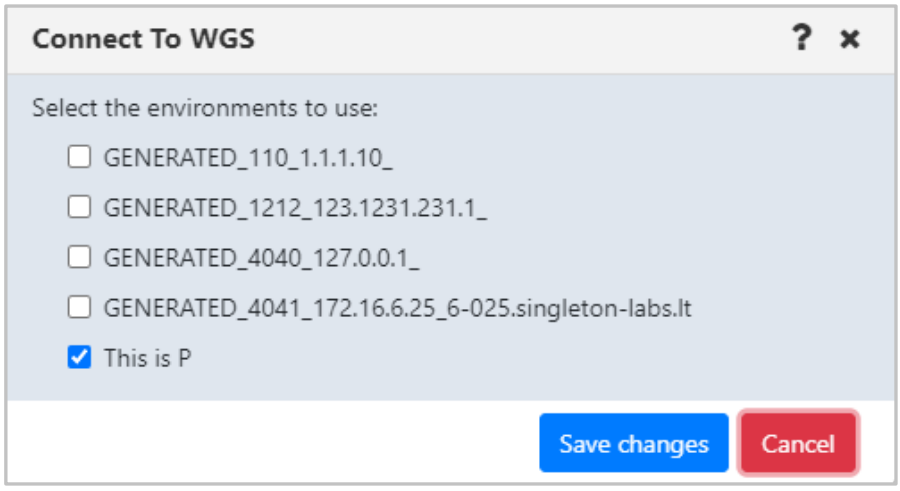

Figure 3.2.1-B. Workgroup Server Selection

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3.3 Failed Connection

When logging in, if there are connection issues to the currently selected workgroup servers, the *Connection Selection* window displays listing all other available connections. On this window the user can select the connections to reconnect to. If the selected connections are successful, then they will be remembered as this user's selected connections.

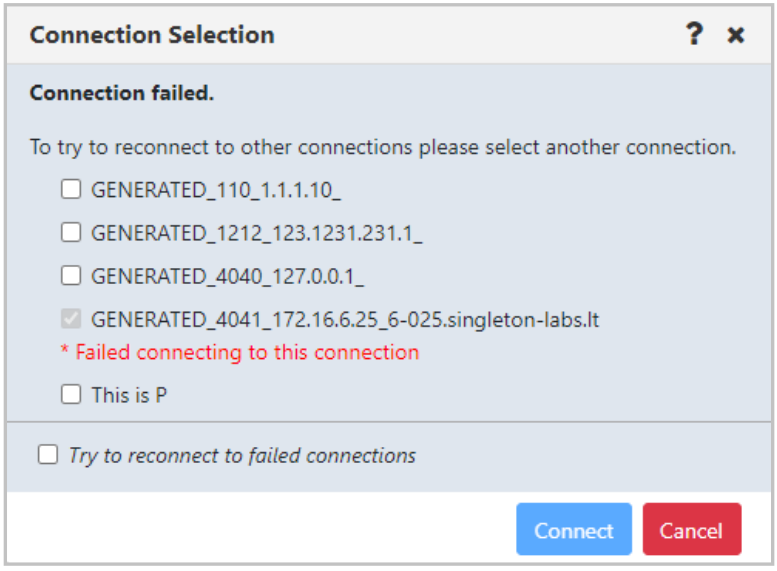

Figure 3.3-A. Connection Failed

If any of the connections return an error, a window will appear asking the user to re-enter their credentials.

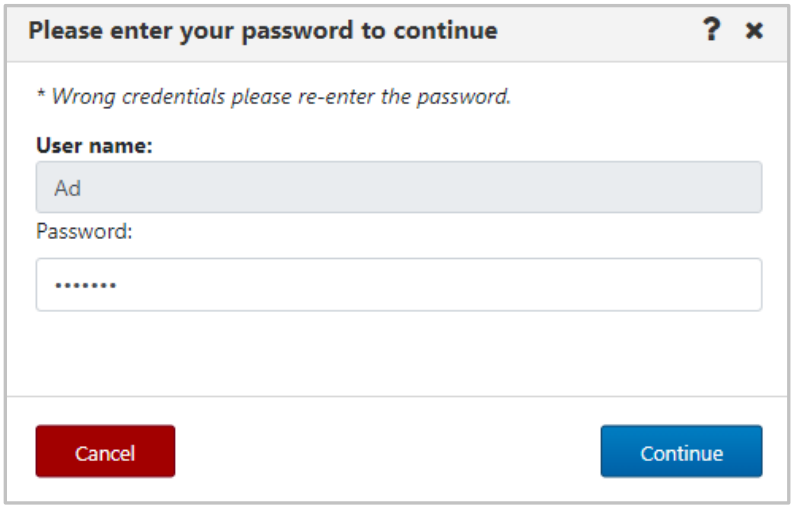

Figure 3.3-B. Reenter Credentials

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Chapter 4: Using meshIQ Manage

4.1 General Features

Figure 4.1-A. General Features

- A: Username of the user who is logged in.
- B: **Connect** button. Reconnects workgroup server connections (Section *4.4.1*).
- C: **Request History** button. Displays all running and completed tasks (Section *4.4.5*).
- D: Open the **Statistics** Report (Section *4.4.2*).
- E: Opens the **Schedules** window (Section *4.6*).
- F: Click to display **User/Global Settings** window (Section *4.4.4*).
- G: Opens the security application. See the Resource Center (link below) for more information.
- H: Opens the *Resource Center* or other online resource defined in your system's global settings (Section *4.3.9*).
- I: Displays the **version number**.
- J: **Log Out** button.
- K: **User Perspective list.** Group related dashboards into perspectives, or views (section *4.2.13*).
- L: **Workspace Dashboard.** The Workspace dashboard is the default dashboard. It shows your connections. The dashboard with the green line is the default dashboard. You can change your default dashboard (see Set Dashboard as Default).

- M: **Other dashboards.** Each tab represents a different dashboard.
- N: **Create dashboard** button (Create New Dashboard).
- O: Navigation between dashboards (Displaying Additional Dashboards).
- P: **Paste** button: Used when copying objects (Copy Objects).
- Q: **Dashboards ...** button: Used to add a shared dashboard (Sharing).
- R: Create a new viewlet (*Adding and Maintaining Viewlets*).
- S: **Collapse** button. Collapses a viewlet (*Collapse / Expand Viewlets*).
- T: **Add** button. Use the **Add** button to quickly create objects (*Create Objects*).
- U: Click checkbox to display the object's action menu (Appendix C: Object Menus).
- V: **Expand** button. Expand a viewlet (*Collapse / Expand Viewlets*).
- W: **Viewlet Menu** button (*Viewlet Menu*).
- X: **Console** panel (*Console Panel*).

4.2 Dashboards

The interface's flexible design allows individual users to focus on the data that is most important to them. The tabs at the top of the screen represent dashboards.

4.2.1 What is a Dashboard?

A dashboard is a way to organize information. Each dashboard contains viewlets, which provide details about specific objects, such as queue managers, queues, connections, or topics.

Dashboards are composed of a summary panel above and a Console panel below (*see Console Panel*). The summary panel displays the main viewlets of the object. The Console panel displays viewlets containing additional object information, for example, messages, attributes, object statuses, etc.

4.2.2 Workspace Dashboard

The *Workspace* dashboard is the default dashboard; this will be the dashboard users see immediately after logging in. The default dashboard can be changed, please see Set Dashboard as Default for more information. To learn how to create dashboards, skip to Create New Dashboard.

The *Workspace* dashboard consists of:

- *Workgroup Servers* viewlet: This is the first viewlet appearing on the *Workspace* dashboard. Displays a list of workgroup servers currently configured, whether you are connected, and provides the information described in *Table 4.2.2.1-A*.
- *MQM Node* viewlet: This is the second viewlet appearing on the *Workspace* dashboard. Displays all nodes. Scroll down to view the objects of the *MQM Node* viewlet. Please see *Nodes* for more information on node viewlets.

NOTE

You can add viewlets to the *Workspace* dashboard, but they are always temporary (not saved when you close your session). See *Adding and Maintaining Viewlets* for more information.

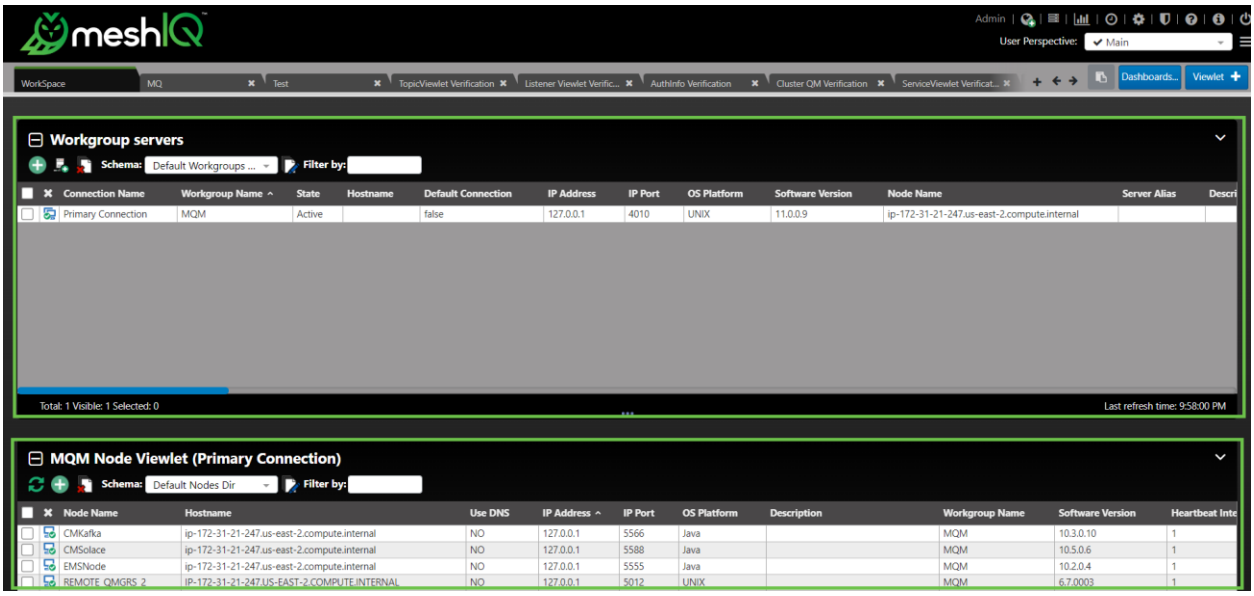

Figure 4.2.1-A. Workspace Dashboard

4.2.2.1 Workgroup Servers Viewlet

Connected workgroup servers are signified with a green check-mark symbol, and disconnected servers with a red exclamation point symbol. Scroll to the right to see all the workgroup server connection's properties and limits.

Select a workgroup server to display the pop-up menu. Please see *Appendix C* for an explanation of the menu options.

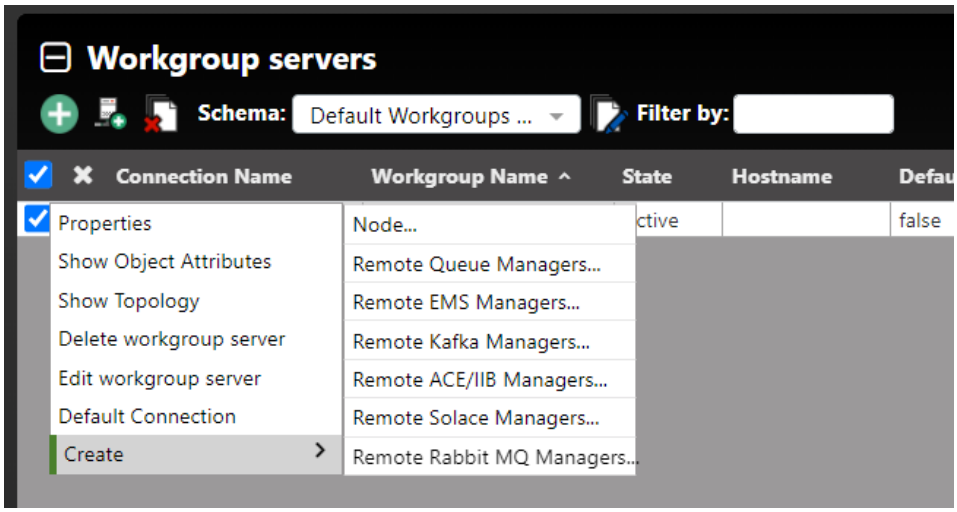

Figure 4.2.2.1-A. Workgroup Server Pop-up Menu

NOTE

Depending on your user permissions, your options may differ from the above figure.

The table below describes the functionality of the *Workgroup servers* viewlet toolbar.

Table 4.2.2.1-A. Workgroup Servers Viewlet Toolbar

Field	Name	Description
	Add	Displays the Connect to WGS window (see *Select Different Workgroup Server*) to select different connections.
	Add Workgroup Server	Launches the *Work Group Server Connections* window to add, modify, delete or re-assign viewlets.
	Default Table Sorting	Click to go back to the viewlet's default sorting.
	Schema	The current schema that is in effect. Controls how the viewlet is displayed. See *Schemas* for more information.
	Filter by	Allows you to filter the workgroup server list. Key in any string of characters to filter. The filter applies to all workgroup server aspects.

4.2.2.1.1 Create a Node

To create a node, either:

- Select **Create** > **Node...** from the workgroup server's action menu within the *Workgroup servers* viewlet (see Figure 4.2.2.1-A).

  -or-

- Click the green **Add** button within a *Nodes* viewlet (see Create Objects).

A window similar to the following opens.

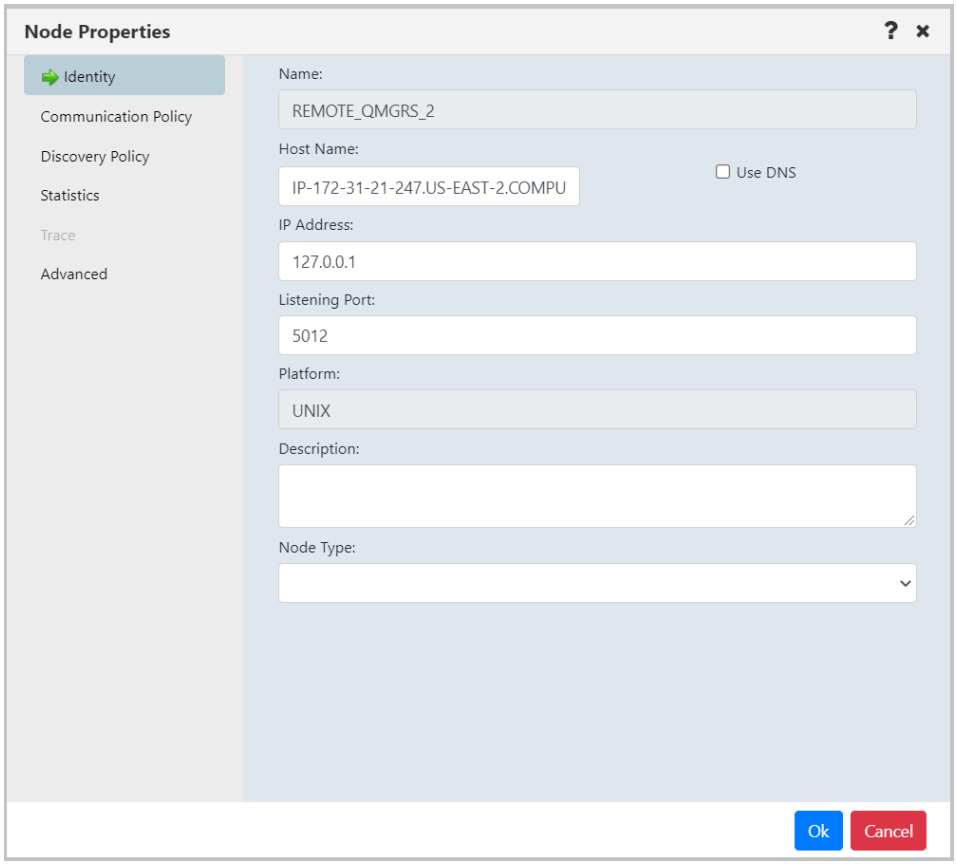

Figure 4.2.2.1.1-A. Node Properties – Identity Tab

Specify all node properties on this screen. Enable the **Use DNS** option to automatically populate the **IP Address** field when the **Host Name** is specified.

Switch the **Node Type** to create the desired type of node. Available types are **M6-WMQ Agent-managed MQ Node**, **EMS Agent-managed Node**, **Kafka Agent-managed Node**, **ACE/IIB Agent-managed Node**, and **Solace Agent-managed Node**.

Click **Ok** to create the node.

NOTE

When creating a node, you're actually adding a new node reference. Only existing nodes can be added to your workgroup server. An identical node can be added with a different name (the Host Name and IP address would be the same). In this case, all actions performed within one of the nodes would also be applied to the identical node as well.

Table 4.2.1.1.-A. Node Properties Window Attributes	
Field	**Description**
Identity Tab	*Figure 4.2.2.1.1-A*

Table 4.2.1.1.-A. Node Properties Window Attributes	
Field	**Description**
Name	Name of the node, as defined in meshIQ Manage
Host Name	The network name for the physical workstation on which the agent is installed
Use DNS	Select this checkbox if you want to use Domain Naming Service instead of WebSphere MQ node's IP address.
IP Address	WebSphere MQ node's IP address
Listening Port	Agent listening port number for this IP address
Platform	Operating system platform of the node (for example, Java, Unix, Linux, or Windows)
Description	Optional field to describe the node/agent
Node Type	The default **Node Type** is **M6-WMQ Agent-managed MQ Node**. Other Node Types are EMS Agent-managed Node, Kafka Agent-managed Node, and ACE/IIB Agent-managed Node.
Communication Policy	*Figure 4.2.2.1.1-B*
Heartbeat, min.	Heartbeat interval, in minutes, of the WMQ Agent. Default: 1 minute.
Update interval, sec.	Amount of time, in seconds, before the workgroup server updates information about the node's WebSphere MQ objects, such as queue managers, queues, and channels. Default: 30 seconds.
Request timeout, sec.	Command timeout period, in seconds. Sets amount of time workgroup server waits for a response from the WMQ Agent running on the node. Default: 60 seconds.
Command limit	Specifies the number of commands that can be issued by the workgroup server to the WMQ Agent without acknowledgement from the agent. A value of zero indicates that there is no command limit. Default: 5000 commands.
Send registration to GM period, sec.	Retry interval at which an agent should periodically send a registration request to the WGS. This is equivalent to an "I'm alive" message. Default: 0

Table 4.2.1.1.-A. Node Properties Window Attributes	
Field	**Description**
DNS name to create fully qualified host name	Domain name, to be used to create a fully qualified host name (one that specifies all domain levels)
Discovery tab	*Figure 4.2.2.1.1-C*
Queue managers or Managers	Specifies which queue managers (for MQ, ACE/IIB) or EMS managers are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*). Example: LONDON*
Model queues	Applies to MQ and ACE/IIB nodes. Specifies which model queues are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Namelists	Applies to MQ and ACE/IIB nodes. Specifies which namelists are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Local queues	Applies to MQ, ACE/IIB, EMS nodes. Specifies which local queues are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Remote queues	Applies to MQ and ACE/IIB nodes. Specifies which remote queues are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Authentication information	Applies to MQ and ACE/IIB nodes. Specifies which authentication information is to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Alias queues	Applies to MQ and ACE/IIB nodes. Specifies which alias queues are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).

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Table 4.2.1.1.-A. Node Properties Window Attributes	
Field	**Description**
Client connections	Applies to MQ and ACE/IIB nodes. Specifies which client connections are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Services	Applies to MQ and ACE/IIB nodes. Specifies which services are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Channels	Applies to MQ, ACE/IIB, EMS nodes. Specifies which channels are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Cluster queue managers	Applies to MQ and ACE/IIB nodes. Specifies which cluster queue managers are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Clusters	Applies to Kafka nodes. Specifies which clusters are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Subscriptions	Applies to MQ and ACE/IIB nodes. Specifies which subscriptions are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Processes	Applies to MQ and ACE/IIB nodes. Specifies which processes are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Listeners	Applies to MQ and ACE/IIB nodes. Specifies which listeners are to be automatically discovered by the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Topics	Applies to MQ, ACE/IIB, EMS, Kafka nodes. Specifies which topics are to be automatically discovered by

Table 4.2.1.1.-A. Node Properties Window Attributes	
Field	**Description**
	the workgroup server. This field accepts simple wildcards, meaning that characters can be followed by an asterisk (*).
Discovery period, min.	Time interval, in minutes, at which the WMQ Agent discovers MQ objects and reports any changes to the workgroup server. Default: 720 minutes.
Enable special name list discovery (-N)	Applies to z/OS. Use when there is a very large number of queues, channels, or any object type. Overcomes a z/OS command server limitation in creating MQCMD_INQUIRE_objectType_NAMES replies greater than 64KB. Default: Disabled
Force full discovery for initial discovery (-f)	When agent starts, force a discovery of all objects, versus only those that were altered since the last discovery time. Default: OFF
Statistics	*Figure 4.2.2.1.1-D*
Node Type	Node Type from the Identity tab
Software version	meshIQ MQ, EMS, Kafka, or ACE/IIB software version
Status	Active or Unknown
System information	Operating system and version (for example, Microsoft Windows 7, 64-bit, Version 6.1.7601 Service Pack 1).
CPU Count	Number of licensed CPUs.
Authorization	Check if the User ID is authorized to execute the various possible object commands (for example, delete queue, alter manager) for the node type MQ, EMS, Kafka, IIB/ACE, Solace, or RabbitMQ. Default: Disabled.
Event counter	Number of workgroup events that the workgroup server has generated.
Last action	The last command applied to this node. Example: EXCMD_UNMANAGE_MQNODE
Last event time	The most recent time that an event was recorded for this node
Last updated	The most recent time that the view for this node was refreshed
Time since last update	The most recent time that the node was active

Table 4.2.1.1.-A. Node Properties Window Attributes	
Field	**Description**
Advanced	*Figure 4.2.2.1.1-E*
Convert user id to upper case	Controls whether the user ID is converted to uppercase before being passed to M6-WMQ agent for checking authorizations
Buffer size, KB	Total per-socket buffer spaces reserved for receives and sends
Reuse address	If this socket option is ON, the kernel will reuse the port even if the port is busy (in the TIME_WAIT state)
TCP no delay	Disables the Nagle algorithm for send coalescing
Number of TCP/IP bind retries	Maximum number of attempts to retry binding the socket to the IP address
TCP buffering queue limit	Maximum number of items permitted in the TCP buffering queue
Max. wait time for socket r/w event, msec	Maximum number of milliseconds to wait for the socket read/write event

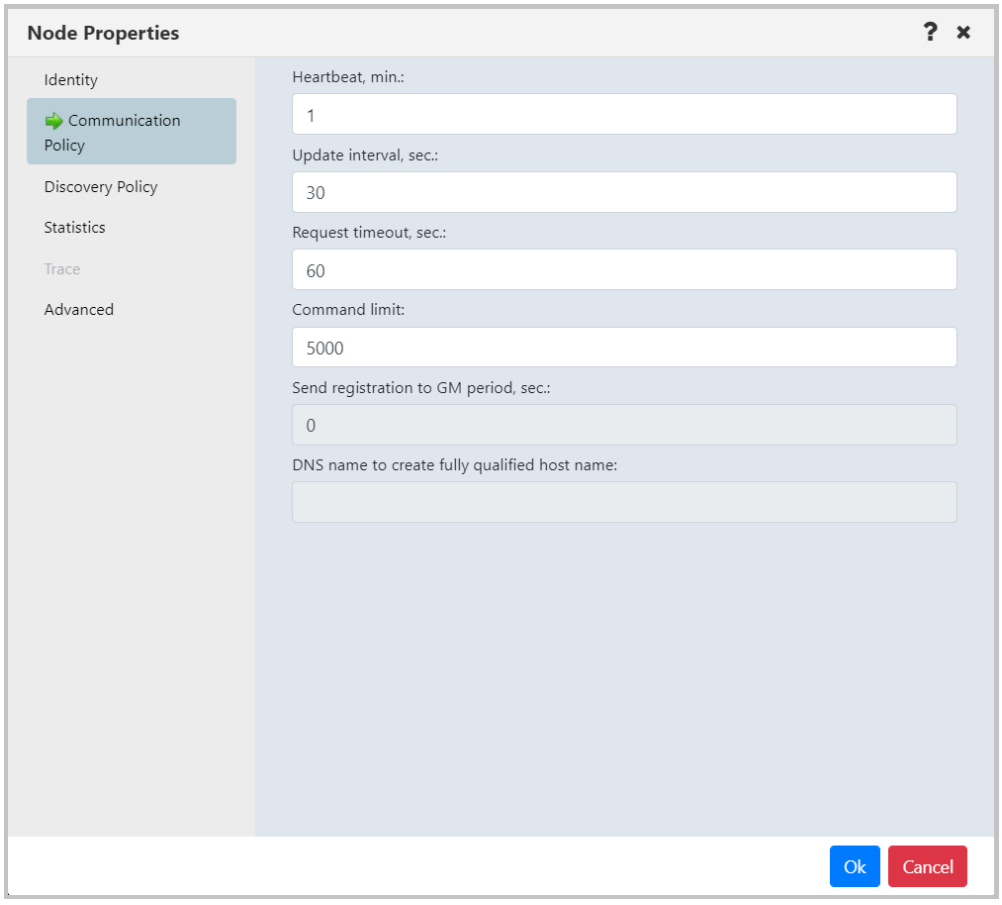

Figure 4.2.2.1.1-B. Node Properties – Communication Policy Tab

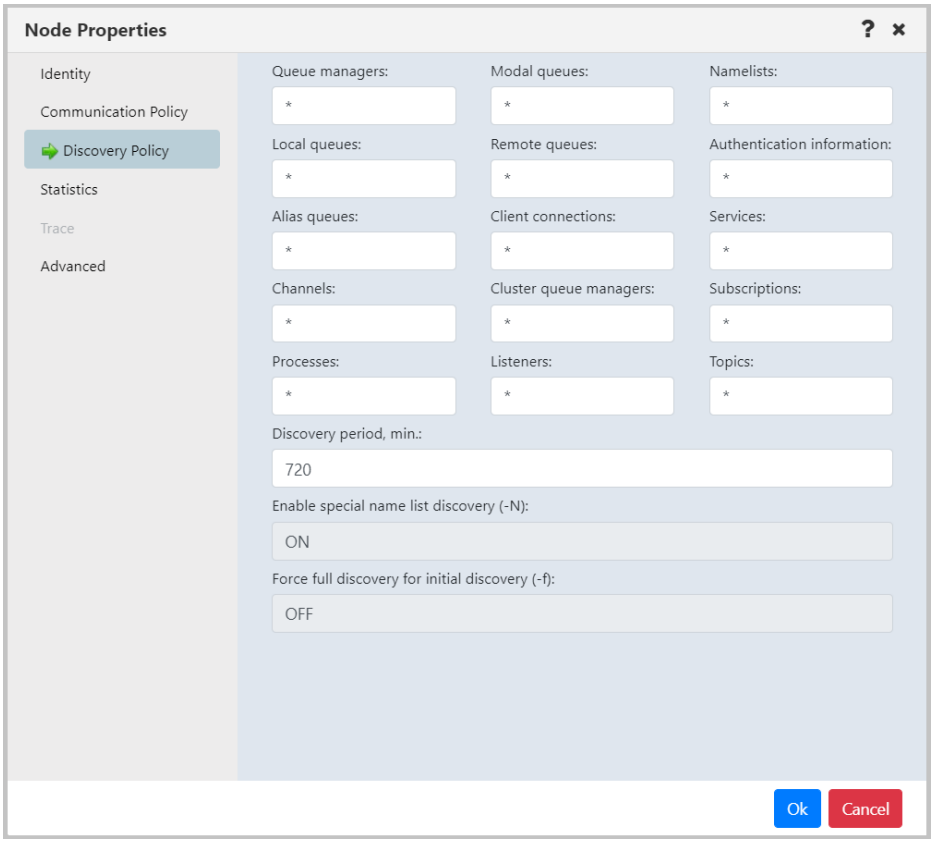

Figure 4.2.2.1.1-C. Node Properties – Discovery Policy Tab

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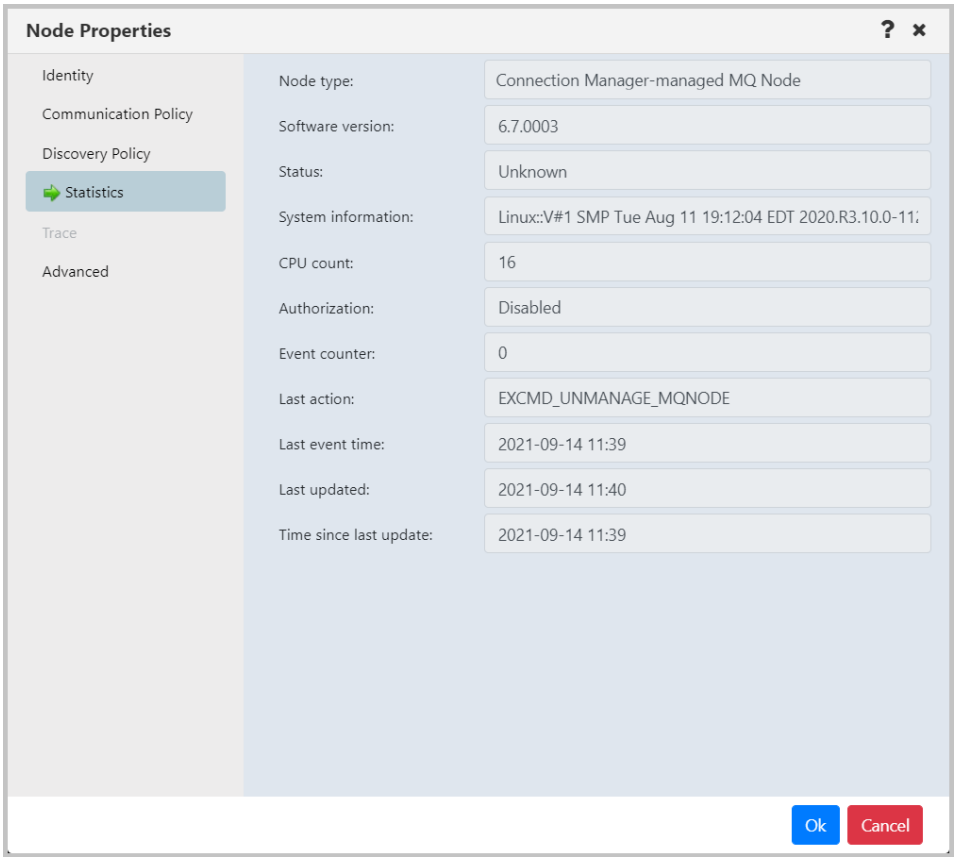

Figure 4.2.2.1.1-D. Node Properties – Statistics Tab

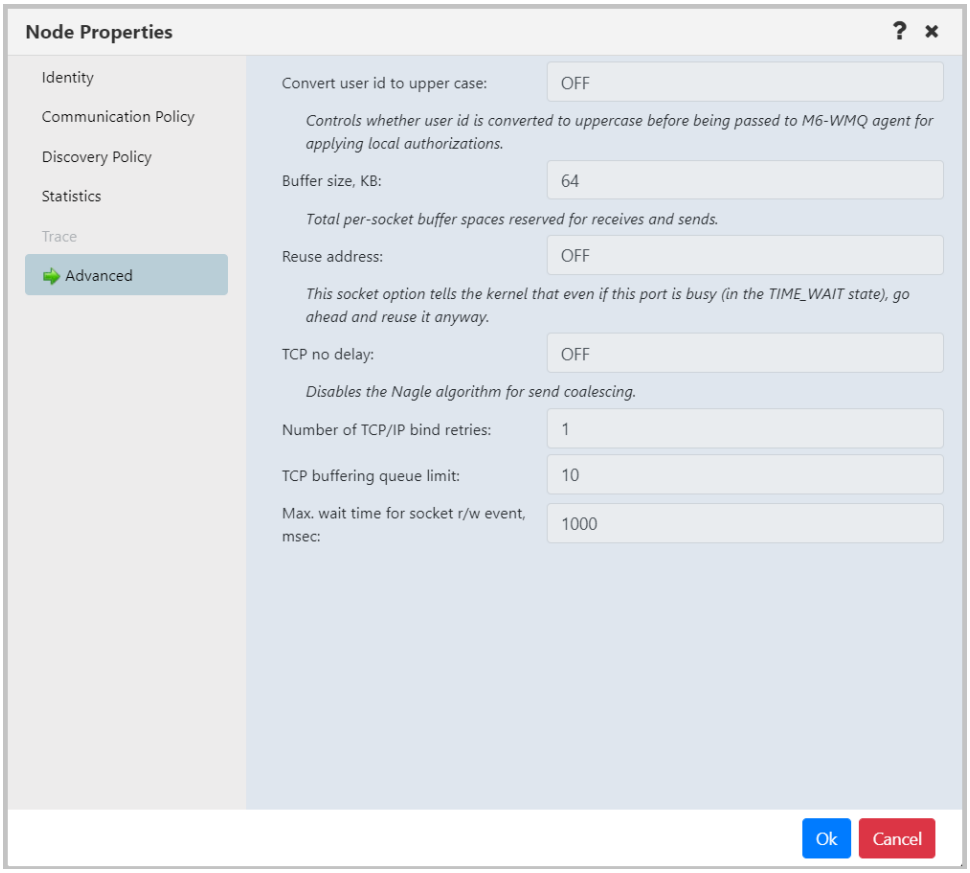

Figure 4.2.2.1.1-E. Node Properties – Advanced Tab

4.2.2.1.2 Create Remote Queue Managers

When **Create** > **Remote Queue Managers** is selected from the workgroup server's pop-up menu (*Figure 4.2.2.1-A*), the *Remote Queue Manager Connections* window opens.

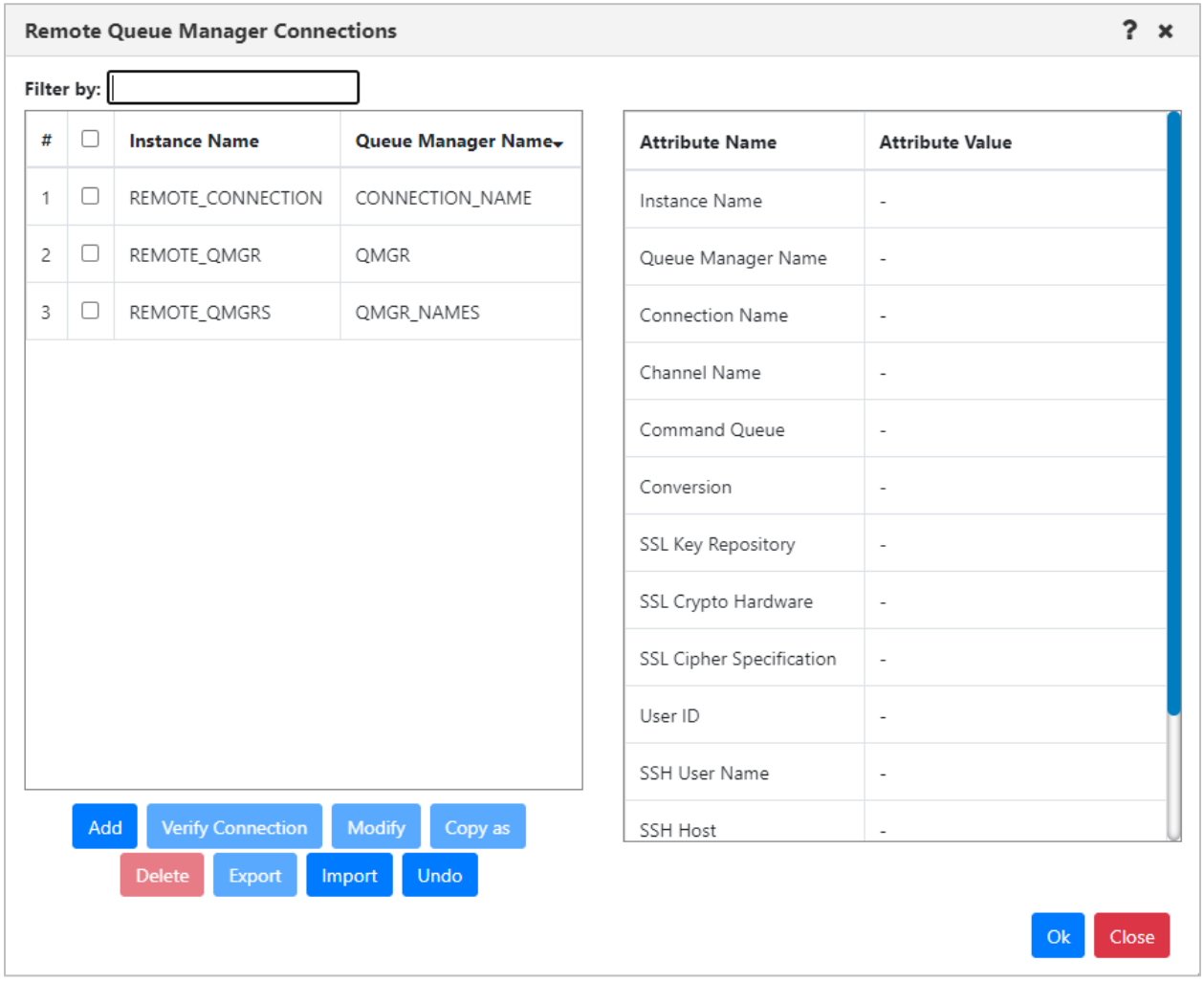

Figure 4.2.2.1.2-A. Remote Queue Manager Connections

Click the **Add** button to add a new remote queue manager connection. After adding a new connection, you can verify it. See Verifying Remote Manager Connections.

To update or delete existing remote queue managers, select them, and click either the Modify or Delete button. To learn how to import and export remote manager definitions, see Importing and Exporting Remote Managers.

NOTE

The **Undo** button may be available in the remote manager connections window immediately after you add, modify, copy, delete, or import a connection. Only the most recent action can be undone.

Hover over a remote queue manager to view its attributes on the right side of the window. The columns of the remote queue manager table on the left side of the window can be sorted alphabetically by simply clicking the column headers.

Table 4.2.2.1.2-A. Remote Queue Manager Connections Window Attributes	
Field	**Description**
General Tab	*Figure 4.2.2.1.2-B*
Connection Manager Instance name	Enter the instance name. **REMOTE_QMGRS** is the default.
Queue Manager name	Enter the name of the queue manager to which your new remote queue manager will be linked. **QMGR_NAME** is the default.
Project name	Input disabled.
User ID	Specify a user identifier/name to connect to the queue manager using security parameters (available in WMQ v.8.0 and later) or leave it empty if user authentication is not required. User IDs may be case-sensitive, especially on z/OS. Check with your security/RACF administrator to be sure.
Password	Enter the user's password. Passwords may be case-sensitive, especially on z/OS. Check with your security/RACF administrator to be sure.
Communication tab	*Figure 4.2.2.1.2-C*
Connection name	Enter the IP address(es) or host name(s) and IP port (in parentheses) as shown below to specify a name for the new connection. Example: server1(1414) or, for replicated data queue managers: server1(1414),server2(1414),server3(1414)
Command queue name	Select the name for the command queue from the drop-down menu. **SYSTEM.ADMIN.COMMAND.QUEUE** is the default.
Channel name	Enter the name of the server-connection (svrconn) channel to be used for connecting to the remote queue manager. **SYSTEM.DEF.SVRCONN** is the default.
Security Exit Name	Specifies the descriptive name of the channel security exit; this is a parameter of the MQCD channel definition structure which controls channel execution. It is passed to a channel that is called from a Message Channel Agent (MCA). Click the ellipses button ... to add a security exit name or edit / delete existing exit strings (*Figure 4.2.2.1.2-D*).
Security Exit Data	Specifies the Exit user area. It is specific to the expected data by channel security exit. This is a field that is available for the

Table 4.2.2.1.2-A. Remote Queue Manager Connections Window Attributes	
Field	**Description**
	exit to use. Click the ellipses button ... to add new or edit / delete existing exit strings (*Figure 4.2.2.1.2-D*).
Command conversion (zOS systems)	Select if this is a connection to a z/OS queue manager, earlier than version 8.
SSL tab	*Figure 4.2.2.1.2-E*
Key repository	Specify the key repository.
SSL certificate key	Specify the SSL certificate key.
Cipher specification	Select the cipher specification from the drop-down menu.
Cryptographic hardware	The applied encryption hardware is noted in the *Cryptographic hardware* field. Click the **Settings** button to specify cryptographic hardware settings (*Figure 4.2.2.1.2-F*).

Figure 4.2.2.1.2-B. Remote Queue Manager Connections – General Tab

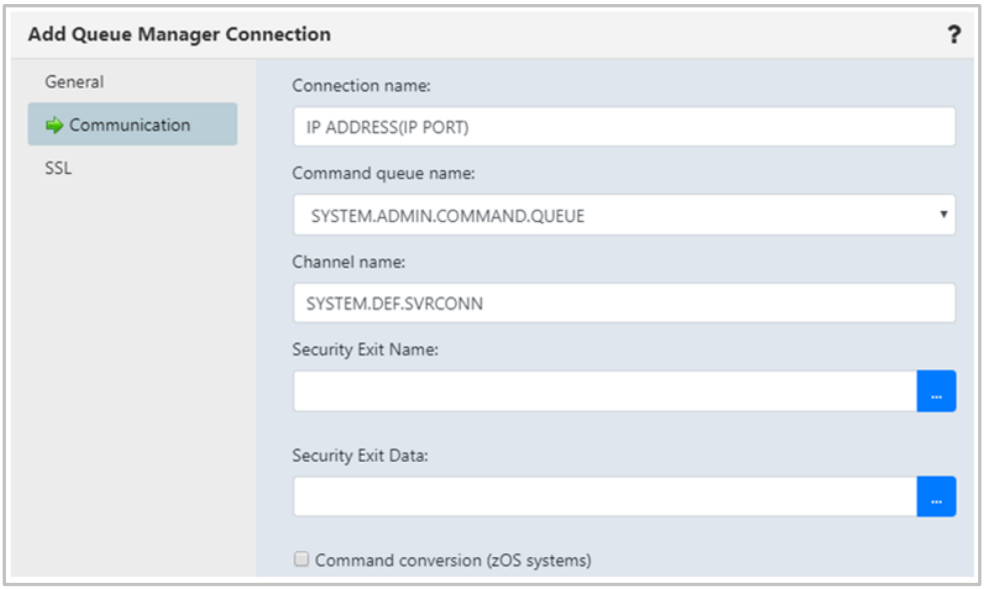

Figure 4.2.2.1.2-C. Remote Queue Manager Connections – Communication Tab

The following window appears after clicking the ellipses button of **Security Exit Name**. Enter a new exit string and click **Add**. Click **Ok** to save changes and continue the creation process.

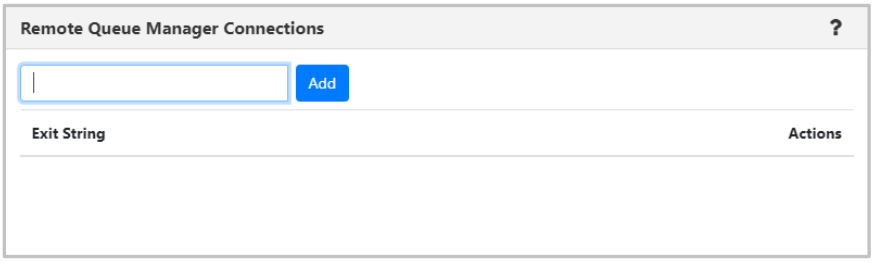

Figure 4.2.2.1.2-D. Remote Queue Manager Connections – Communication Tab Exit Strings

On the SSL tab window, populate the fields as noted in *Table 4.2.2.1.2-A*.

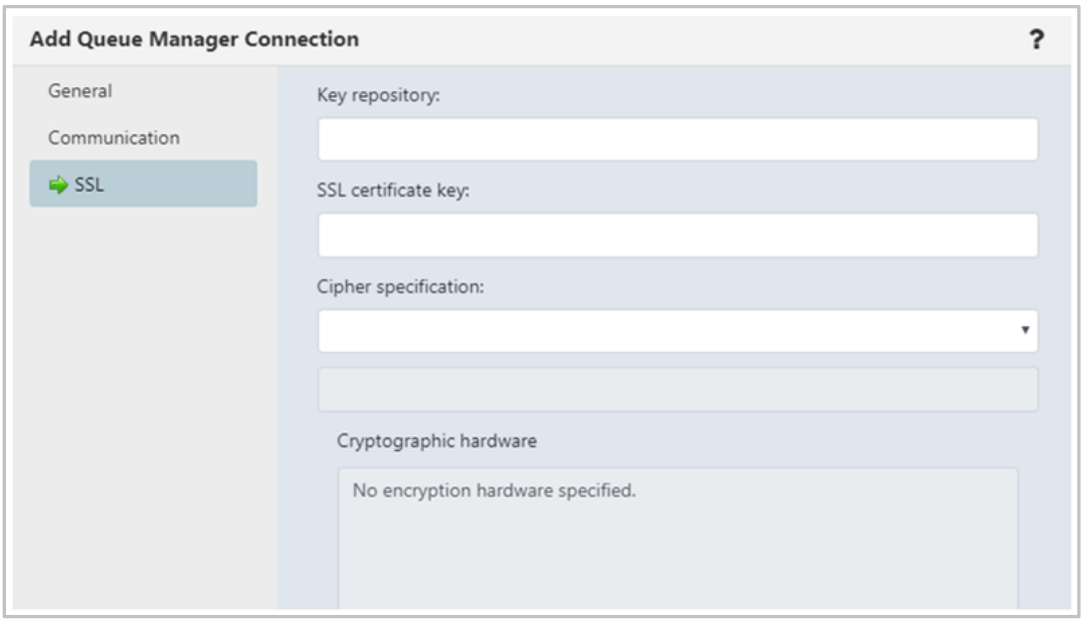

Figure 4.2.2.1.2-E. Remote Queue Manager Connections – SSL Tab

The following window displays after the **Settings** button is clicked. Make your selections and click **Ok**. Back on the **SSL** tab, click **Ok** to save all changes.

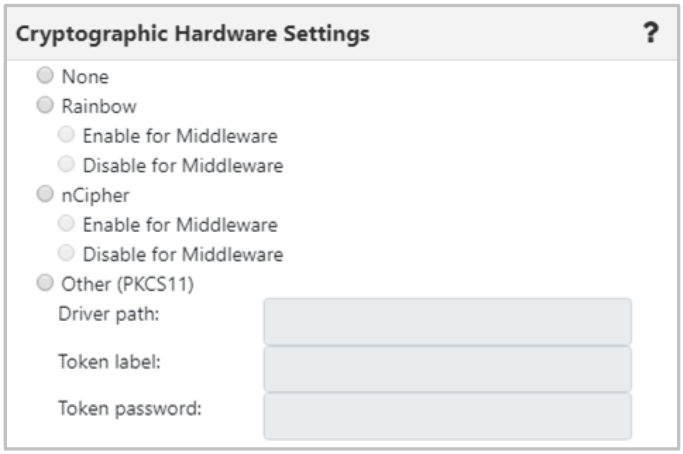

Figure 4.2.2.1.2-F. Remote Queue Manager Connections – Settings

4.2.2.1.3 Create Remote EMS Manager

To create a remote EMS manager connection, select a workgroup server from the Workgroup Server viewlet. From the pop-up menu, select **Create** > **Remote EMS Managers**. The *Remote EMS Connections* window opens.

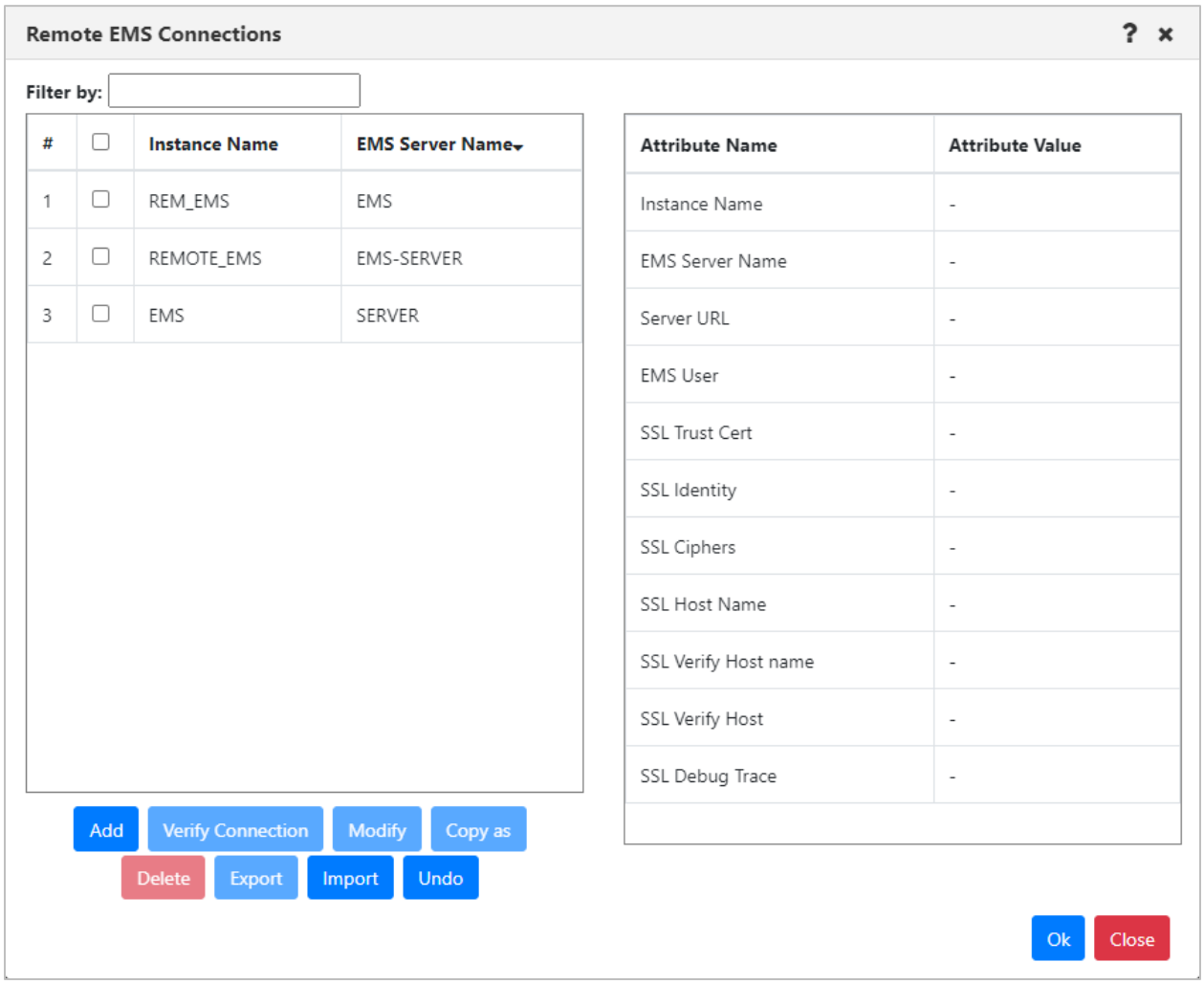

Figure 4.2.2.1.3-A. Remote EMS Connections Window

Click the **Add** button to create the new connection. The *Add EMS Manager Connection* window opens. See the table below for an explanation of this window's settings. After adding a new connection, you can verify it. See Verifying Remote Manager Connections.

To update an existing remote EMS queue manager, select the connection and click Modify (opens the same window as the Add button). To delete a connection, select it and click Delete. To learn how to import and export remote manager definitions, see Importing and Exporting Remote Managers.

NOTE

The **Undo** button may be available in the remote manager connections window immediately after you add, modify, copy, delete, or import a connection. Only the most recent action can be undone.

Table 4.2.2.1.3-A. Add (Change) EMS Manager Connections Window Properties	
Field	**Description**
General Tab	*Figure 4.2.1.1.3-B*
EMS Agent Instance Name (Node)	Enter the name of the EMS agent node the manager will connect to. **REMOTE_EMS** is the default.
EMS Server Name	Enter the EMS server name which will be displayed in an EMS manager viewlet. **EMS-SERVER** is the default.
EMS Server URL	Specify the EMS server URL. This is required. The structure of the EMS server URL is: <protocol>://<*IP address*>:<*port*>, i.e., tcp://172.16.6.48:7222
User ID	Specify the username to connect to the TIBCO EMS instance.
Password	Password is optional.
SSL tab	*Figure 4.2.1.1.3-C*
Trusted Certificate	Specify the full path and file name of the trusted certificate(s). Passed to tibemsadmin as: `-ssl_trusted` *filename*
Client Identity	Specify the full path and file name of the file containing the client certificate, extra issuer certificates (optional) and the private key. Passed to tibemsadmin as: -ssl_identity *filename*
Issuer	Specify the full path and file name of the file containing extra issuer certificate(s) for client-side identity. Passed to tibemsadmin as: `-ssl_issuer` *filename*
Password (PKCS12 password)	Enter the private key or PKCS#12 password if required. Passed to tibemsadmin as: -ssl_password *password*
Key repository	This is the SSL private key. Use the following to pass it to the EMS Administration Tool (tibemsadmin): -ssl_key *filename*
Cipher specification	Select a cipher specification from the drop-down menu. Select **Custom** to enable the **Custom Cipher name** field and enter a custom cipher name.
Vendor	Specify the full path and file name of the file containing extra issuer certificate(s) for client-side identity. Passed to tibemsadmin as:

Table 4.2.2.1.3-A. Add (Change) EMS Manager Connections Window Properties	
Field	**Description**
	`-ssl_issuer` *filename*
Host name	Enter the name expected in the server certificate sent by the host. Passed to tibemsadmin as: -ssl_hostname *name*
SSL Options	*Figure 4.2.1.1.3-D*
Verify Host Name	Enables/disables whether EMS will verify the SSL hostname when connecting. Passed to tibemsadmin as: -ssl_noverifyhostname
Verify Host	Used when connecting to EMS.
SSL Trace	Show loaded certificates and certificates sent by the host. Passed to tibemsadmin as: -ssl_trace
SSL Debug Trace	Show additional tracing, which is useful for debugging. Passed to tibemsadmin as: -ssl_debug_trace.

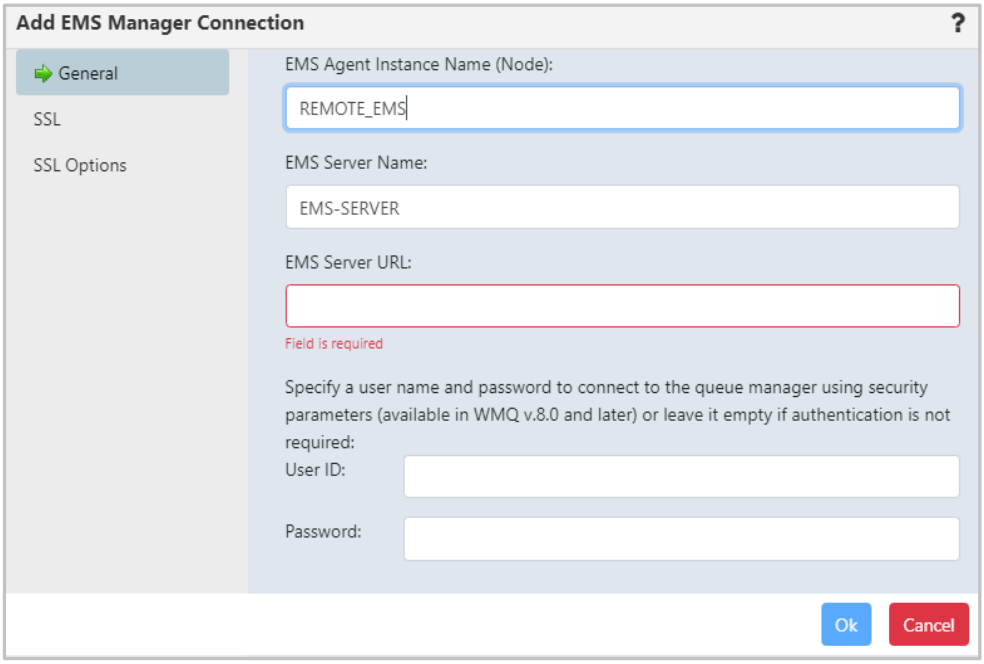

Figure 4.2.2.1.3-B. Add EMS Manager Connection Window – General Tab

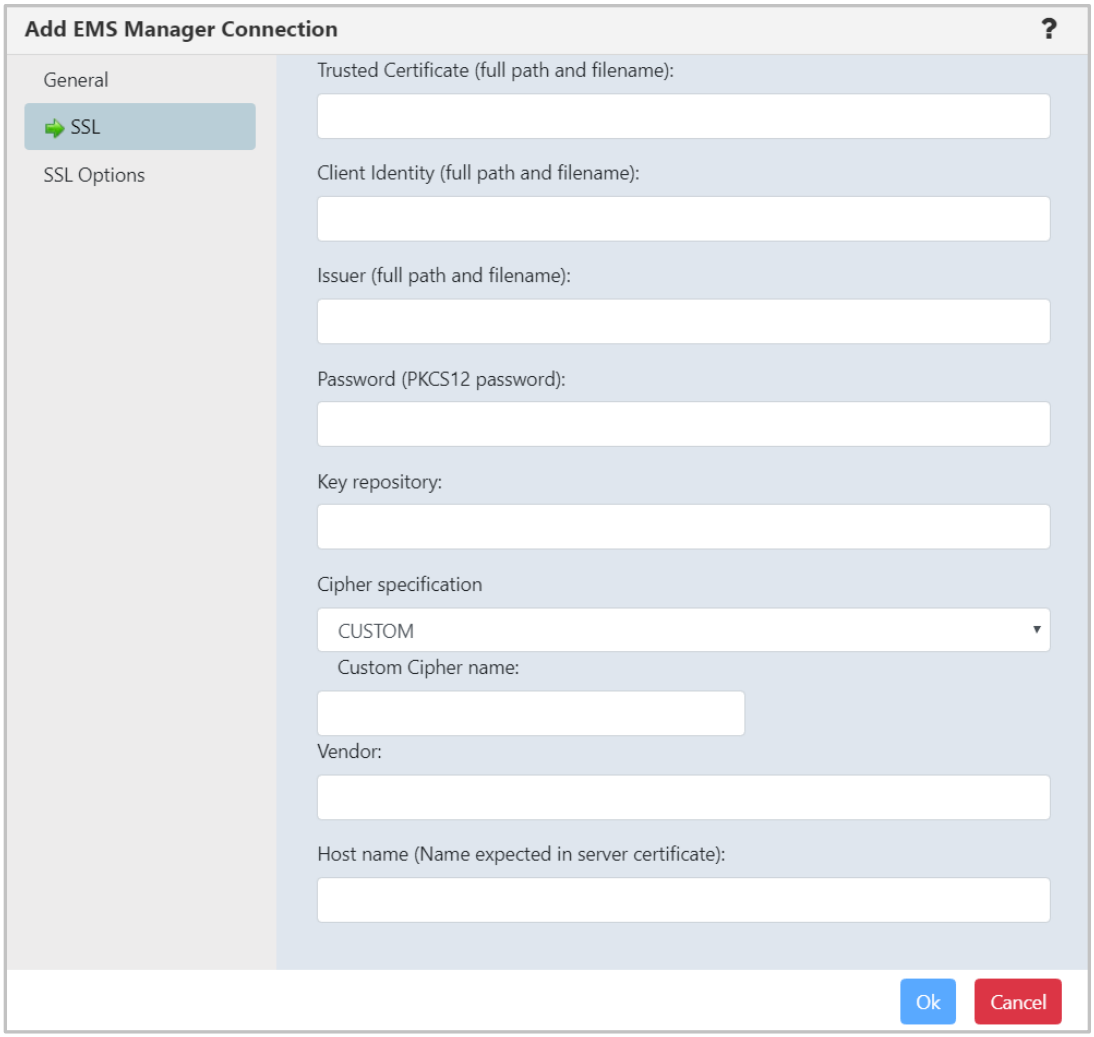

Figure 4.2.2.1.3-C. Add EMS Manager Connection Window – SSL Tab

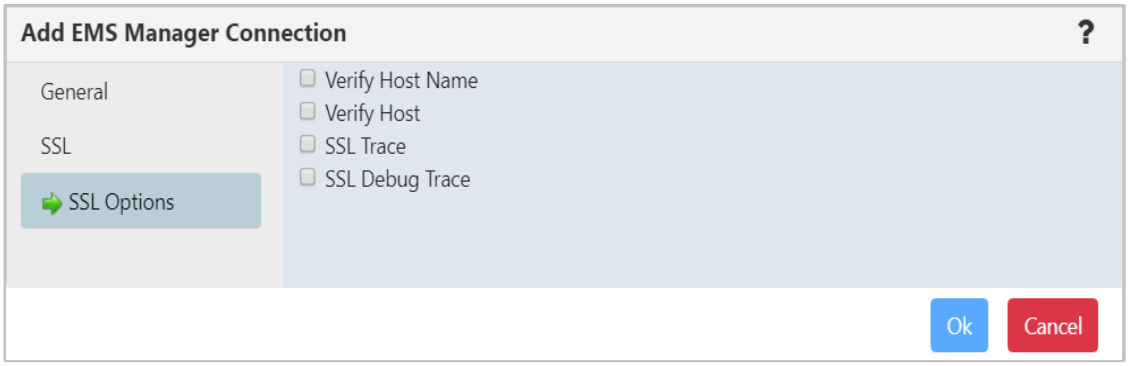

Figure 4.2.2.1.3-D. Add EMS Manager Connection Window – SSL Options Tab

4.2.2.1.4 Create Remote Kafka Manager

You have the option of creating a new remote Kafka manager by importing its properties. See Import Remote Kafka Manager Properties for New Connections for more information.

To create a remote Kafka manager connection, select a workgroup server from the Workgroup Server viewlet. From the pop-up menu, select **Create** > **Remote Kafka Managers**.

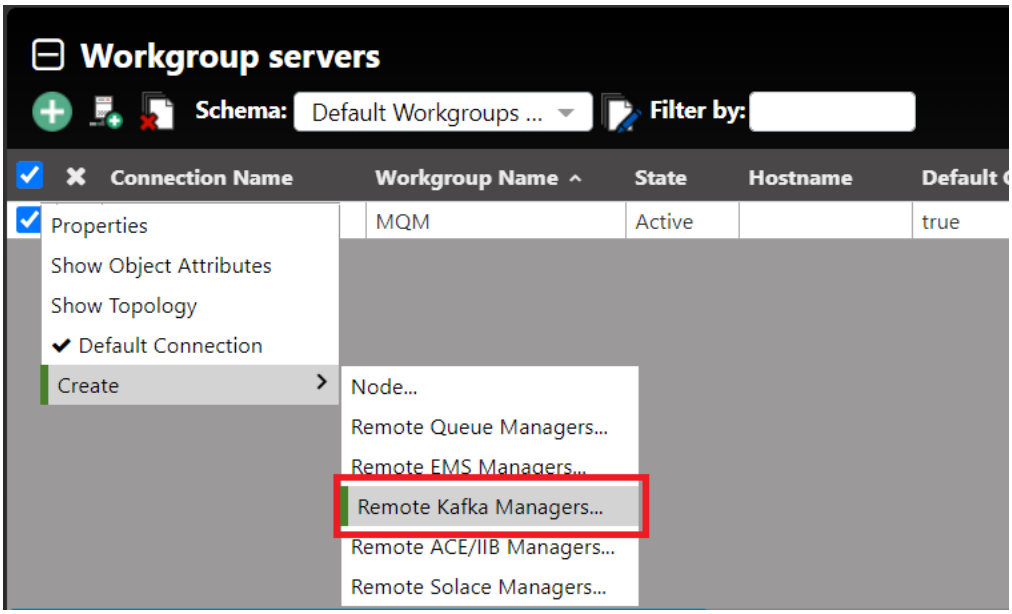

Figure 4.2.2.1.4-A. Add Remote Kafka Managers Option

The *Remote Kafka Manager Connections* window opens, where you can add a new Kafka connection manager. After adding a new connection, you can verify it. See Verifying Remote Manager Connections. You can also edit and delete existing connections from this screen. To learn how to import and export remote manager definitions, see Importing and Exporting Remote Managers.

NOTE

The **Undo** button may be available in the remote manager connections window immediately after you add, modify, copy, delete, or import a connection. Only the most recent action can be undone.

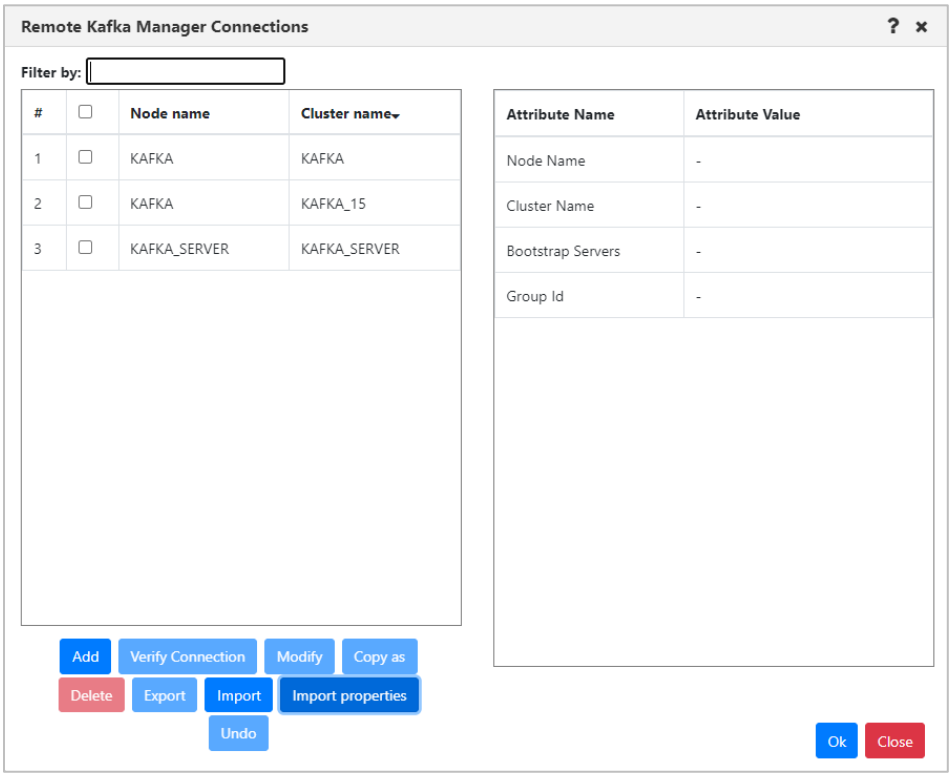

Figure 4.2.2.1.4-B. Remote Kafka Manager Connections Screen

Click **Add**. The *Add Kafka Manager Connection* window opens.

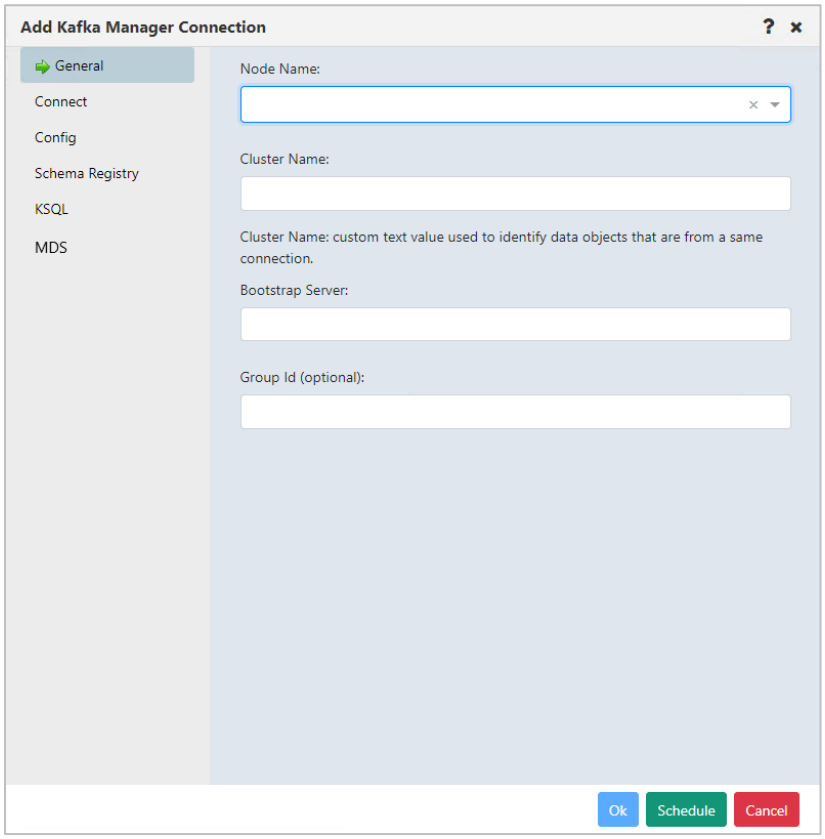

Figure 4.2.2.1.4-C. Add Kafka Manager Connection

Enter the configurations for the new Kafka connection manager. (See the following section for information about SSL connection configuration.)

Click **Ok**.

SSL Connections

To establish an SSL connection to the Kafka bootstrap server, you can use the Kafka Manager Connection Config tab. On this tab, you can enter the same configuration parameters that you would in a Kafka client application properties file. (For information on configuring connections using the nsqcmkafka.properties file, refer to the Connection Manager for Kafka chapter in the *Components Installation Guide*.)

Due to the large number of possible Kafka configuration options, the configuration tab is provided to allow you to enter the specific parameters that are relevant to your environment.

To configure parameters, enter each parameter name in the Configuration Entry field. Enter each parameter value in the Value field. Configuration value fields include icons for encrypting values and for showing unencrypted values. When the value is hidden, or masked, the value is treated as a password and is encrypted during transmission to Kafka, then decrypted so Kafka can read it.

- The encrypt icon encrypts and masks the Configuration Value, as shown here:
- The show unencrypted icon shows the full value. See the important note below.

IMPORTANT! After you use the encrypt icon to encrypt a plain (unencrypted) value and save the connection, you will no longer be able to view the unencrypted value.

The configuration tab shown below is an example of parameters for setting up secure connections with SASL/SSL. These are only examples and do not reflect the actual parameters that would be needed in a specific customer environment.

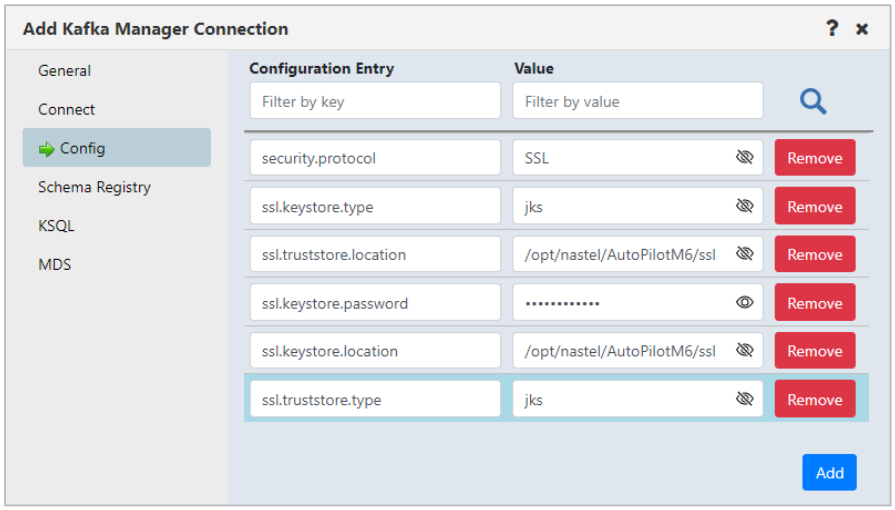

Figure 4.2.2.1.4-D. Remote Kafka Manager Connections Screen

Table 4.2.2.1.4-A shows the values from the example in text form.

Table 4.2.2.1.4-A. Example of SASL/SSL Connection Parameters

Field	Description
security.protocol	SSL
ssl.keystore.type	jks
ssl.truststore.location	/opt/nastel/AutoPilotM6/ssl
ssl.keystore.password	
ssl.keystore.location	/opt/nastel/AutoPilotM6/ssl
ssl.truststore.type	jks

Confluent Platform Metadata Service (MDS) Setup

The MDS tab on the Remote Manager Connection dialog allows you to add multiple Kafka MDS nodes in one remote Kafka instance. See Figure 4.2.2.1.4-E.

Click **Add** to add a new MDS node. See Figure 4.2.2.1.4-F.

After an MDS node is set up, you can create an *MDS viewlet*. See Kafka MDS Viewlets.

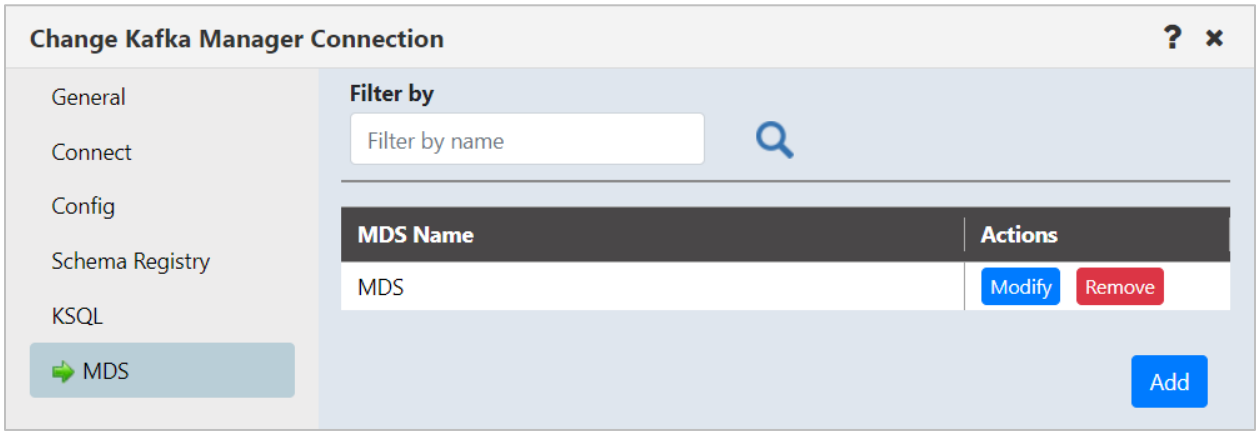

Figure 4.2.2.1.4-E. Metadata Service (MDS) Setup

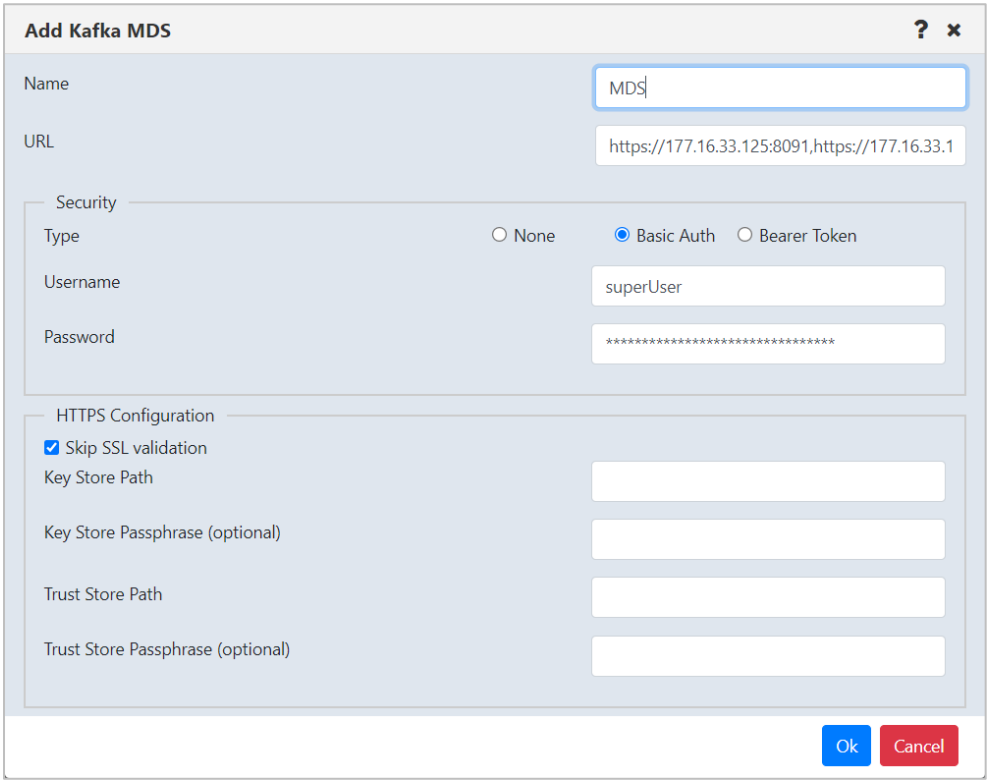

Figure 4.2.2.1.4-F. Add Kafka MDS

4.2.2.1.5 Create Remote ACE or IIB Manager

To create a remote ACE or IIB manager connection, select a workgroup server in the Workgroup Server viewlet. From the pop-up menu, select **Create** > **Remote ACE/IIB Managers**.

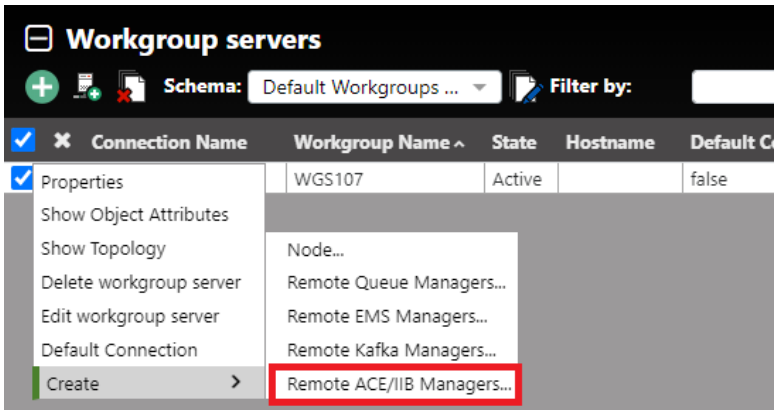

Figure 4.2.2.1.5-A. Create > Remote ACE/IIB Managers

The *Remote IIB/ACE Manager Connections* window opens where you can add a new IIB or ACE connection manager. You can also edit and delete existing connections from this screen. To learn how to import and export remote manager definitions, see Importing and Exporting Remote Managers.

NOTE

The **Undo** button may be available in the remote manager connections window immediately after you add, modify, copy, delete, or import a connection. Only the most recent action can be undone.

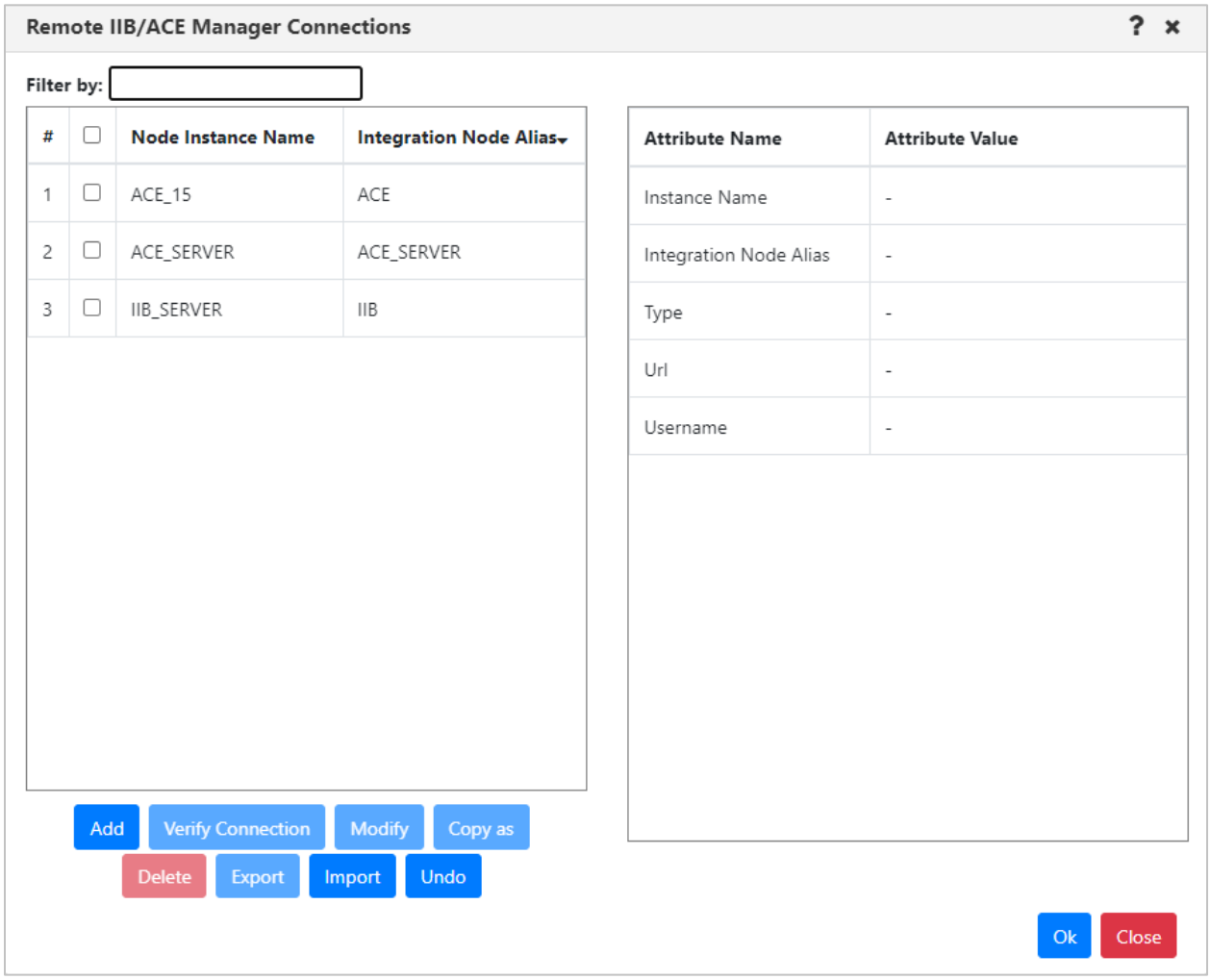

Figure 4.2.2.1.5-B. Remote IIB/ACE Manager Connections

Click the **Add** button. The *Change IIB/ACE Manager Connection* window opens. Enter the configurations for the new IIB or ACE connection manager on both the **General** and **Key** tabs. Click **Ok** when finished. After adding a new connection, you can verify it. See Verifying Remote Manager Connections.

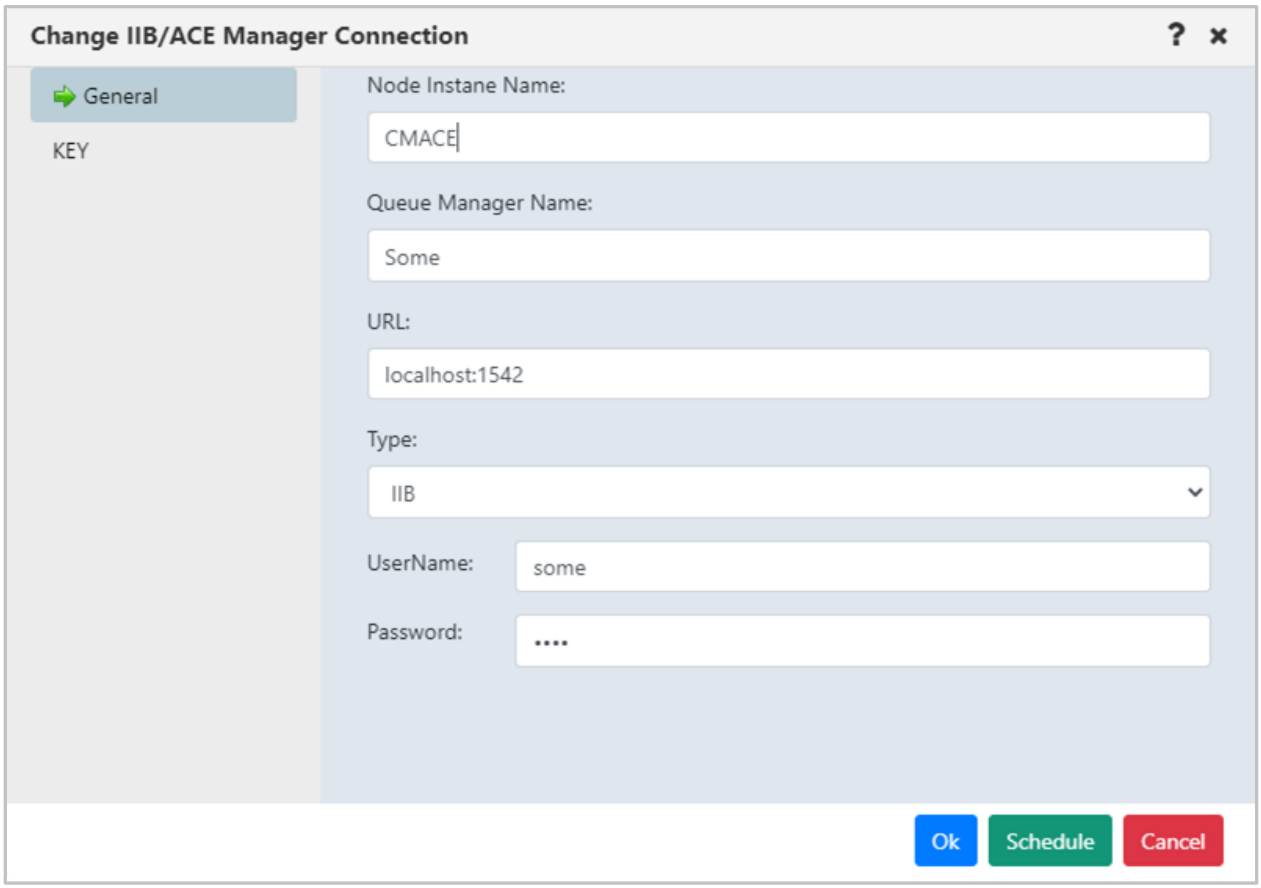

Figure 4.2.2.1.5-C. Change IIB/ACE Manager Connections

4.2.2.1.6 Create Remote Solace Manager

To create a remote Solace manager connection, select a workgroup server within the Workgroup Server viewlet. From the pop-up menu, select **Create** > **Remote Solace Managers**.

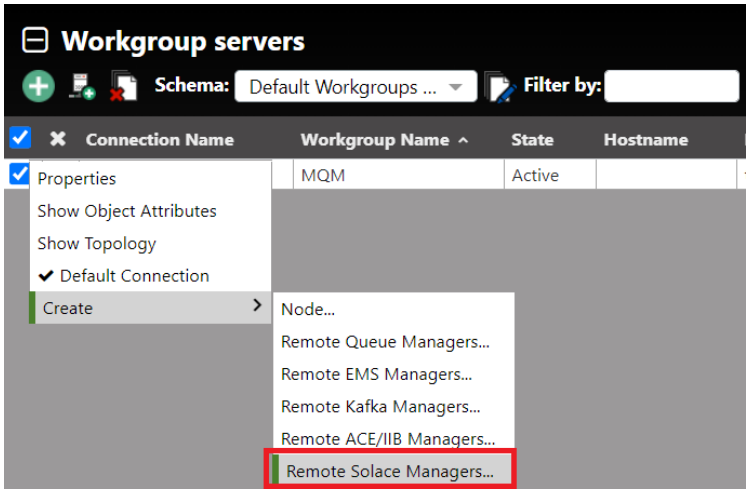

Figure 4.2.2.1.6-A. Add a Remote Solace Manager

The *Remote Solace Manager Connections* window opens.

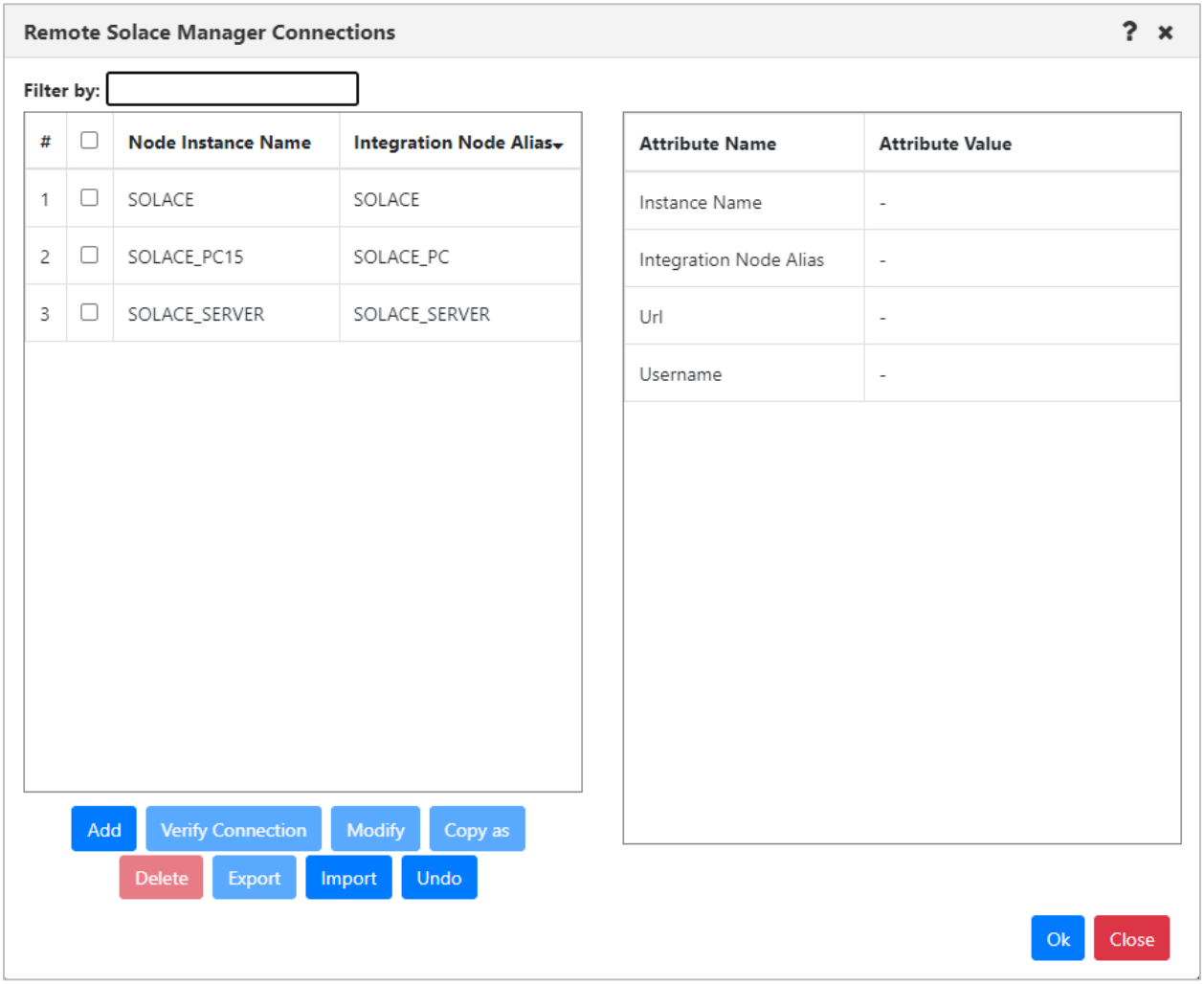

Figure 4.2.2.1.6-B Remote Solace Manager Connections

Click the **Add** button to create the new connection. The *Add Solace Manager Connection* window opens. Enter the configurations for the new Solace connection manager on both the **General** and **Key** tabs. Click **Ok** when finished. After adding a new connection, you can verify it. See Verifying Remote Manager Connections. You can also modify or delete existing connections. To learn how to import and export remote manager definitions, see Importing and Exporting Remote Managers.

NOTE

The **Undo** button may be available in the remote manager connections window immediately after you add, modify, copy, delete, or import a connection. Only the most recent action can be undone.

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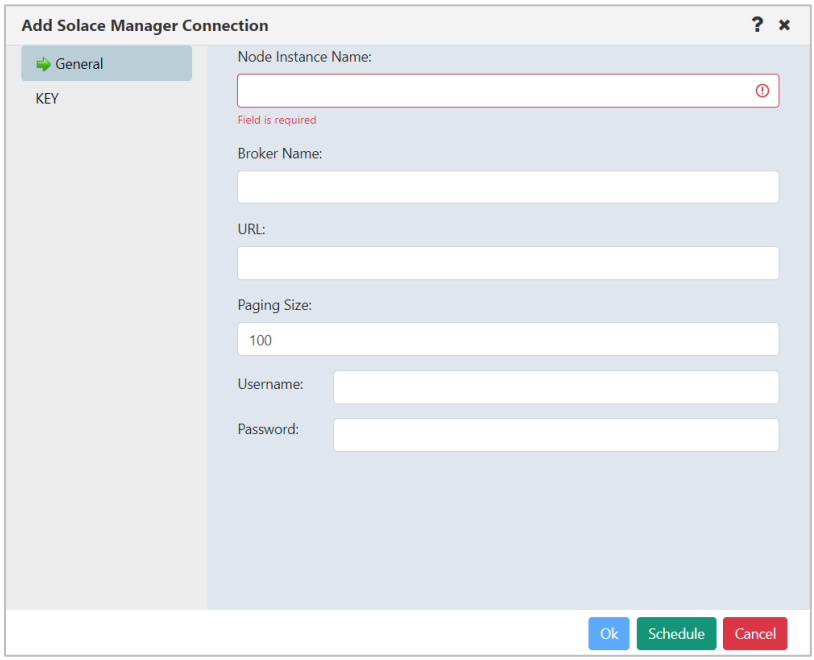

Figure 4.2.2.1.6-C Add Solace Manager Connection

4.2.2.1.7 Create RabbitMQ Remote Manager

To create a remote Rabbit MQ manager connection, select a workgroup server within the Workgroup Server viewlet. From the pop-up menu, select **Create > Remote Rabbit MQ Managers**. The *Remote Rabbit MQ Manager Connections* window opens where you can add a new Rabbit MQ connection manager.

Click the **Add** button. The *Add Rabbit MQ Manager Connection* dialog opens. Enter the configurations for the new Rabbit MQ connection manager.

On the **SSL** tab, configure SSL security (Trust Store and Key Store paths and passwords). For meshIQ Cloud users, in the **Trust Store Path** field on the **SSL** tab, enter the path to the uploaded certificate file, as shown on the **Certificates** tab of your meshIQ Cloud subscription page. On the **AMQP** tab, you can add AMQP protocol configurations. Click **Ok** when finished. After adding a new connection, you can verify it. See Verifying Remote Manager Connections.

To learn how to import and export remote manager definitions instead of entering them manually, see Importing and Exporting Remote Managers***Error! Not a valid bookmark self-reference.***.

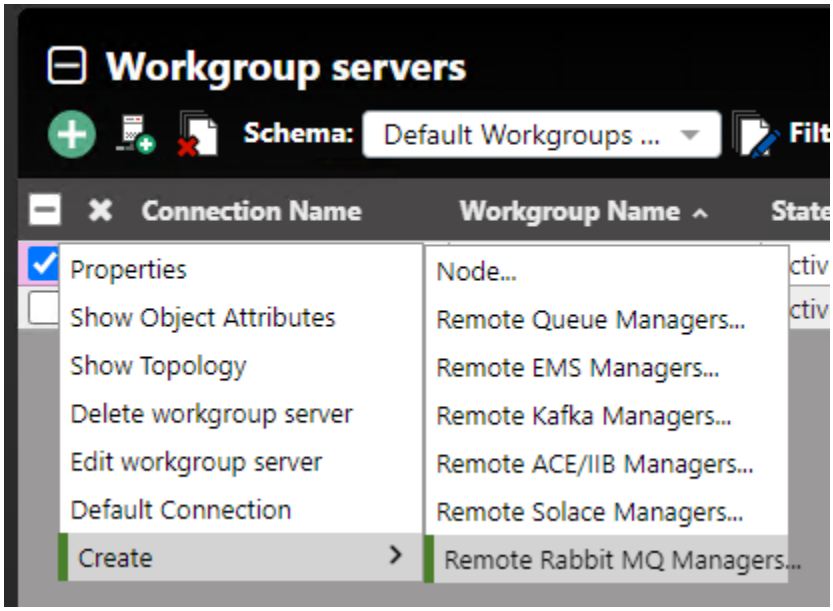

Figure 4.2.2.1.7-A. Add a Remote RabbitMQ Manager

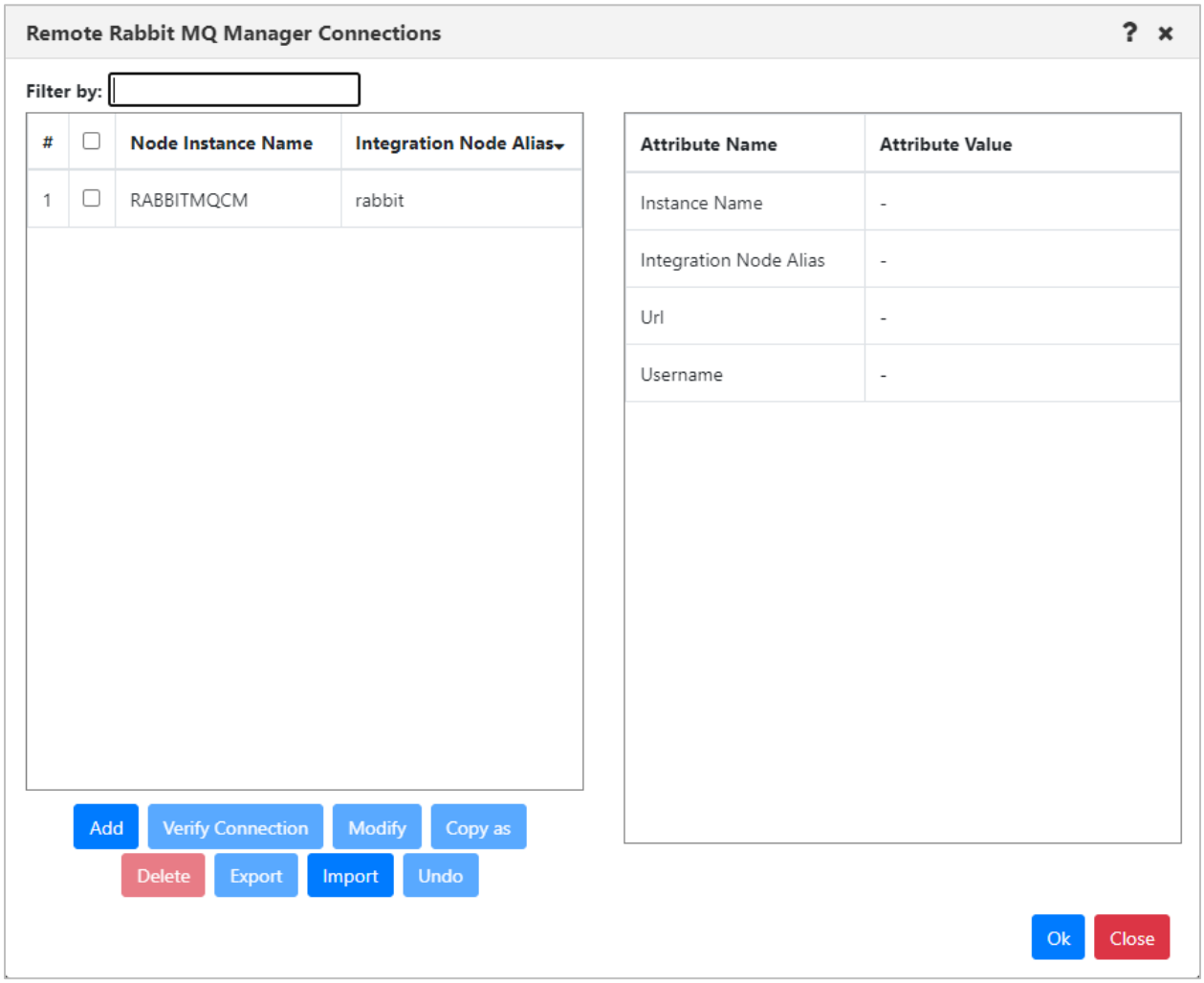

Figure 4.2.2.1.7-B. Remote RabbitMQ Manager Connections

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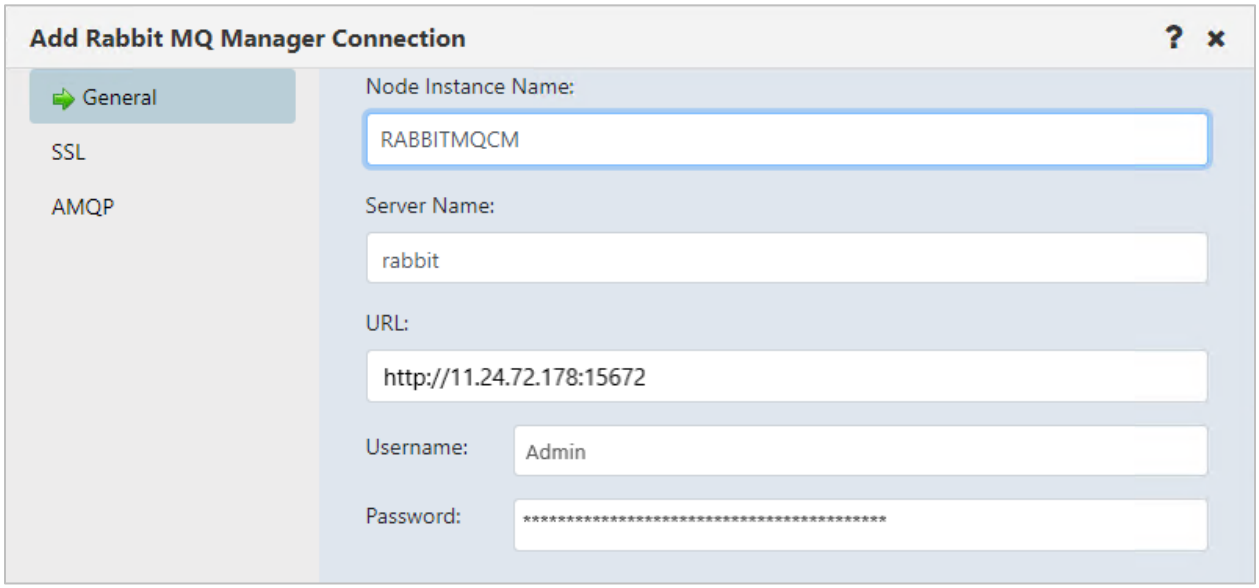


Figure 4.2.2.1.7-C. Add RabbitMQ Manager Connection

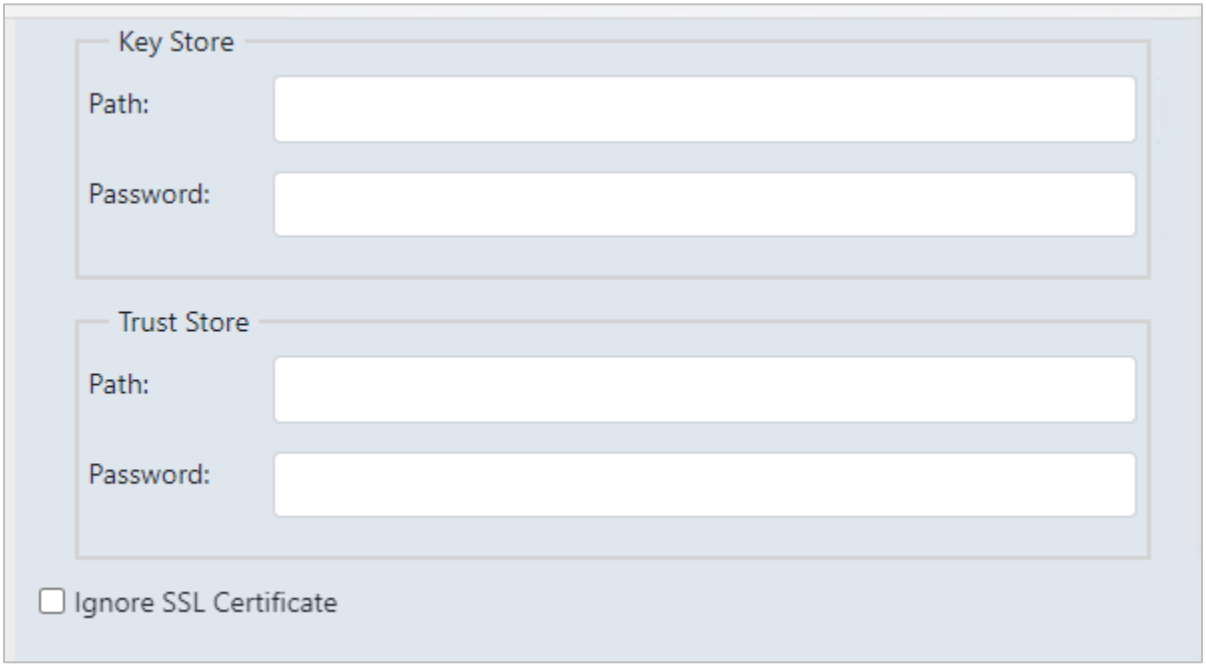


Figure 4.2.2.1.7-D. RabbitMQ Connection SSL Tab

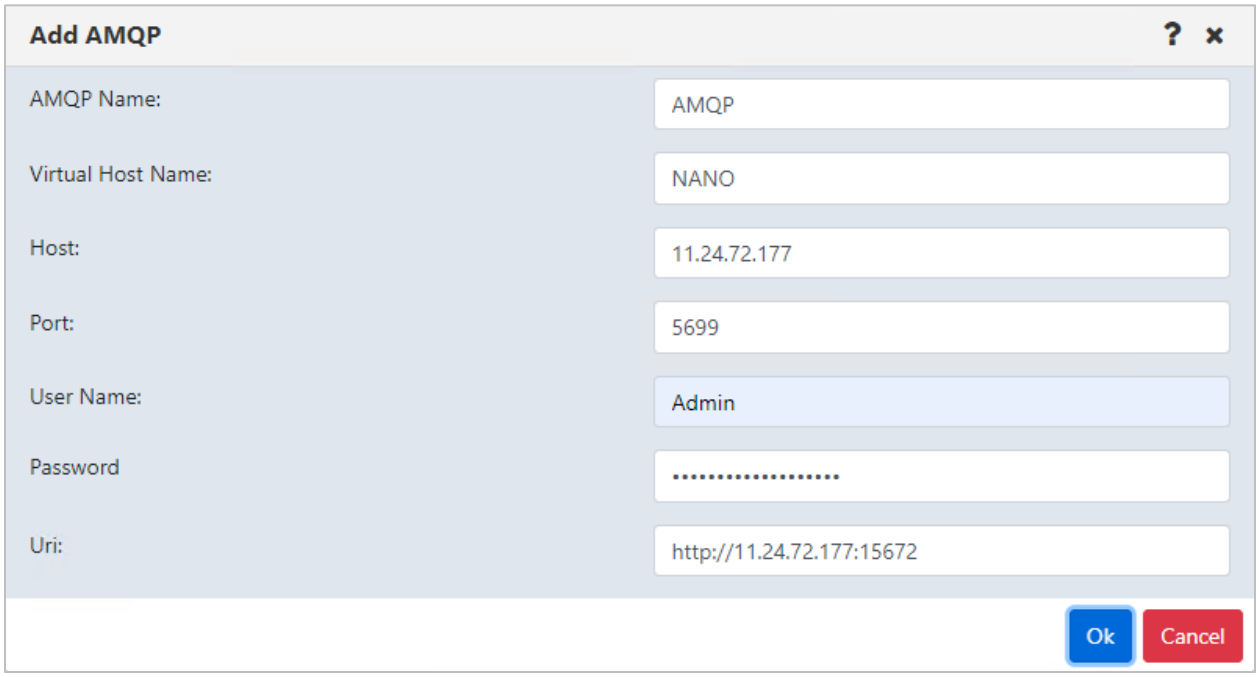


Figure 4.2.2.1.7-E. RabbitMQ Connection AMQP Tab

4.2.2.1.8 Importing and Exporting Remote Managers

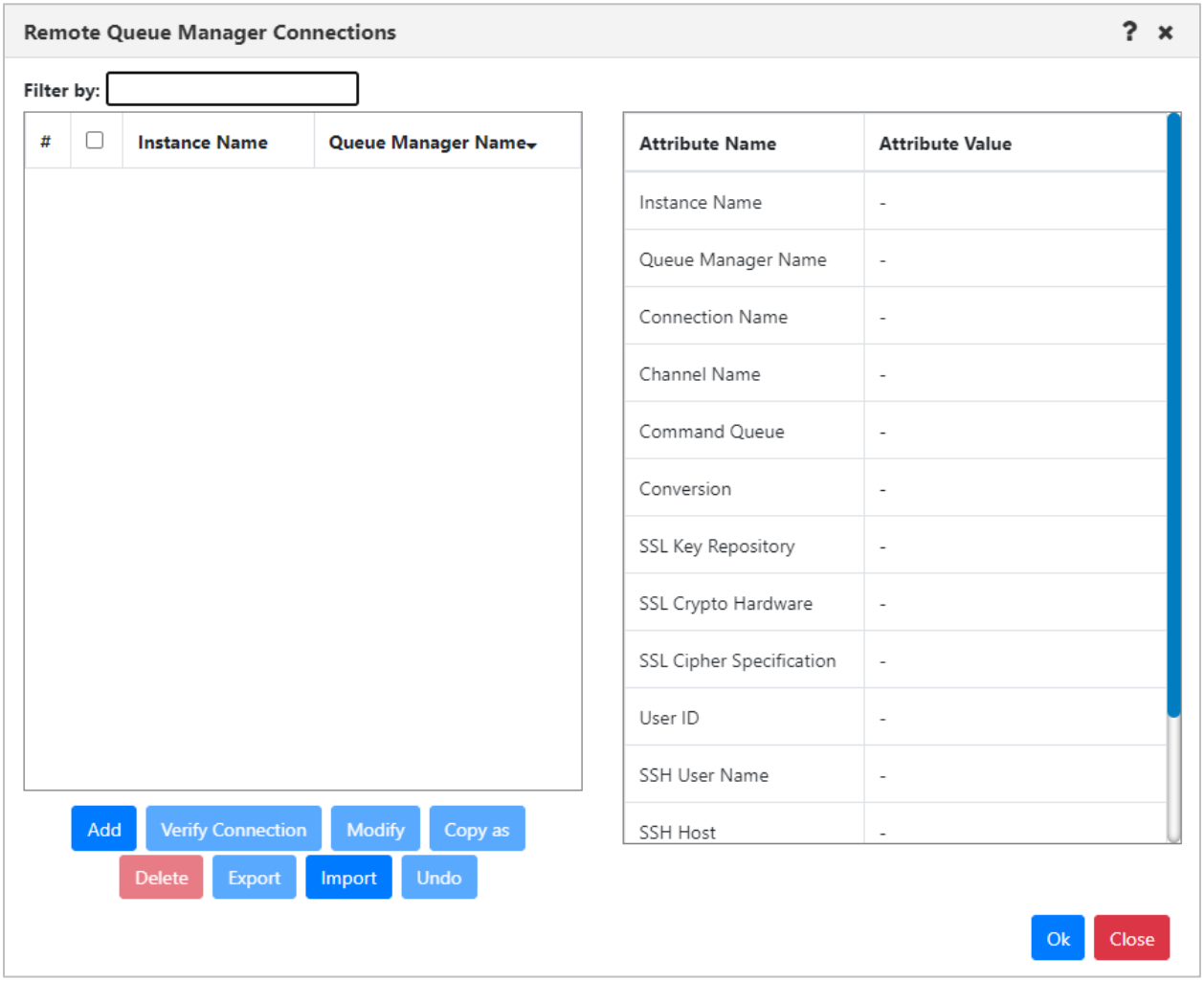
You can export remote IBM MQ, TIBCO EMS, Kafka, ACE/IIB, Solace, and RabbitMQ connections to allow them to be imported later as needed. Consider using exporting and importing connections as a way to pass connections between people or make them available for new users.

Remote manager configurations are imported and exported from the remote manager connections window, in the form of .json files.

4.2.2.1.8.1 Import remote manager configurations

1. From the workgroup server's pop-up menu, select **Create** > **Remote Queue Managers**. The *Remote Queue Manager Connections* window opens. The name of the menu option and window vary based on the product (IBM, Kafka, TIBCO EMS,

IIB/ACE, Solace, or RabbitMQ).



2. Click **Import**. The Import Remote Queue Manager Connections dialog opens.

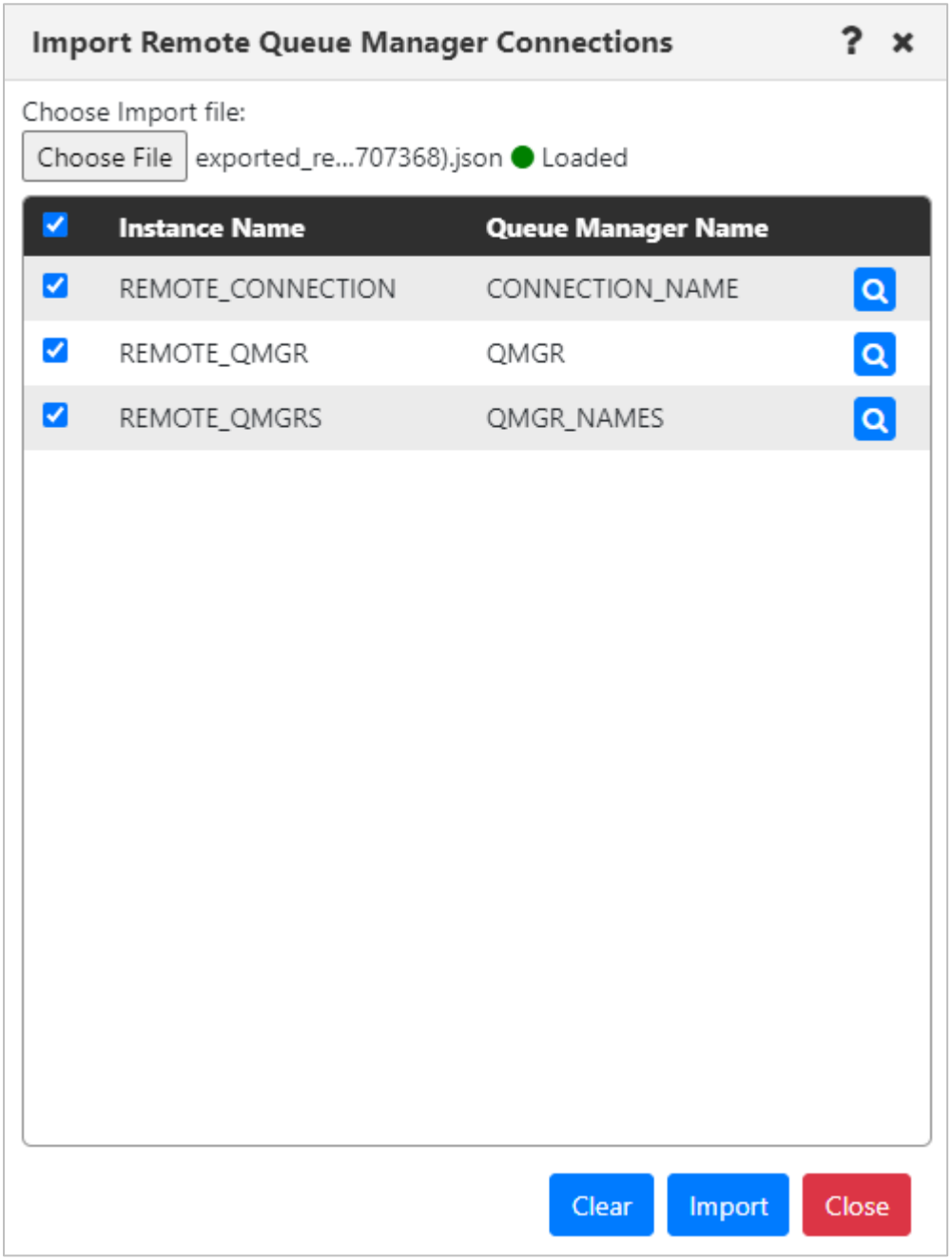
3. Click **Choose File**.

NOTE

Import files must have the .json file name extension. You must import a remote manager definition file for the product that matches your selection on the workgroup server's pop-up menu (IBM, Kafka, TIBCO EMS, IIB/ACE, or Solace).

4. Navigate to the .json file from which you want to import remote manager definitions. Double-click the file, or click it once and click **Open**. The file name is included on the dialog, and the Instance Name and Queue Manager Name for each

remote manager in the file are listed.



5. Verify the managers that you want to import. You can click **Clear** to clear all selections, or select and clear checkboxes individually.

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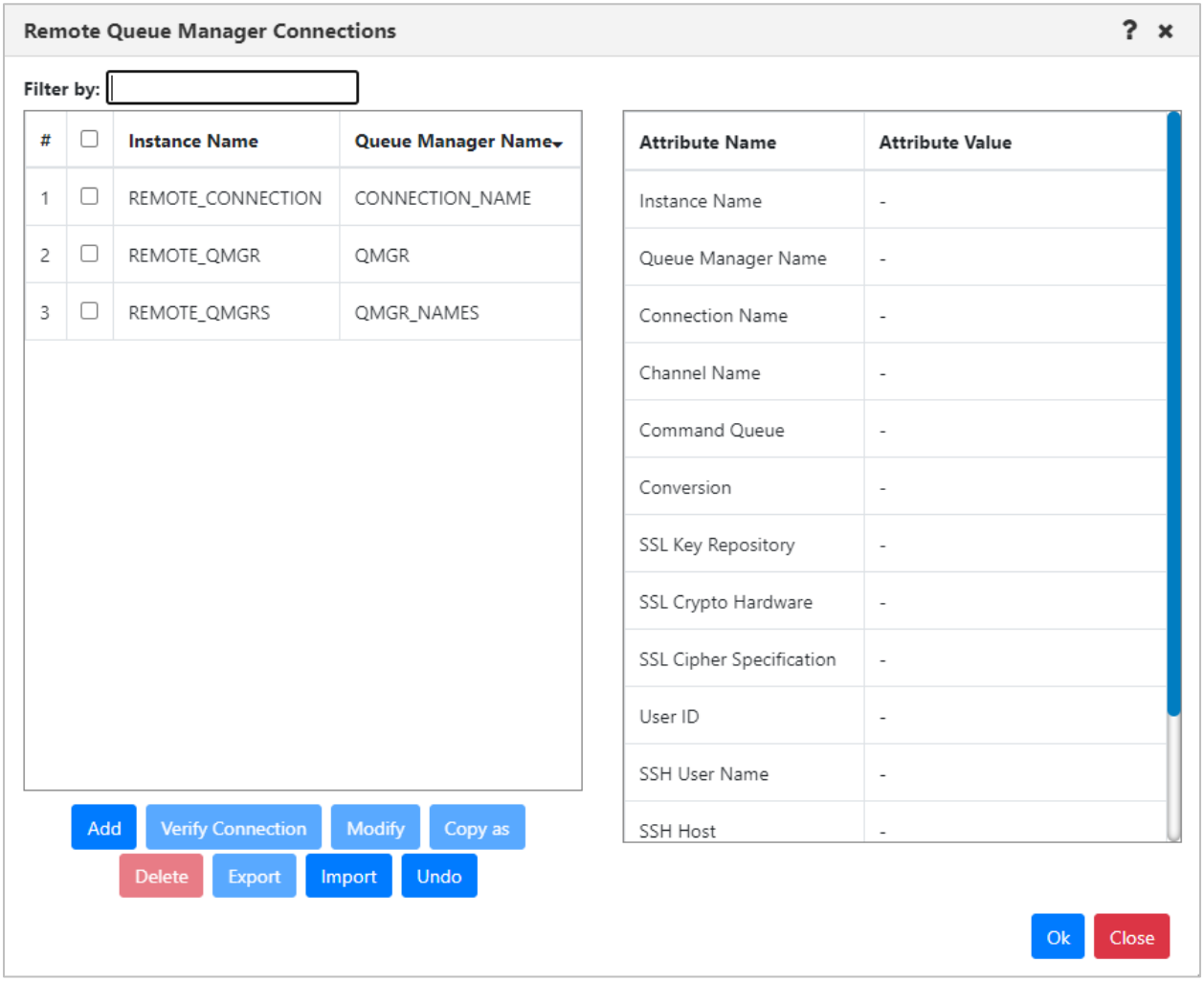
6. Click **Import** to import all selected managers. The imported records are displayed on the remote managers dialog:

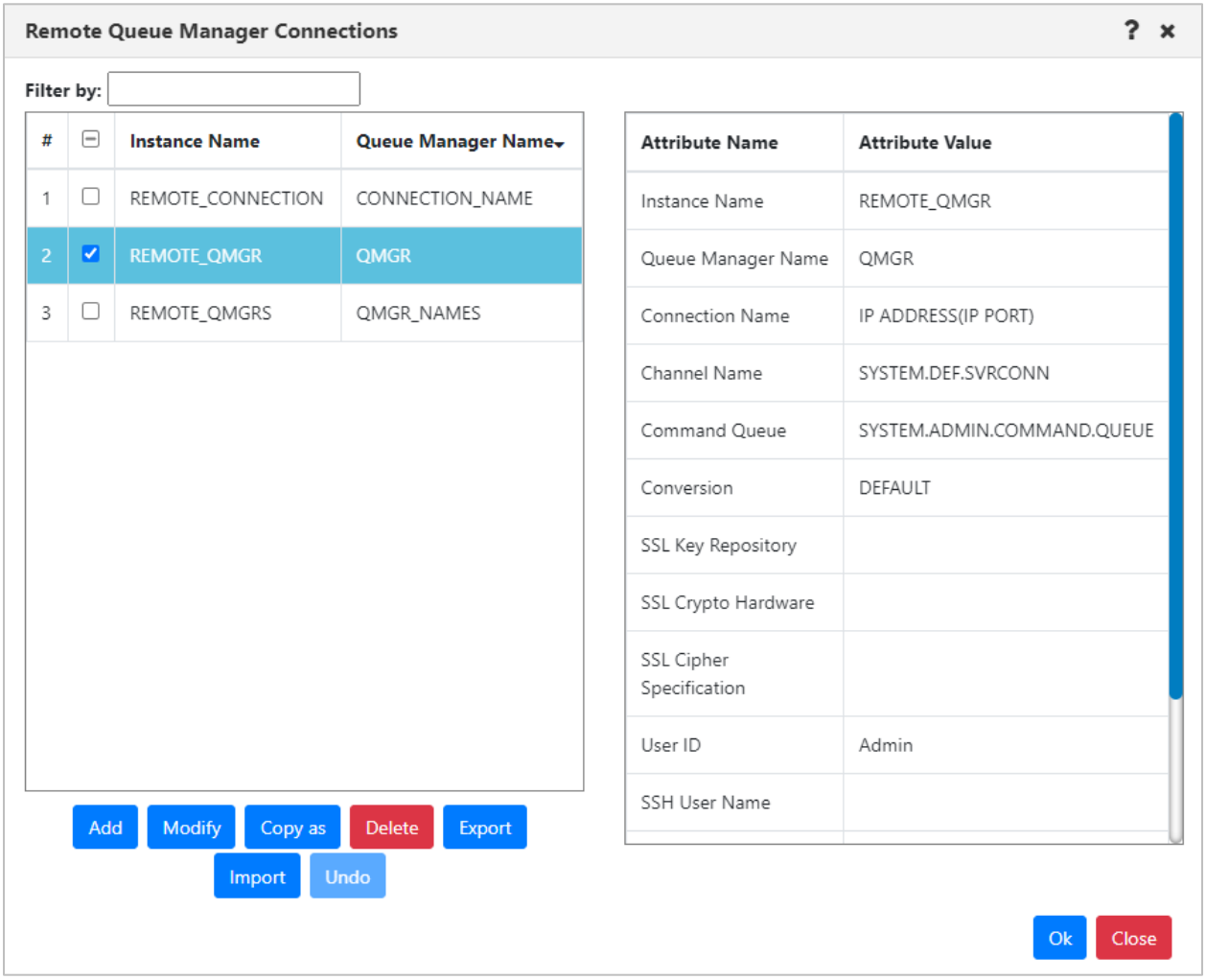


7. Click **OK** to close the window and return to the Workspace dashboard. You can also reverse the import process by clicking **Undo**.

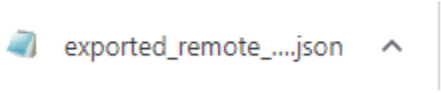
4.2.2.1.8.2 Export remote manager configurations

1. From the workgroup server's pop-up menu, select **Create** > **Remote Queue Managers**. The *Remote Queue Manager Connections* window opens. The name of the menu option and window vary based on the product (IBM, Kafka, TIBCO EMS, IIB/ACE, or Solace).

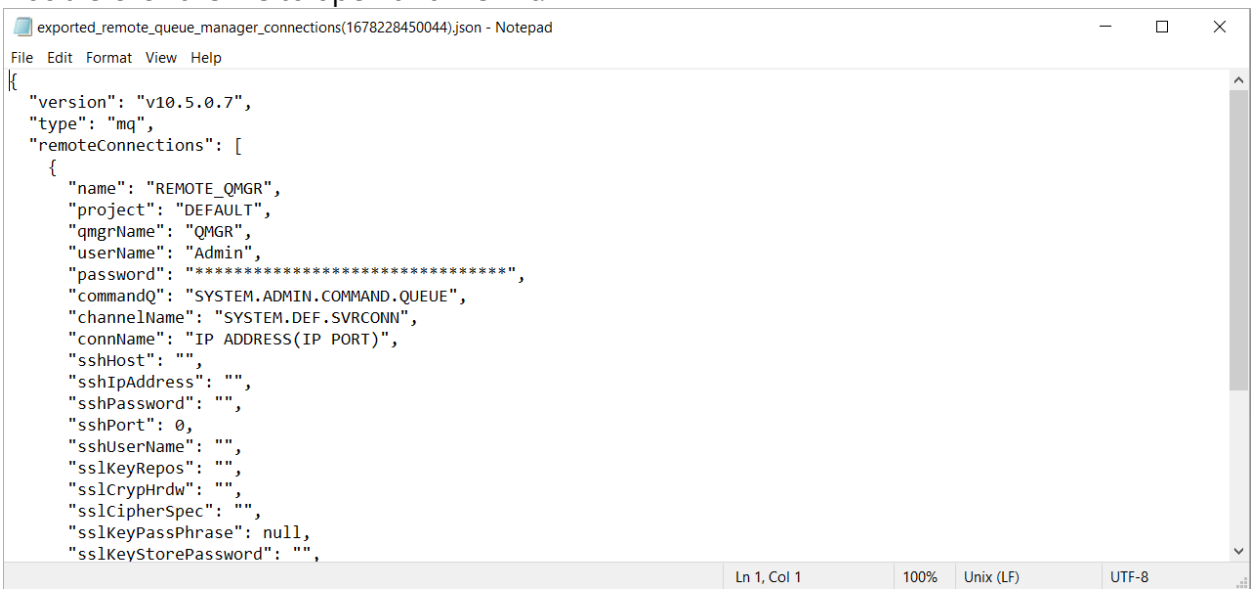
2. Select the remote manager or managers that you want to export the definition of.



3. Click **Export**.
4. The export file is downloaded through your browser. It is named exported_remote_queue_manager_connections(<*unique identifier*>).json.



5. Double-click the file to open and view it:



4.2.2.1.8.3 Import Remote Kafka Manager Properties for New Connections

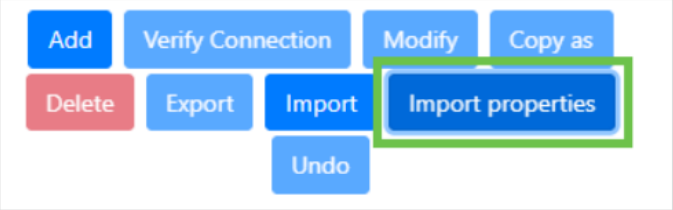
You can import remote Kafka manager properties for new connections, instead of entering them manually. Refer to the table below for mapped properties.

Table 4.2.2.1.8.3. Mapped Kafka Properties

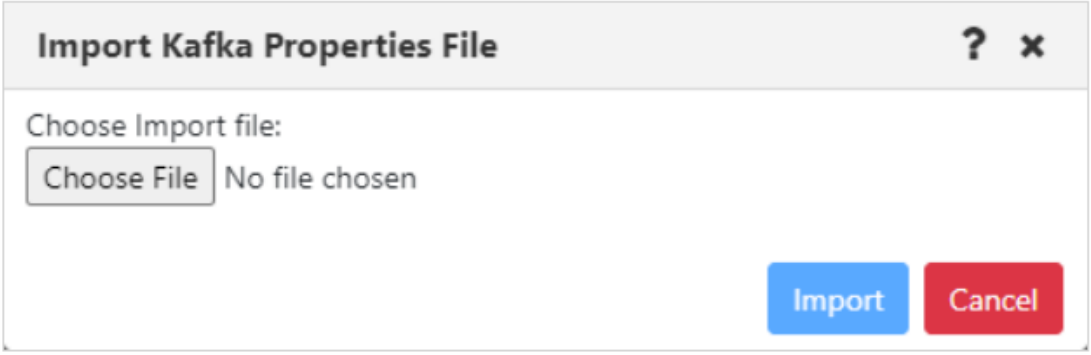
Parameter in Add Kafka Manager Connection	**Parameter in .properties file** *(If multiple names for the same parameter are supported, they are shown separated by commas)*
Node Name	'node.name'
Cluster Name	'kafka.cluster.name', 'cluster.name'
Bootstrap Server	'kafka.bootstrap.servers', 'bootstrap.servers'
Group Id	'kafka.group.id', 'group.id'
Schema Name	'kafka.schema_registry.name', 'schema_registry.name'
Schema URL	'kafka.schema_registry.url', 'schema_registry.url'
Schema ('schema_registry'), Connect ('connect'), KSQL ('ksql') and MDS ('mds')	These four share the same structure. In the syntax example below, replace the "configType" placeholder with the appropriate value: 'schema_registry', 'schema.registry', 'schema'. *If more than one variant is present, the order of precedence is schema_registry > schema.registry > schema) 'connect'* 'ksql'

	'mds' **Syntax example:** Name: 'kafka."configType".url', '"configType".url' URL: 'kafka."configType".url', '"configType".url' When there is more than one Connect, KSQL or MDS instance, differentiate them by assigning a sequential number (N) to each instance: configType_N For example: kafka.connect_1.name=Connector1 kafka.connect_1.url=*http://172.16.6.44:8382/* kafka.connect_2.name=Connector2 kafka.connect_2.url=*http://172.16.6.45:8382/*

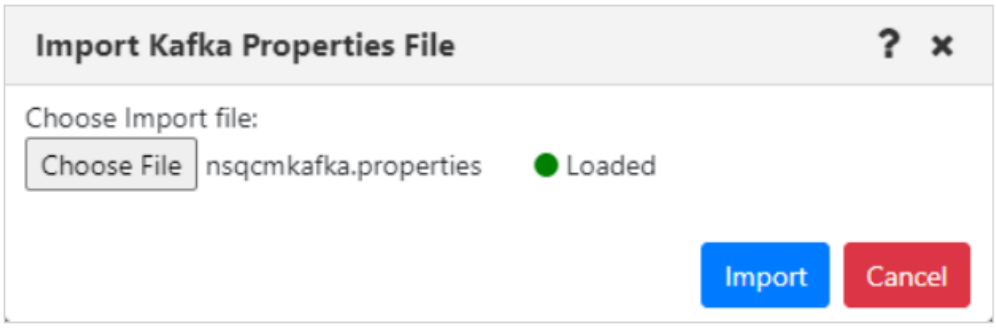
1. From the Remote Kafka Manager Connections dialog, click **Import properties**.



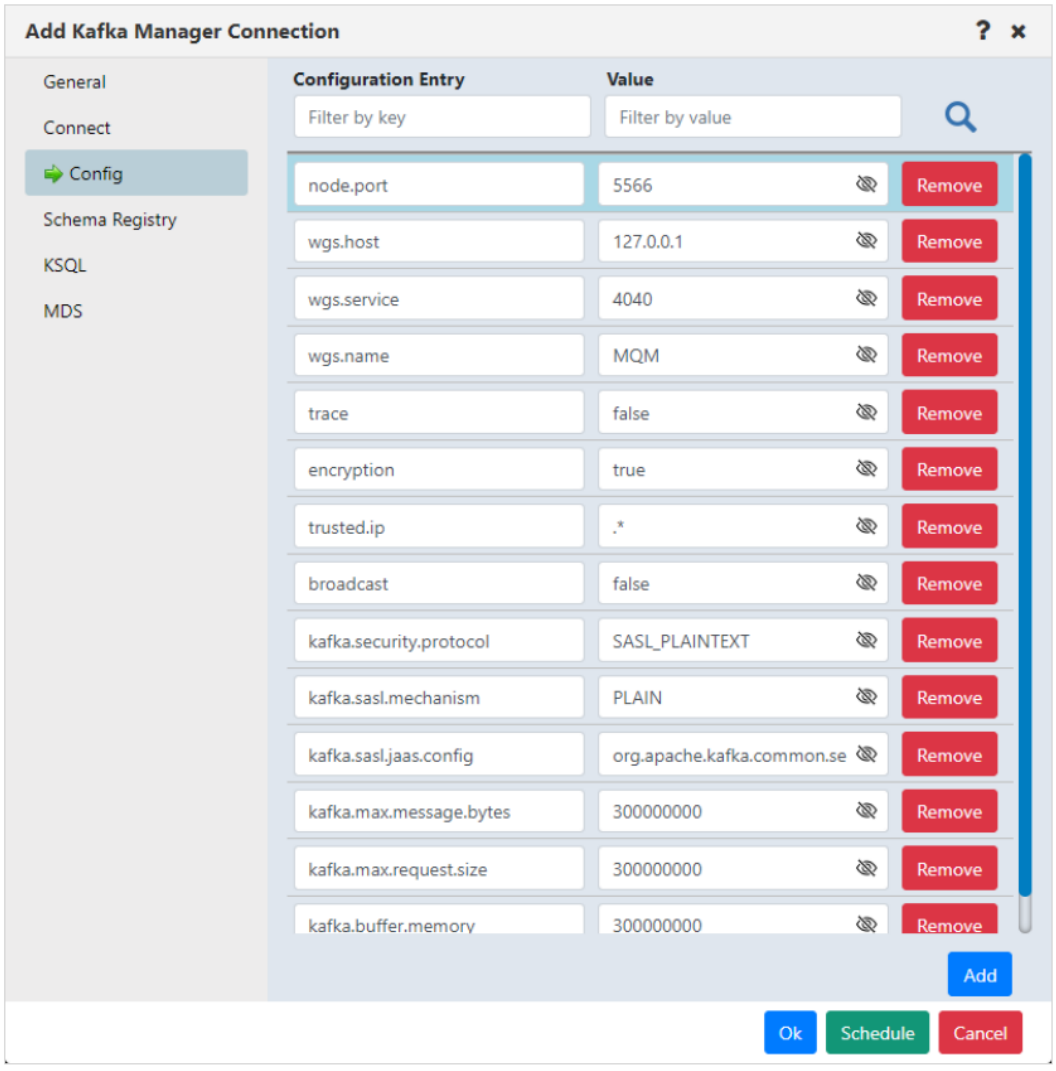
The *Import Kafka Properties File* dialog opens.



2. Choose a file:



3. Click **Import**. The Add Kafka Manager Connection dialog opens with the imported properties filled in where applicable. An example of the Config tab is shown below.



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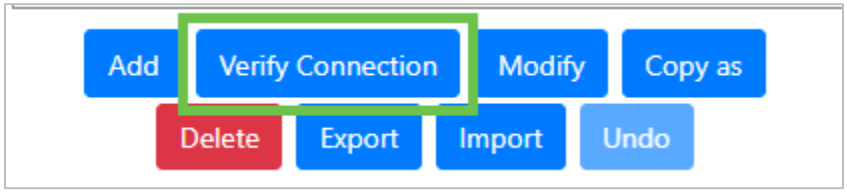
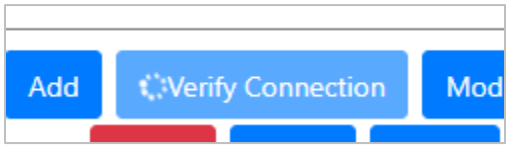
4.2.2.1.9 Verifying Remote Manager Connections

The remote manager connections dialogs for all products include a Verify Connection button.

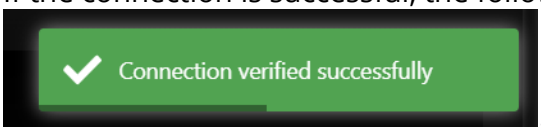


Select the connection you want to verify. Click Verify Connection. The button changes to indicate that the application is attempting to connect.



Results

If the connection is successful, the following message is displayed:



.

If it is unsuccessful, an error dialog similar to the one below is displayed.

4.2.3 Console Panel

The summary panel at the top of a dashboard displays the main viewlets of the objects.

When object aspects are opened from the top panel, they appear in viewlets within tabs located at the bottom of the screen in the Console panel. Queue and channel statuses, messages, attributes, and events are some of the object aspects that appear in the Console panel. To collapse/expand this section, click **Console**. You can also increase or decrease the height of the Console panel by clicking on the ellipses ••• and dragging it up or down.

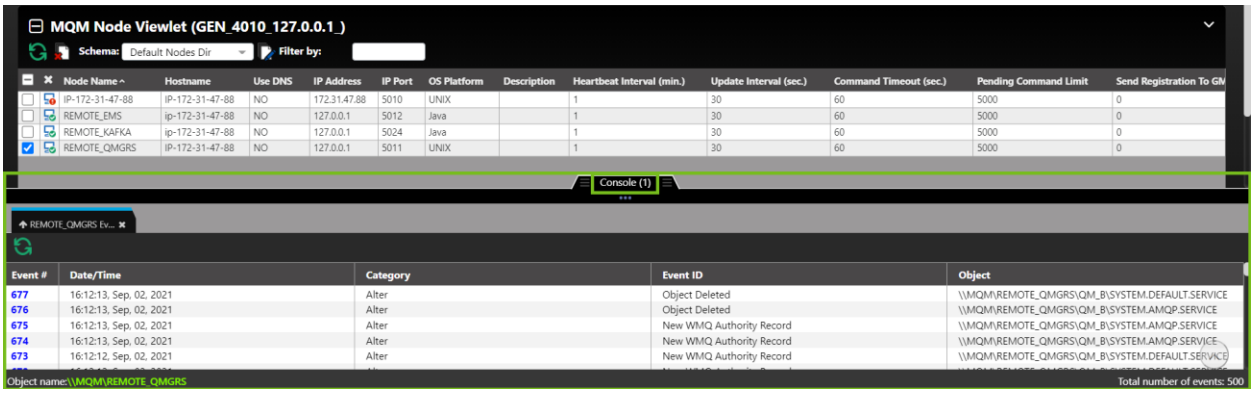


Figure 4.2.3-A. Console

You can click on the up arrow located on the left side of the tabs to jump to the originating viewlet which generated the Console viewlet. When multiple tabs are displayed within the Console, use the left and right navigation buttons to easily scroll through the tabs.

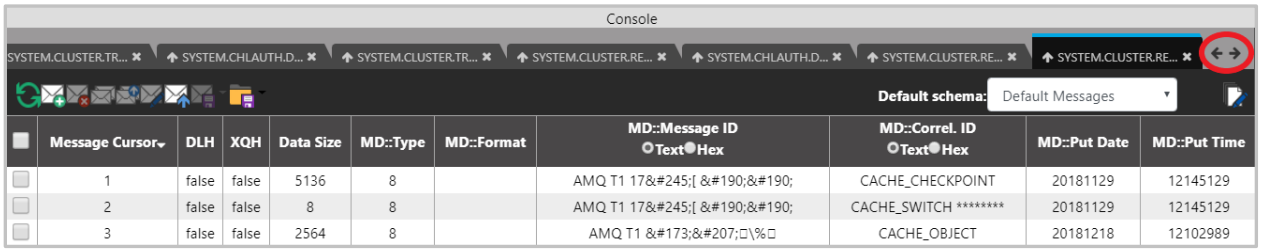


Figure 4.2.3-B. Viewing Console Tabs

Right-click on a Console tab to display options to close all Console tabs, or close all other tabs except for the tab you right-clicked on.

Figure 4.2.3-C. Close Tabs

4.2.4 Create New Dashboard

To add a new dashboard, do one of the following:

- Click the **Create dashboard** button + located immediately to the right of the dashboard tabs.
- Click **Dashboards...** to open the *Manage Dashboards* dialog, then click **+New**.

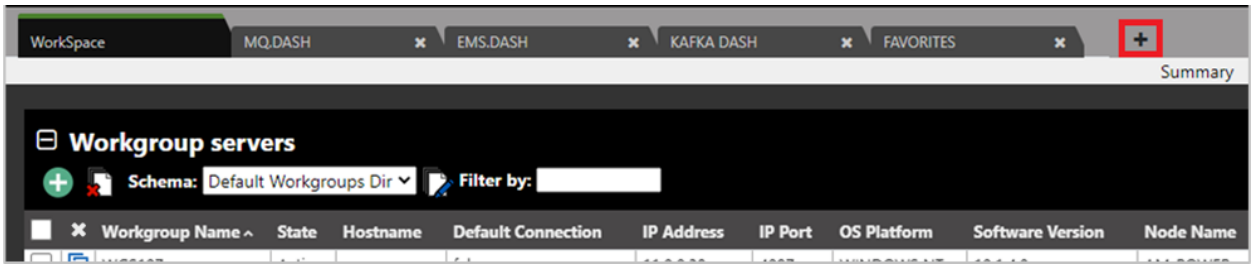


Figure 4.2.4-A. Create Dashboard Button

The *Create new Dashboard* dialog box opens. Enter a name for the new dashboard. Each dashboard must have a unique name.

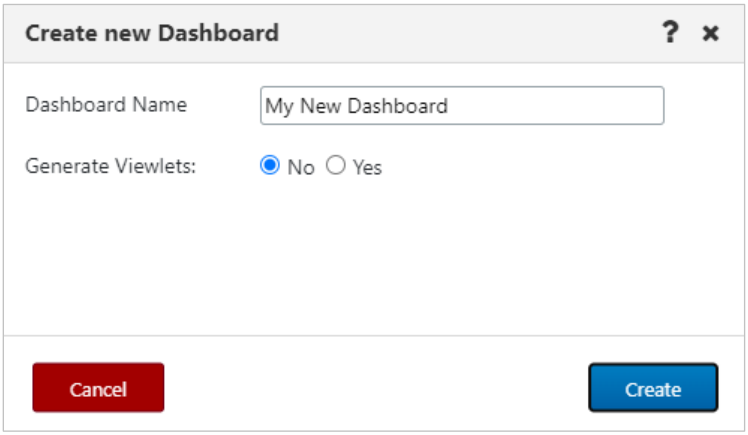


Figure 4.2.4-B. Create New Dashboard

Select either **No** or **Yes** to generate initial default viewlets in the new dashboard. If you select **Yes**, the following additional fields display:

- **Viewlets template:** Select a template for your viewlet. This is optional.
- **Product:** Select the object product type for the initial viewlets that will be generated. Choose from the following options:
  - **IBM MQ:** Local queue and channel viewlets get generated.
  - **EMS:** Queue, route, bridge, and connection viewlets get generated.
  - **Kafka:** Topic viewlets get generated.
  - **IIB:** Broker, server, service, REST API and Application viewlets get generated.

- **ACE**: Integration node, servers, applications, service, and REST API viewlets get generated.
- **SOLACE**: Brokers and Message VPNs viewlets get generated.

- **Workgroup server:** Select the workgroup server.
- **Use original path:** By default, the **Use original path** check box is selected, indicating that the new dashboard will use the Node and Queue manager of the selected dashboard template (from the Viewlets template list). To choose a different Node or Queue manager, clear this check box.
- **Node:** Select a specific node, or use an asterisk to include all objects from all nodes.
- **Queue Manager:** Select a specific queue manager, or use an asterisk to include all objects from all queue managers on the selected node(s).

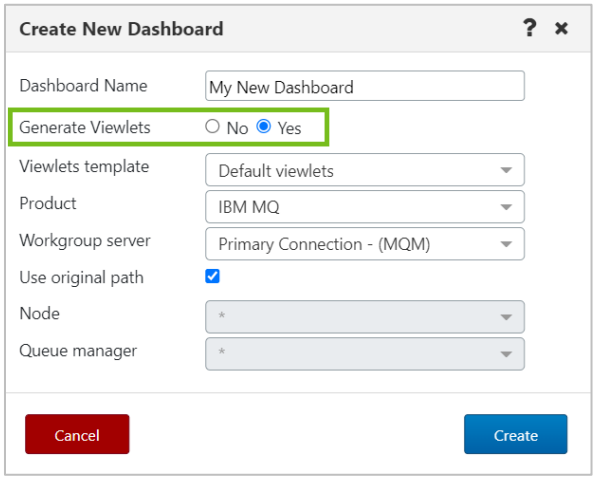


Figure 4.2.4-C. Generating Initial Viewlets

Click **Create**. A new dashboard is added with initial viewlets, if applicable. New dashboards are added to the current User Perspective.

It will look similar to the following:

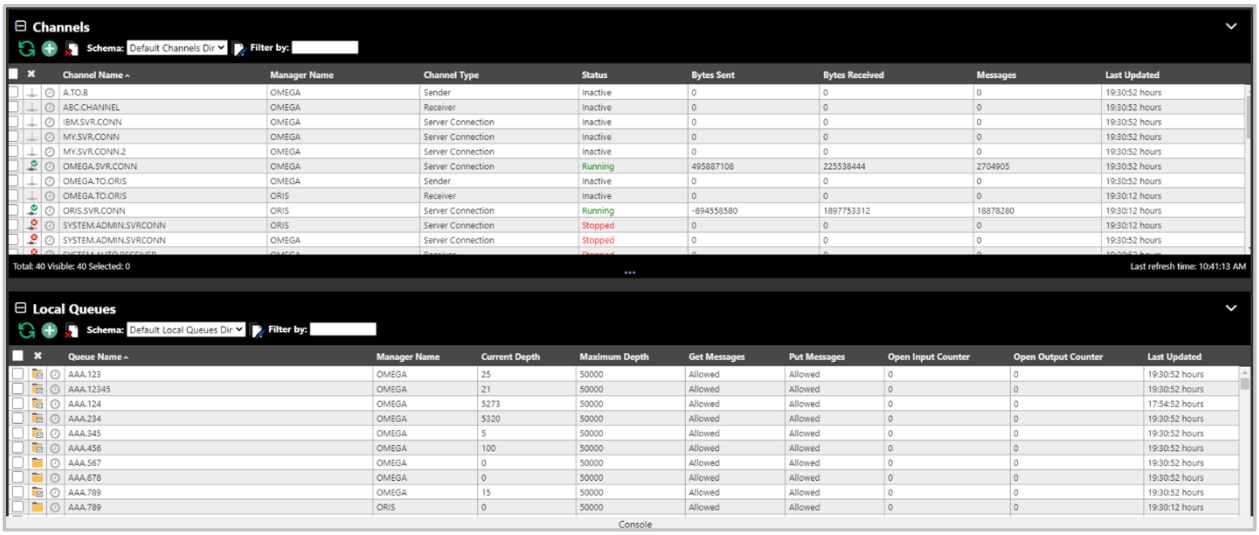


Figure 4.2.4-D. New Dashboard with Initial Viewlets

4.2.5 Change the Order of Dashboards

The order in which dashboards are displayed can be changed. Click on the tab of the dashboard you would like to move and drag and drop it to a new position.

4.2.6 Displaying Additional Dashboards

In systems with several dashboards, all dashboard tabs will not display within the immediate view of the screen. To scroll through all available dashboards, click on the arrows located to the right of the dashboard tabs or hover over the dashboards and scroll the wheel of your mouse.

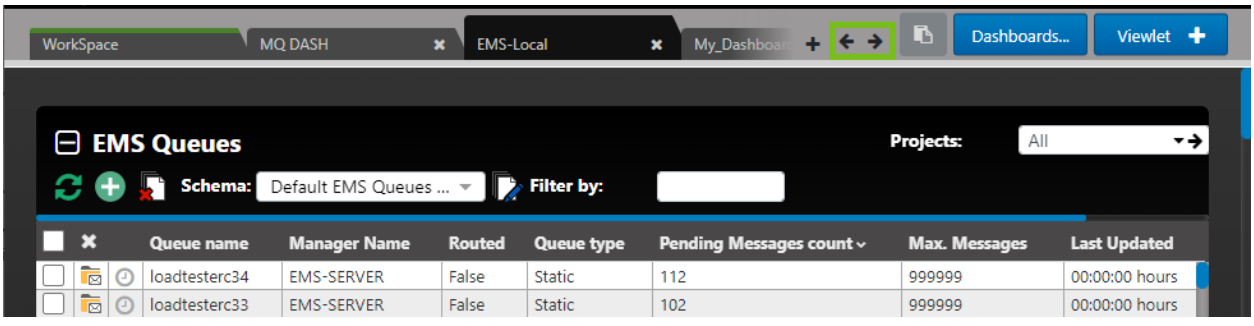


Figure 4.2.6-A. Displaying Additional Dashboards

4.2.7 Rename a Dashboard

To rename a dashboard, do one of the following:

- Right-click the tab of the dashboard that you want to rename and select **Rename**.
- Click **Dashboards...** to open the *Manage Dashboards* dialog, select the checkbox for the dashboard in the **Dashboard Name** list, then click **Rename**.

The following dialog box appears. Enter a new name and click **OK**.

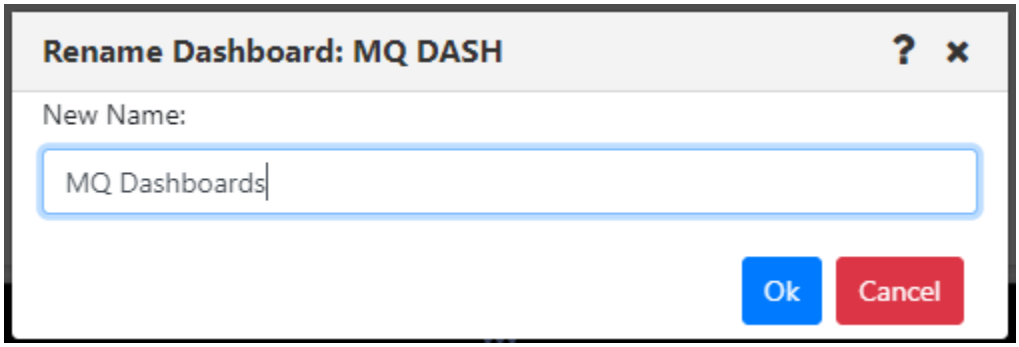


Figure 4.2.7-A. Rename Dashboard

4.2.8 Remove a Dashboard from the User Perspective

To remove a dashboard from the current User Perspective, click on the **X** within the tab of the dashboard. A confirmation prompt will appear asking you to confirm this action. Click **Yes** to remove the dashboard or **No** to cancel. For more information about User Perspectives, see the User Perspectives section.

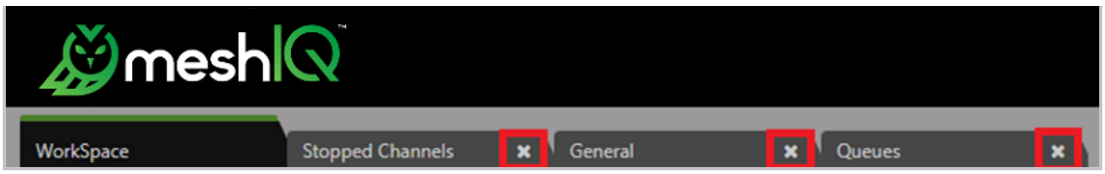


Figure 4.2.8-A. Remove Dashboards from the User Perspective

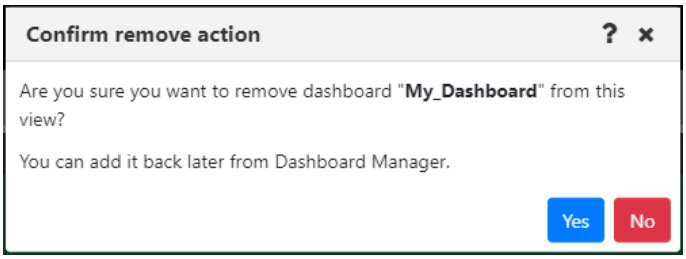


Figure 4.2.8-B. Dashboard Removal Confirmation

4.2.9 Delete Dashboards

To delete a dashboard, do one of the following:

- Right-click the tab of the dashboard that you want to delete and select **Delete Dashboard**.
- Click **Dashboards...** to open the *Manage Dashboards* dialog, select the checkbox for the dashboard or dashboards in the **Dashboard Name** list, then click **Delete**.

The following dialog box appears. Click **Yes** to delete the dashboard or dashboards, or **No** to cancel.

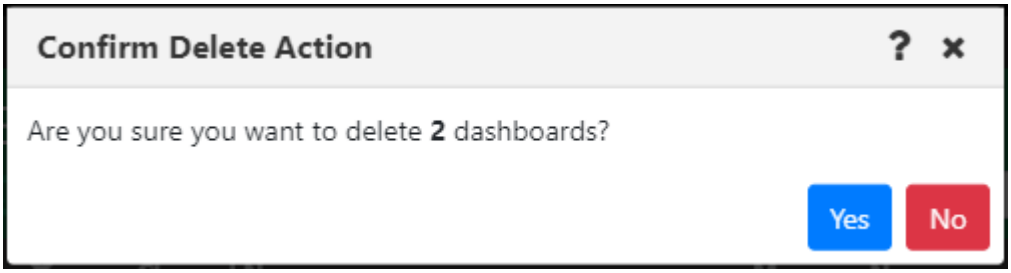


Figure 4.2.9-A. Confirm Delete Dashboards

4.2.10 Set Dashboard as Default

A user can specify which dashboard they would like to view immediately after logging in. To set a dashboard as the default, right-click the dashboard tab and select **Set as default** from the dashboard menu.

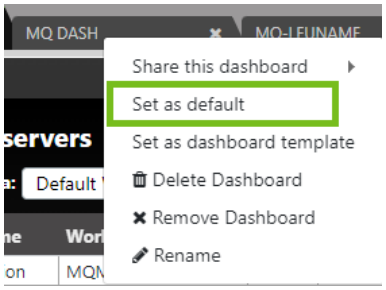


Figure 4.2.10-A. Set Dashboard as Default

A dashboard tab with a green line is the default dashboard of the system.

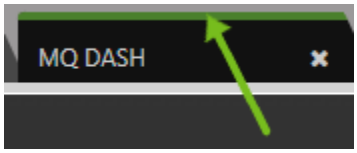


Figure 4.2.10-B. Default Dashboard

4.2.11 Default Dashboard Templates

Users can designate dashboards as default templates. These templates can then be used when generating new dashboards. The new dashboards will automatically be populated with predefined viewlets from the template. Multiple templates can be created and are available to all other users.

To find out whether a dashboard has been set as a default template, right-click its dashboard tab and look for a checkmark next to the **Set as default template** option. In the example below, *MQ Dash* is a dashboard set as a default template.

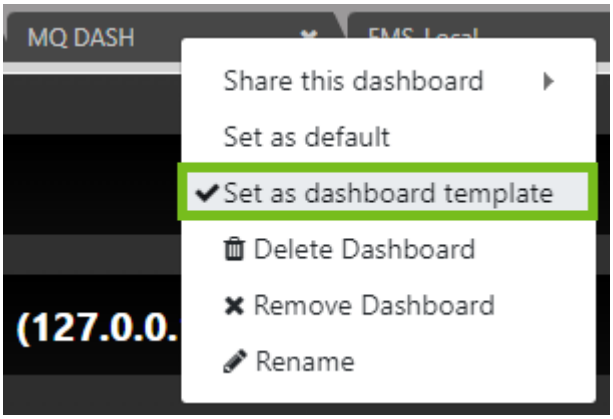


Figure 4.2.11-A. A Default Template Dashboard

To designate a default dashboard template, follow the steps below:

1. Right-click on the dashboard tab that you want to set as the default:

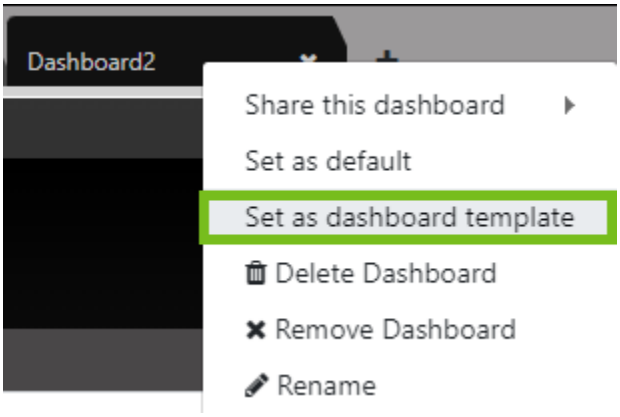


Figure 4.2.11-B. Set Dashboard as Default Template

2. Select **Set as default template**.

   If a template from another user already exists with the same dashboard name, an error similar to the following will appear:

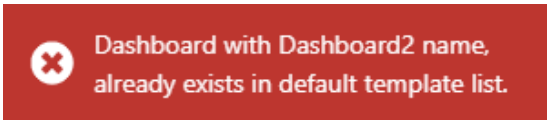


Figure 4.2.11-C. Dashboard Name Exists Error

3. From this point forward, the default template will be available to all users. When adding a new dashboard, the template will be available from the **Viewlets template** drop-down:

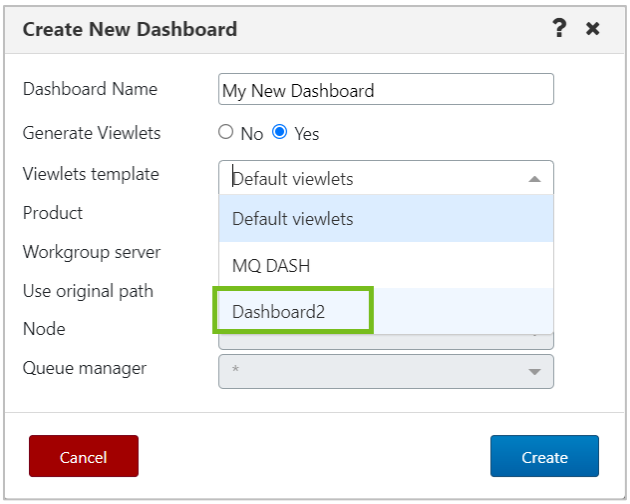


Figure 4.2.11-D. Select Dashboard Template

4.2.12 Sharing

You can share dashboards with other users by making them available to groups. Consider using shared dashboards in cases like these:

- Create a series of dashboards that new users will get automatically when they log in.
- Share your dashboards with other members of your team.

How to share a dashboard

Right-click on the dashboard tab to share and select **Share this dashboard**. From the popup menu, click the read (eye) icon next to the groups you want to share the dashboard with. The read icon changes to green for selected groups. A user will only be able to share with their own groups, unless they have the **Show All Groups for Shared Dashboards** right (located in the security application) which will allow sharing with all groups.

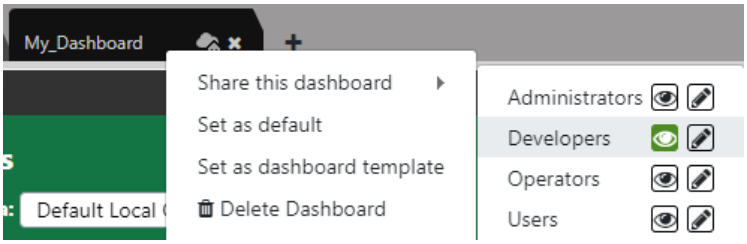


Figure 4.2.12-A. Sharing Dashboards

When a dashboard is shared, it will be displayed with the shared icon:

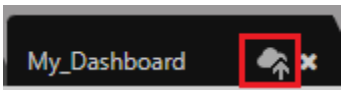


Figure 4.2.12-B. Shared Dashboard Tab

When creating shared dashboards, consider the following restrictions:

- What each user sees will depend on their rights. For example, an Administrator creates a dashboard with a queues viewlet and shares it with the Payments and the Credit teams. When creating the dashboard, the Administrator user sees all queues, but the Payment and Credit teams will only see their queues when using it.
- If you share a dashboard containing a favorite viewlet which contains objects the shared group is not allowed to see, they will still show up in the viewlet but with no attributes.
- A dashboard cannot be deleted by the owner if it is currently being shared with any other users.
- User settings such as showing empty queues do apply to shared dashboards, so resulting views may differ slightly.
- You cannot edit the schema of a shared dashboard.

Viewing shared dashboards

When a user logs on for the first time, all shared dashboards are visible automatically, based on the groups the user belongs to. However, dashboards that are shared after a user has already logged in are not visible right away. To view available dashboards, click on the **Dashboards...** button.

NOTE

If the shared dashboards you added do not display on the main tab bar, log out and log back in.

When viewing shared dashboards created by someone else, the following restrictions apply:

- Viewlets within a shared dashboard can be minimized or maximized, but only for the current session; a viewlet's collapsed/expanded state will not be saved.
- Only the dashboard owner can add new viewlets to a shared dashboard. However, if a group with which the dashboard has been shared has permission to edit dashboards, members of that group can edit the viewlets on the shared dashboard.
- The shared dashboard cannot be renamed.
- Schemas cannot be applied. The schema applied by the dashboard's owner is the only schema that will be used.

4.2.13 User Perspectives

User Views were renamed "User Perspectives" in version 10.5.

With User Perspectives, you can group related dashboards into perspectives, or views. You can switch between perspectives at any time. The Workspace dashboard is in all User Perspectives and cannot be removed.

4.2.13.1 What is a User Perspective?

A User Perspective is a container for a set of dashboards. Initially, each user starts with a single User Perspective called the "Main" one.

4.2.13.2 Add a User Perspective

To add a new User Perspective, click the User Perspective menu icon and select **+Add User** Perspective.

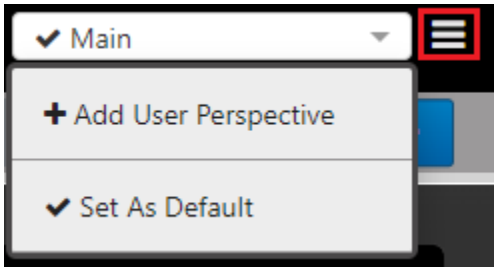


Figure 4.2.13.2-A. User Perspective Menu: Add Perspective

Enter a name for the new perspective:

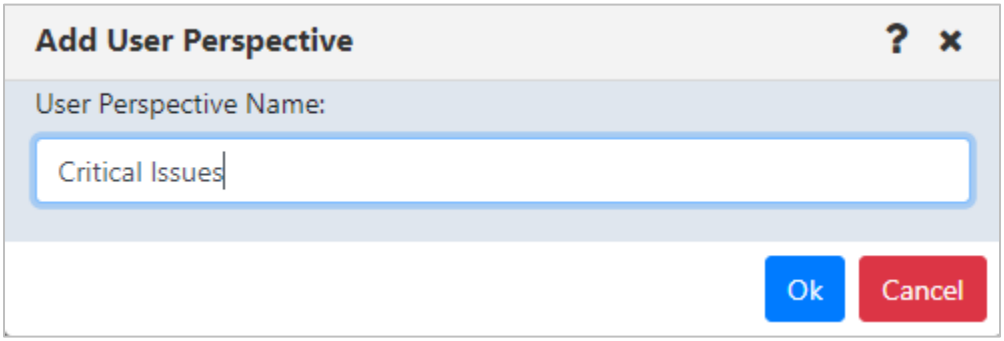


Figure 4.2.13.2-B. Add User Perspective

Click **OK**. All current dashboards except the Workspace dashboard are cleared. From there, you can add, rename, or delete dashboards to update your new User Perspective. All changes you make are retained and are visible the next time you access the same perspective.

You can return to the Main perspective by selecting it from the User perspective list:

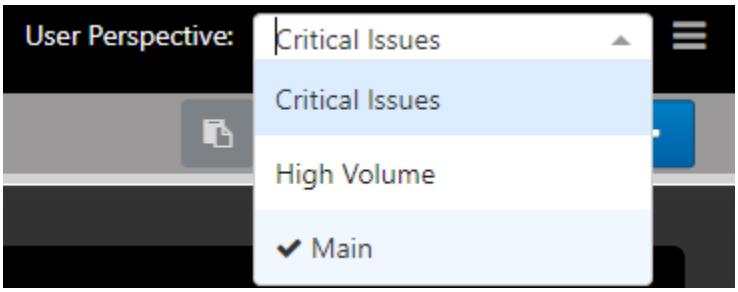


Figure 4.2.13.2-C. User Perspective List

4.2.13.3 Edit a User Perspective

You can edit a User Perspective by renaming it. Select the view from the User perspective list (Figure 4.2.13.2-C) to view it. Then click the User Perspective menu icon and select **Edit User Perspective**.

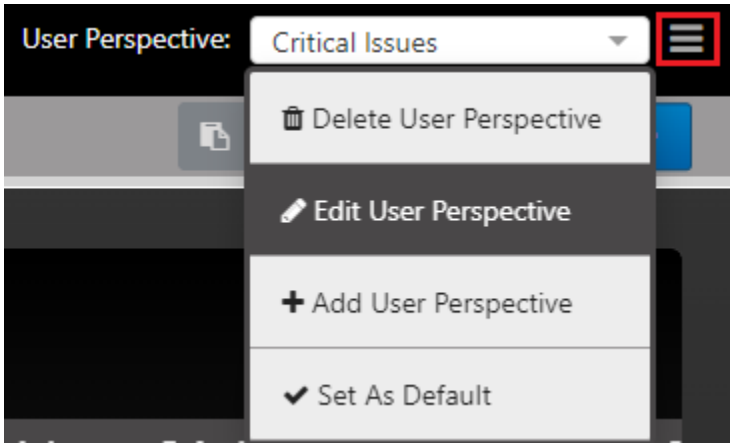


Figure 4.2.13.3-A. User Perspective Menu Icon

Enter a new name for the User Perspective and click **OK**.

The new name appears in the User perspective list.

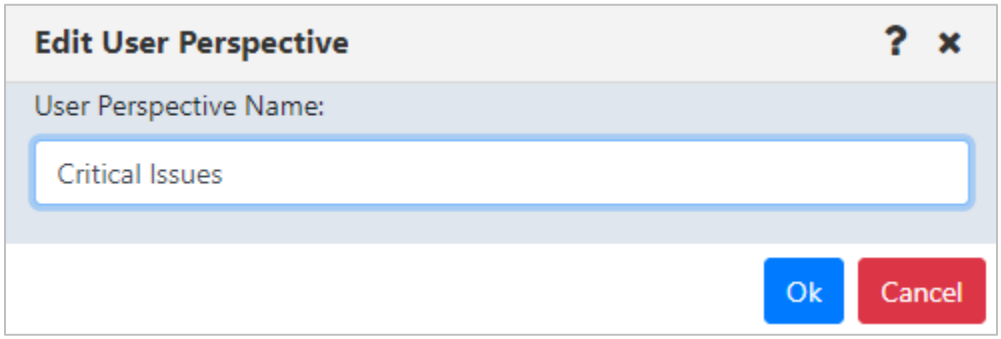


Figure 4.2.13.3-B. Edit User Perspective

4.2.13.4 Set a User Perspective as the Default

If you want a certain User Perspective to be displayed when you log on to the application, set that User Perspective as the default. Click the User Perspective menu icon (Figure 4.2.13.3-A.) and select **Set As Default**.

4.2.13.5 Delete a User Perspective

You can delete a User Perspective so it is no longer available. Select the perspective from the User perspective list to view it. Then click the User Perspective menu icon (Figure 4.2.13.3-A.) and select **Delete User Perspective**.

Click **Yes** to delete the User Perspective. As a result, your User Perspective reverts to the Main perspective.

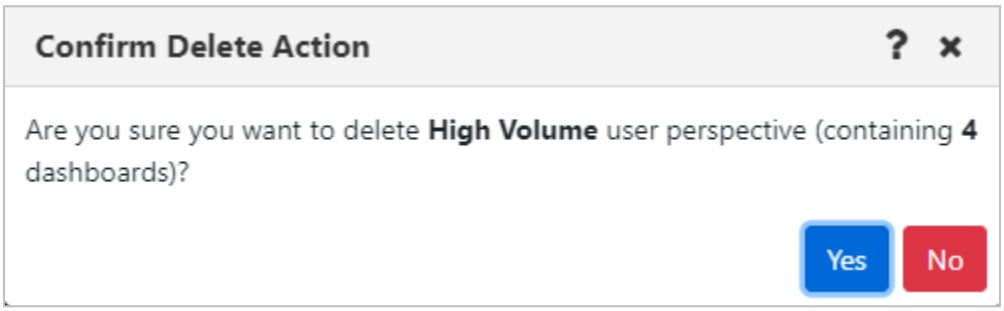


Figure 4.2.13.5-A. Confirm Delete Action: Delete User Perspective

4.2.14 Manage Dashboards

The Manage Dashboards dialog is a central location for many dashboard-related actions:

- viewing which user perspectives and viewlets are associated with a dashboard
- adding shared or imported dashboards to your current User Perspective
- finding a dashboard that you previously removed from a User Perspective and adding it back
- assigning tags to dashboards to keep them organized

From here you can also perform the basic functions of adding, renaming, and deleting dashboards.

Manage Dashboards also provides access to advanced features such as creating, editing, and deleting tags and exporting and importing dashboards.

When you click the name of a dashboard on the left side, its details are displayed. The right side of the dialog shows (from top to bottom) the User Perspectives that contain the selected dashboard (along with the number of dashboards in each one), any tags that have been assigned to the dashboard, and the dashboard's viewlets.

NOTE

To preview a dashboard's details without selecting it, hover over its name in the list.

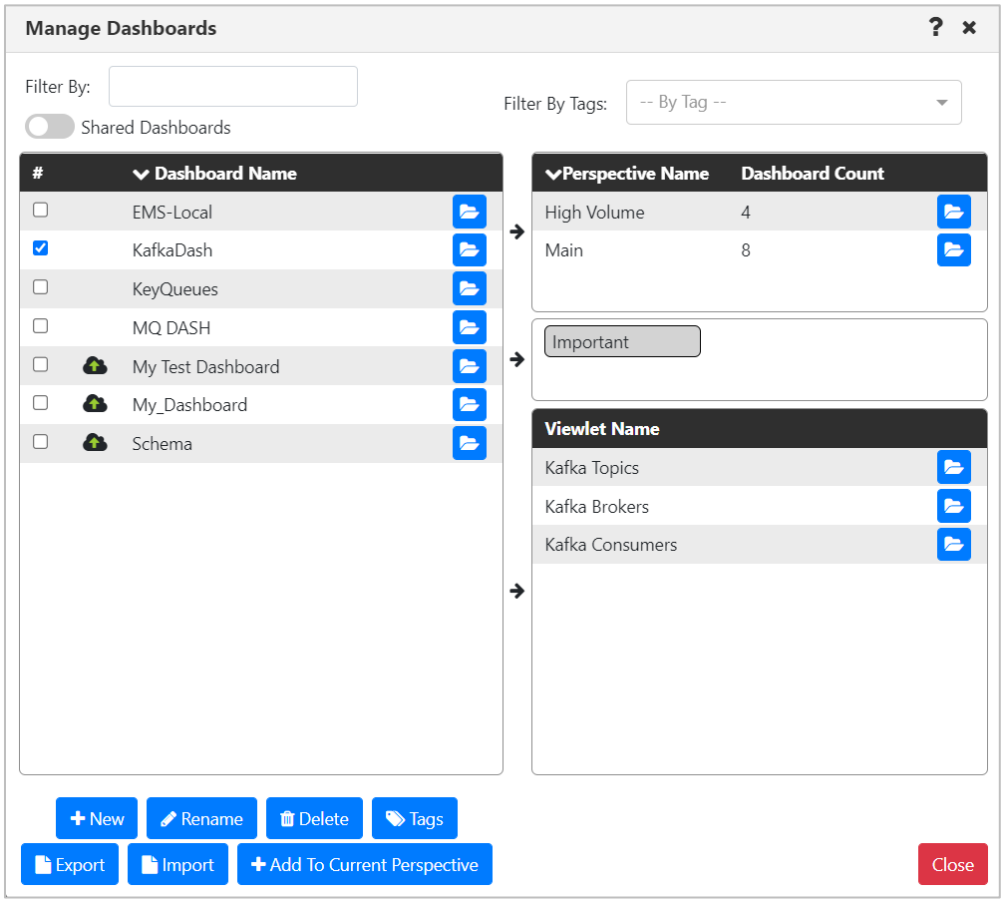


Figure 4.2.14-A. Manage Dashboards

4.2.14.1 Finding Dashboards

On the *Dashboard Management* dialog, you can find dashboards in several ways:

Filter the Dashboard List

Use the Filter By field to find dashboards by three criteria. The Dashboard Name list is automatically filtered to include only dashboards that match any of these criteria, including partial matches:

- Dashboard name
- Name of a viewlet contained on the dashboard
- Name of a User Perspective that contains the dashboard

Search for Dashboards by Tags

Use the Filter By Tags field to find dashboards that have been assigned certain tags. To be included in the results, a dashboard must have all the tags that have been added to the Filter By Tags field.

To add a tag to the Filter By Tags field, do one of the following:

- Click the Filter By Tags list arrow and select as many tags as you want to include in your search.
- If a tag is visible in the tag box (between the User Perspective and Viewlet boxes on the right side), click and drag it to the Filter By Tags field to add it to the criteria.

4.2.14.2 Adding Dashboards to the Current View

If you have found a dashboard (for example, a shared dashboard) that you want to add to your current perspective, select the checkbox for the dashboard in the Dashboard Name list and click

. The Dashboard is immediately added to your current User Perspective.

4.2.14.3 Navigating to Dashboards, User Perspectives, and Viewlets

Open buttons on the *Dashboard Management* dialog can be used to navigate directly to the corresponding items. For example:

- Click Open next to a User Perspective to open the selected dashboard in the selected User Perspective.
- Click Open next to a Dashboard to open the selected dashboard. If the selected Dashboard is not part of the current User Perspective, it will be added to the User Perspective.
- Click Open next to a Viewlet to open the selected viewlet within the selected dashboard. Again, if the selected Dashboard is not part of the current User Perspective, it will be added to the User Perspective.

4.2.14.4 Assigning Tags to Dashboards

Tags make finding dashboards easier. You can search for dashboards by the tags that are assigned to them.

To assign tags to dashboards, you must have the **Manage Tag Assignment to Dashboards** right in the security application.

Click **Dashboards...** to open the *Manage Dashboards* dialog. Select the checkbox for a dashboard or dashboards in the **Dashboard Name** list and click **Tags**.

The left column lists all tags that are available to be assigned to the dashboard. The right column lists any tags that are already assigned to the dashboard.

To add tags, on the Tag Name list on the left side, select the checkbox for each tag you want to add to the dashboard. Click the right arrow › to add the tag to the dashboard. The tag is moved to the right column.

To remove tags, on the right side, select the checkbox for each tag you want to remove from the dashboard. Click the left arrow ‹ to remove the tag from the dashboard. The tag is moved back to the left column.

To add all tags to the dashboard, whether or not they are selected, click the double right arrow ».

To remove all tags from the dashboard, click the double left arrow «.

Click **Save**.

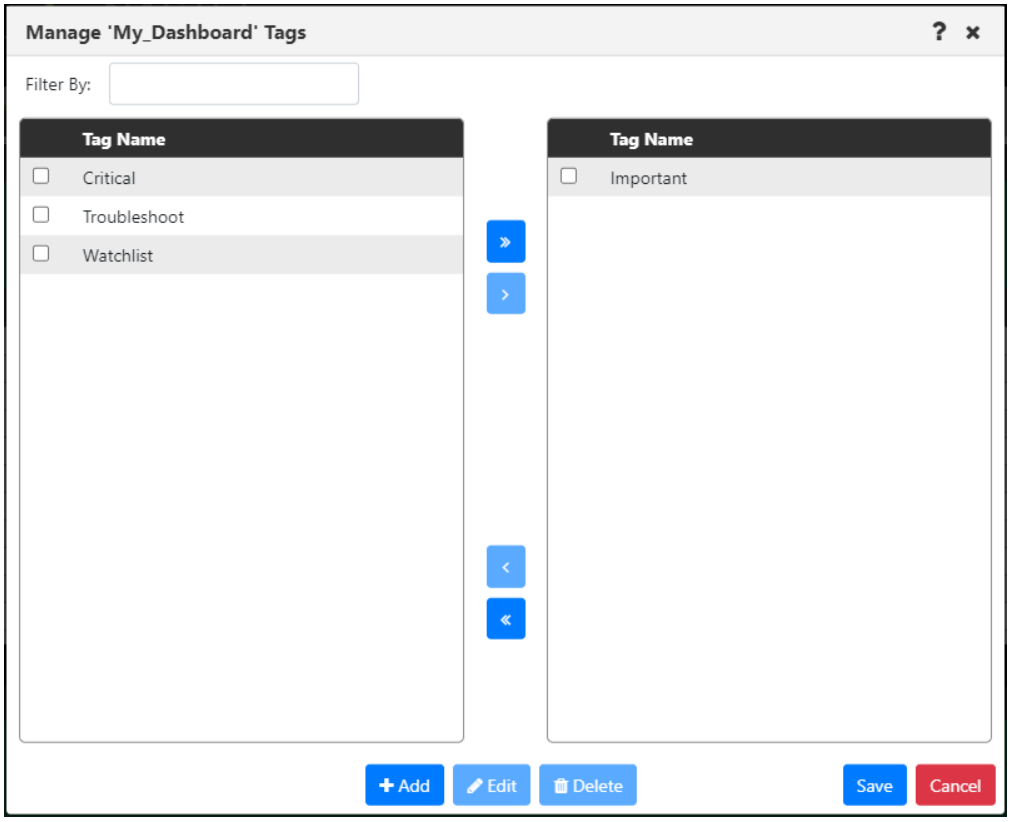


Figure 4.2.14.4-A. Manage Dashboard Tags

4.2.14.5 Advanced Dashboard Management Features

The *Manage Dashboards* dialog also provides access to several tools that are designed to be used by advanced users, such as administrators:

- Managing tags (adding, editing, and deleting the tags that are used to organize dashboards and make them easy to find)
- Importing and Exporting Dashboards
- Importing and Exporting Viewlets

The procedures below will begin from the *Manage Dashboards* dialog. To perform them, first click **Dashboards...** to open the *Manage Dashboards* dialog.

4.2.14.5.1Managing Tags

To ensure control over the classification of dashboards, the ability to create, edit, and delete dashboard tags requires the **Manage Dashboards Tags Data** right to be granted in the security application.

To create a tag, on the *Manage Dashboards* dialog, select the checkbox for a dashboard or dashboards in the **Dashboard Name** list and click **Tags**. Click **+Add** to open the *Edit Tags* dialog. Enter the name of the new tag and click **+Add**. Repeat this process for as many new tags as you want to add. Then click **Save**.

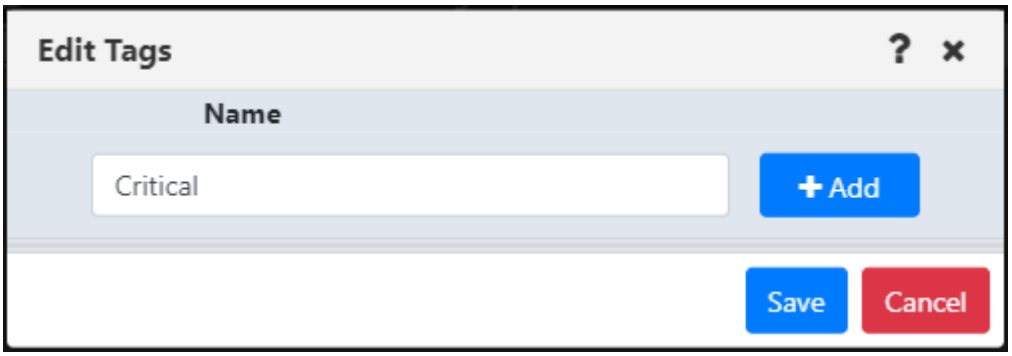


Figure 4.2.14.5.1-A. Edit Tags

New tags are added to the bottom of the tag Name list.

To edit a tag, on the *Manage Dashboards* dialog, select the checkbox for a dashboard in the **Dashboard Name** list and click **Tags**. Select the checkbox or checkboxes for the tag or tags you want to edit and click **Edit**. Update the tag names as needed and click **Save**.

To delete a tag, on the *Manage Dashboards* dialog, select the checkbox for a dashboard in the **Dashboard Name** list and click **Tags**. Select the checkbox or checkboxes for the tag or tags you want to delete and click **Delete**. Click **Yes** to delete the selected tags or **No** to cancel.

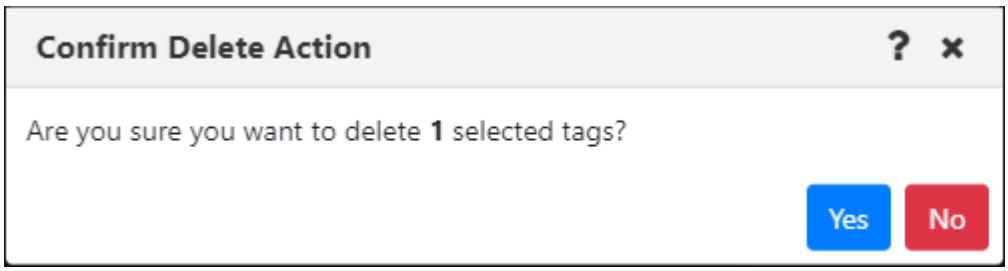


Figure 4.2.14.5.1-B. Confirm Delete Action: Tags

You can also delete a tag that you are editing by clicking the **Delete** button next to it in the *Edit Tags* dialog.

4.2.14.5.2Importing and Exporting Dashboards

The Manage Dashboards window also allows you to export dashboards, along with their viewlets and tags, into files so that others can import them.

4.2.14.5.2.1 Export Dashboards

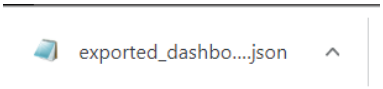
You can export dashboards that other users can import. Consider using exported and imported dashboards in cases like these:

- Exporting is a way to save your dashboards for future re-import if, for example, the database that you are using will be replaced.
- Exporting and importing dashboard files is a way to pass dashboards between people or make them available for new users.
- Exporting and importing dashboards can be used to move dashboards from one environment to another.

NOTE

When exporting dashboards, favorite viewlets are not included. Only external viewlets and data are included.

To export one or more dashboards from the *Manage Dashboards* dialog, select the dashboard or dashboards and click **Export**.
A file called exported_dashboards[uniqueid].json is generated and downloaded through your browser. The file can be saved or opened.



Other users can then use this file to import these dashboards through the import process described in the next section.

4.2.14.5.2.2 Import Dashboards

You can import a dashboard that you or someone else has exported. For example, an administrator might create a set of dashboards specifically for new users, export them to a file, and have a new user import that file.

From the *Manage Dashboards* dialog, click **Import** to open the *Import Dashboards* dialog. Under Choose Import file, click **Choose File**. Use the *Open* dialog to navigate to the dashboard file or files that you want to import. Double-click the file or files.

Dashboards from the file are listed on the left side of the dialog.

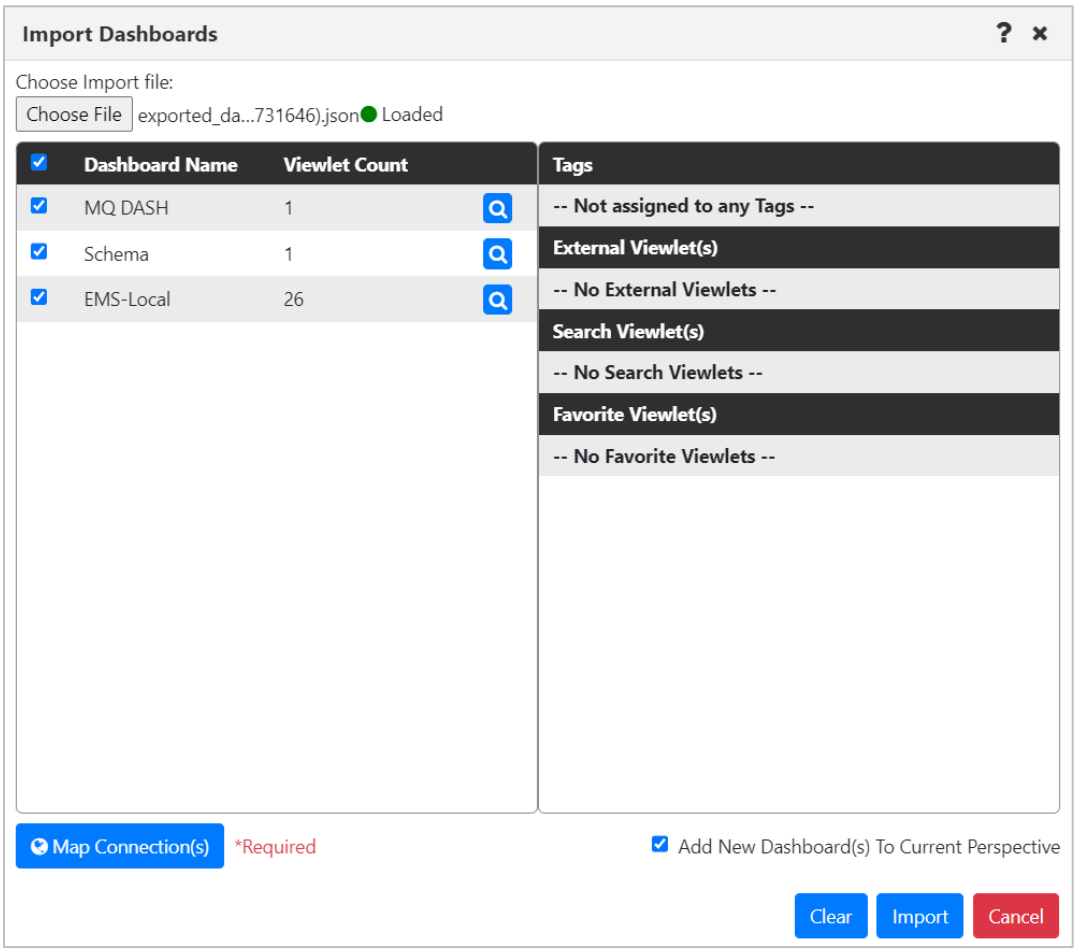


Figure 4.2.14.5.2.2-A. Import Dashboards

To view details about a dashboard, such as its tags and viewlets, click the magnifying glass icon .

Figure 4.2.14.5.2.2-B. Imported Tags and Viewlets

By default, importing connections are mapped to the first workgroup server connection that is in use. If a user has more than one connection in use, has permission to create connections at import, and wants to import the dashboards into a connection other than the default, the user can click **Map Connection(s)**. On the *Map Connection(s)* dialog, the user can select the connection that they want to use for the imported data. The **User Connection** list includes all connections that are in use.

A user who has the **Allowed Create Connection On Import** right can allow new connections to be added automatically at import, if needed. The user can select the *Add if not found in* option from the **User Connection** list. The user's connections are searched for those that have the same port and connection list as the importing connections, even if the names are different. If no such connections are found, a new connection is added.

Click **OK**.

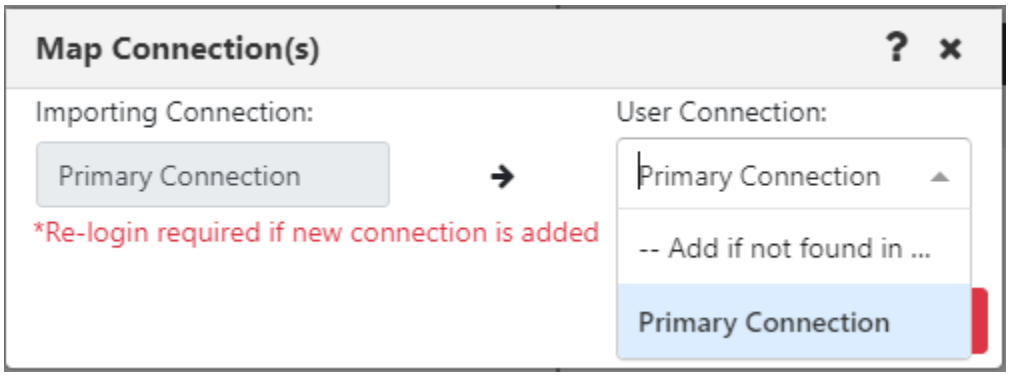


Figure 4.2.14.5.2.2-C. Map Connections

By default, the **Add New Dashboard(s) To Current Perspective** checkbox is selected, so that upon import, new dashboards will be added to the current user perspective. If you want to prevent this from happening, clear the checkbox.

Choose the specific dashboards that you want to import by selecting their checkboxes.

Click **Import**. The imported dashboard or dashboards are displayed. If you've chosen to import multiple dashboards, the first one is displayed.

If you already have a dashboard with the same name as one that you are importing, a (1) is appended to the imported dashboard's name.

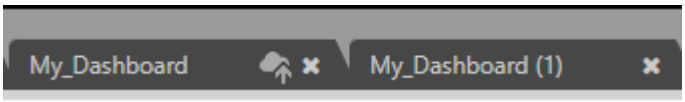


Figure 4.2.14.5.2.2-D. Treatment of Duplicate Dashboard Names

4.3 Viewlets

4.3.1 Adding and Maintaining Viewlets

The *Create Viewlet* dialog box is displayed when the **Viewlet** button

is clicked from the top right of the screen *(Figure 4.1-A)*. Please note that when accessed from the *WorkSpace* dashboard, only the **Create a temporary viewlet using search** option is available.

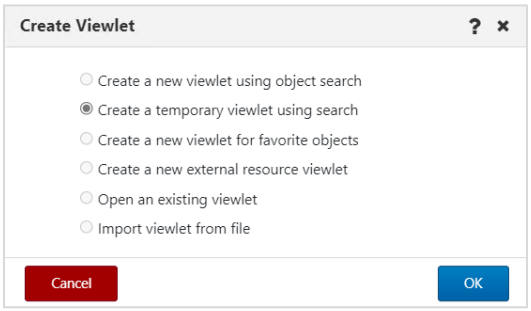


Figure 4.3.1-A. Create Viewlet

4.3.1.1 Creating New / Temporary Viewlets

The *Create new viewlet* window is displayed when **Create a new viewlet using object search** or **Create a temporary viewlet using search** is selected from the **Create Viewlet** dialog box (*Figure 4.3.1-A*). If **Create a temporary viewlet using search** was selected, the viewlet will only be visible during this session.

Select the product and object type from the left side of the screen. On the right side of the screen, complete the fields as required. When selecting a Workgroup server connection, you can choose to show objects from multiple connections by selecting the **Multi-Selection** checkbox and selecting the individual Workgroup servers one at a time.

If Workgroup server connection groups have been created, and the User Settings **Display Grouping In Connection Selection** checkbox is selected, connection groups are included in Workgroup server lists, in addition to individual connections.

To make the viewlet temporary, enable the **Temporary** check box.

Use the **Project** drop-down to filter the viewlet by user group configurations. Viewlet results are filtered by the selected group's server (workgroup servers, nodes, and managers) and object group access permissions defined in the security application. If **All** is selected, the data displayed is according to all groups the user belongs to. For example, if the user belongs to both the *Administrators* and *Users* groups, the viewlet will display data that meets the security application filters for *Administrator* or *Users* when **All** is selected.

The **Attribute filter** is useful to search for specific cases. See Attribute Filter, for more info.

The **Custom Viewlet Color** option allows you to color code viewlets. See Color Settings Tab, for more information.

Click **Save Changes** when done. The viewlet will appear at the bottom of the current dashboard.

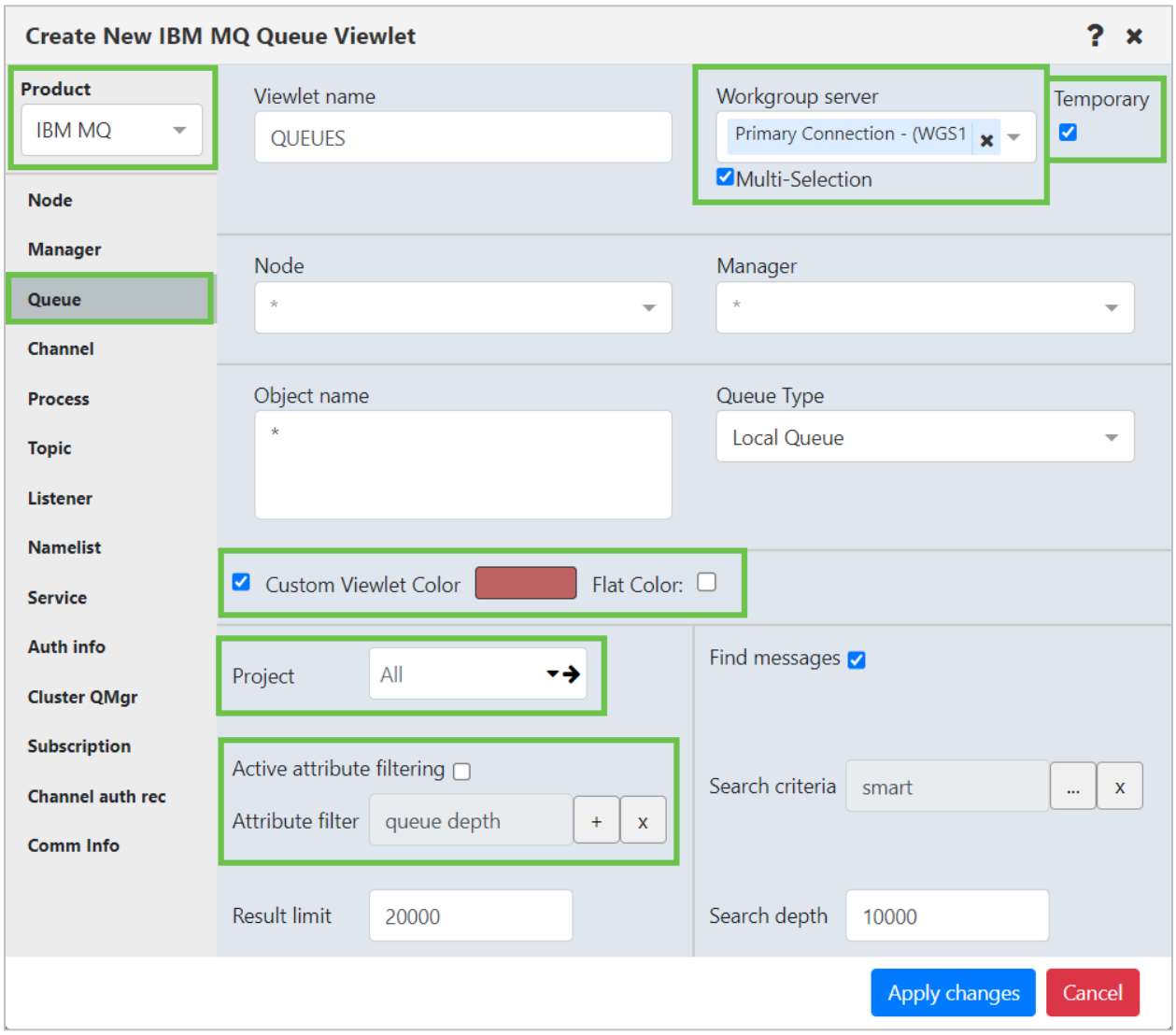


Figure 4.3.1.1-A. Create New Queue Viewlet

NOTE

If you notice a warning symbol located at the top-right of the viewlet, it means that the queue manager is down.

4.3.1.2 Create a New Viewlet for Favorite Objects

The *Add favorite viewlet* dialog box is displayed when **Create a new viewlet for favorite objects** is selected from the **Create Viewlet** dialog box (*Figure 4.3.1-A*). For more information on favorite viewlets, see Favorites.

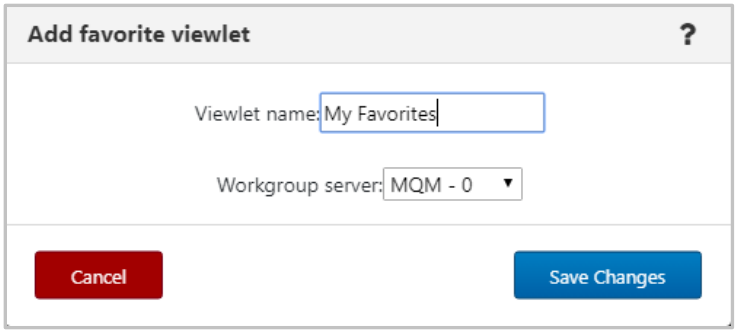


Figure 4.3.1.2-A. Add Favorite Viewlet Dialog Box

4.3.1.2.1 Create a Favorite Viewlet

1. Enter a name for the viewlet within the **Viewlet name** field.
2. Select a server from the **Workgroup server** drop-down list.
3. Click **Save Changes**.
4. A viewlet for all favorite objects is now created. Scroll down to see the new viewlet. Favorite viewlets will have a star icon appearing immediately before the viewlet's name.

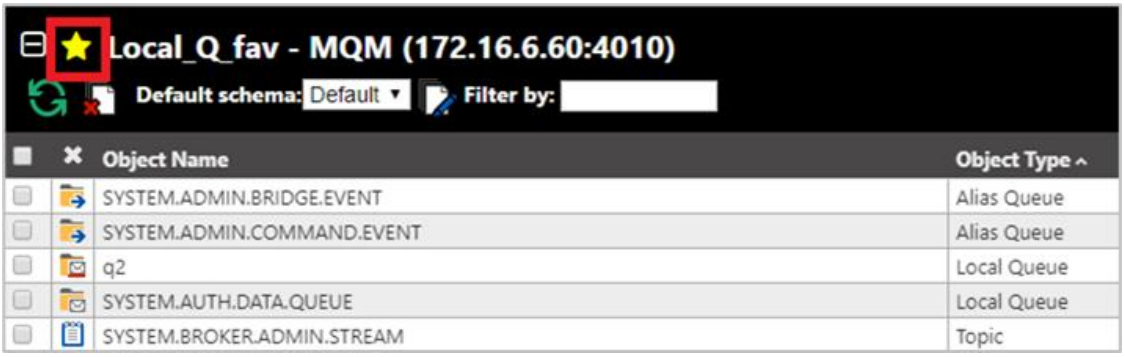


Figure 4.3.1.2-B. Favorites Viewlet

4.3.1.2.2 Edit / Delete a Favorites Viewlet

Click the down arrow on the right side of the viewlet. Select **Edit viewlet** to rename the viewlet (*Figure 4.3.1.2-D*) or **Delete viewlet** (*Figure 4.3.1.2-E*) to remove the viewlet.

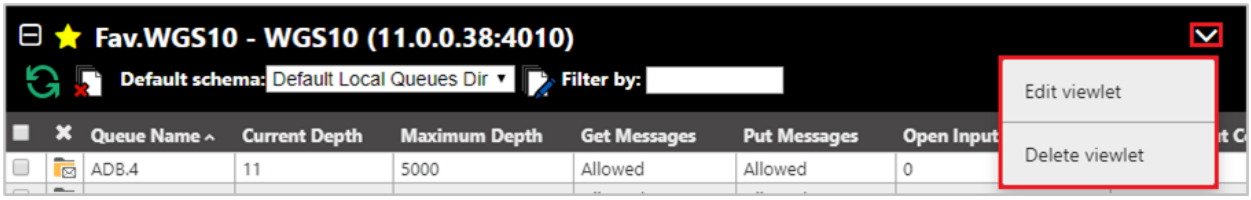


Figure 4.3.1.2-C. Edit / Delete Favorite Viewlet

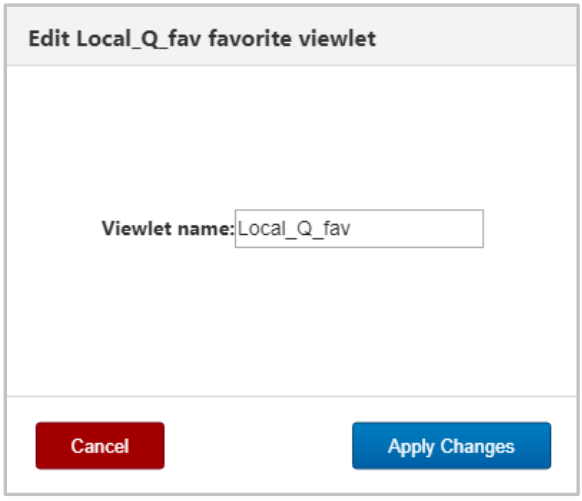


Figure 4.3.1.2-D. Edit Favorite Viewlet

Figure 4.3.1.2-E. Delete Viewlet Confirmation

4.3.1.3 Create a New External Resource Viewlet

You can create a viewlet using an external resource. For example, you can display your company's intranet or a knowledge base so that it is easily viewed and accessible right within meshIQ Manage. If you utilize XRay, this feature allows for integration; you can view XRay viewlets from meshIQ Manage.

To create a viewlet using an external resource, select **Create a new external resource viewlet** from the *Create Viewlet* window (*Figure 4.3.1-A*). The below window opens. Enter a name for the viewlet and the URL to the external source. Select the workgroup server in the last field and click **Ok**.

NOTE

If you are adding an XRay viewlet, refer to *Can I publish a viewlet on a web page?* For information on how to share the viewlet and retrieve its URL.

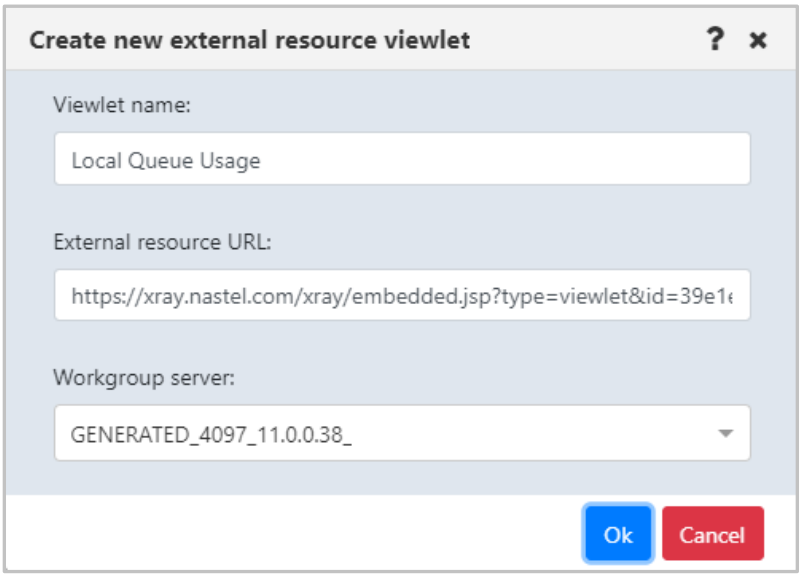


Figure 4.3.1.3-A. Create New External Resource Viewlet

The viewlet will now appear on your dashboard. Below is an example.

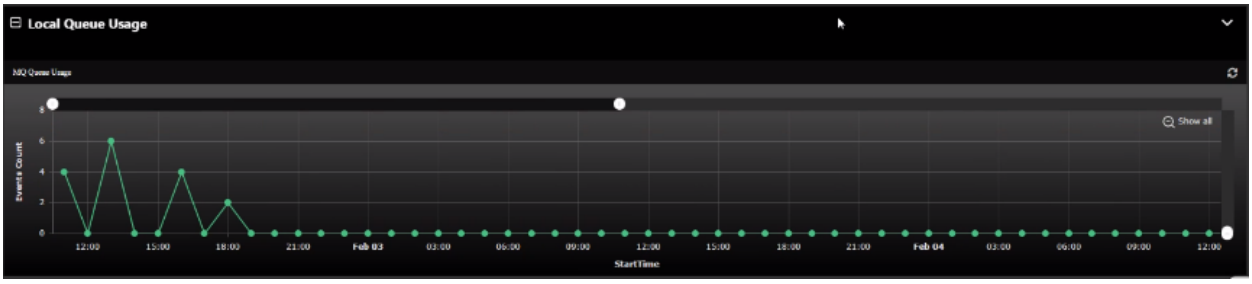


Figure 4.3.1.3-B. External Resource Viewlet

4.3.1.4 Import a Viewlet from a File

If you or another user has exported viewlet properties to a file (see Export viewlet to file), you can import that file to create a new viewlet. Select the **Import viewlet from file** option from the **Create Viewlet** dialog box (*Figure 4.3.1-A*).

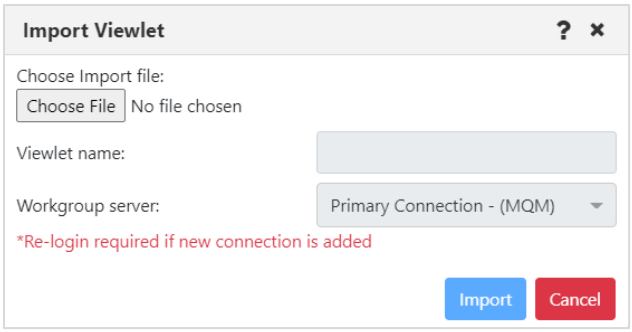


Figure 4.3.1.4-A. Import Viewlet

After you choose a file, the Viewlet Name is filled in, based on the file contents. Workgrouip server connections are listed. A user who has the **Allowed Create Connection On Import** right can allow new connections to be added automatically at import, if needed. The user can select the *Add if not found in* option from the **User Connection** list. The user's connections are searched for those that have the same port and connection list as the importing connections, even if the names are different. If no such connections are found, a new connection is added.

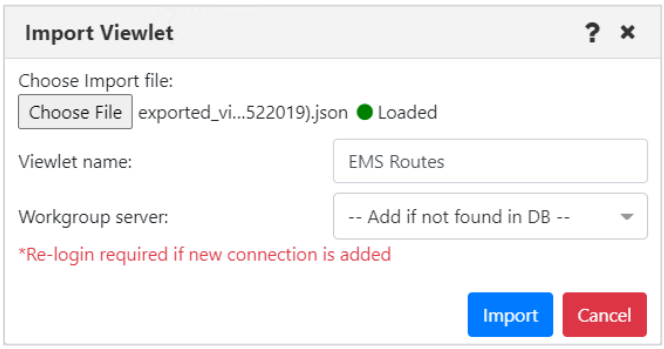


Figure 4.3.1.4-B. Import Viewlet with File

Click **Import** to import the viewlet into the dashboard. If a new connection has been added, log out and back in again to view it.

4.3.1.5 Viewlet Menu

Clicking the down arrow located at the top right corner of a viewlet opens the viewlet menu. Users have the option to edit, remove or delete viewlets. They can also export viewlet data or properties. See the sections immediately below for more information on these options.

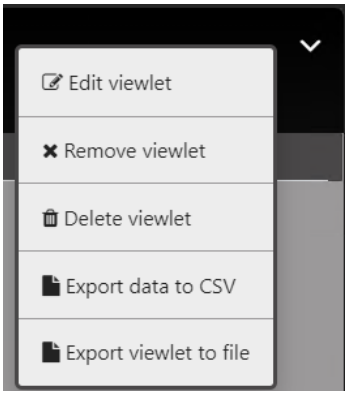


Figure 4.3.1.4-A. Viewlet Menu

4.3.1.5.1 Edit Viewlet

Select **Edit Viewlet** from the viewlet drop-down menu. The *Edit Viewlet* window opens. For more information on this screen, please see *Creating New / Temporary Viewlets*.

4.3.1.5.1.1 Attribute Filter

The **Attribute filter** feature allows you to narrow down the number of records in a viewlet to display more relevant results. Attribute filters can be valuable when searching for specific use cases, such as queues that get disabled, queues with more than 1000 messages, or objects that do not have specific settings (default persistence). Users can specify multiple attributes for each filter. In versions 10.4.2 and earlier, attribute filters are applied to data that the workgroup server has already returned. In versions 10.5 and later, the workgroup server applies any active attribute filters to data before it is passed to the application server to be displayed in the browser.

Attribute filters can be applied on the *Create New Queue Viewlet* and *Edit Queue Viewlet* (*section 4.3.1.5.1)* windows. See *Creating New / Temporary Viewlets*. Once you create an attribute filter for a particular product and viewlet type, it becomes available for all viewlets for that product and type. For example, if an attribute filter is created for an IBM channel viewlet, it is available on other IBM channel viewlets.

The **Active attribute filtering** checkbox turns attribute filtering on and off for the viewlet. Select the checkbox to enable attribute filtering.

NOTE

Whether attribute filtering is enabled or not, the specific attribute filters that you add will remain available for later use.

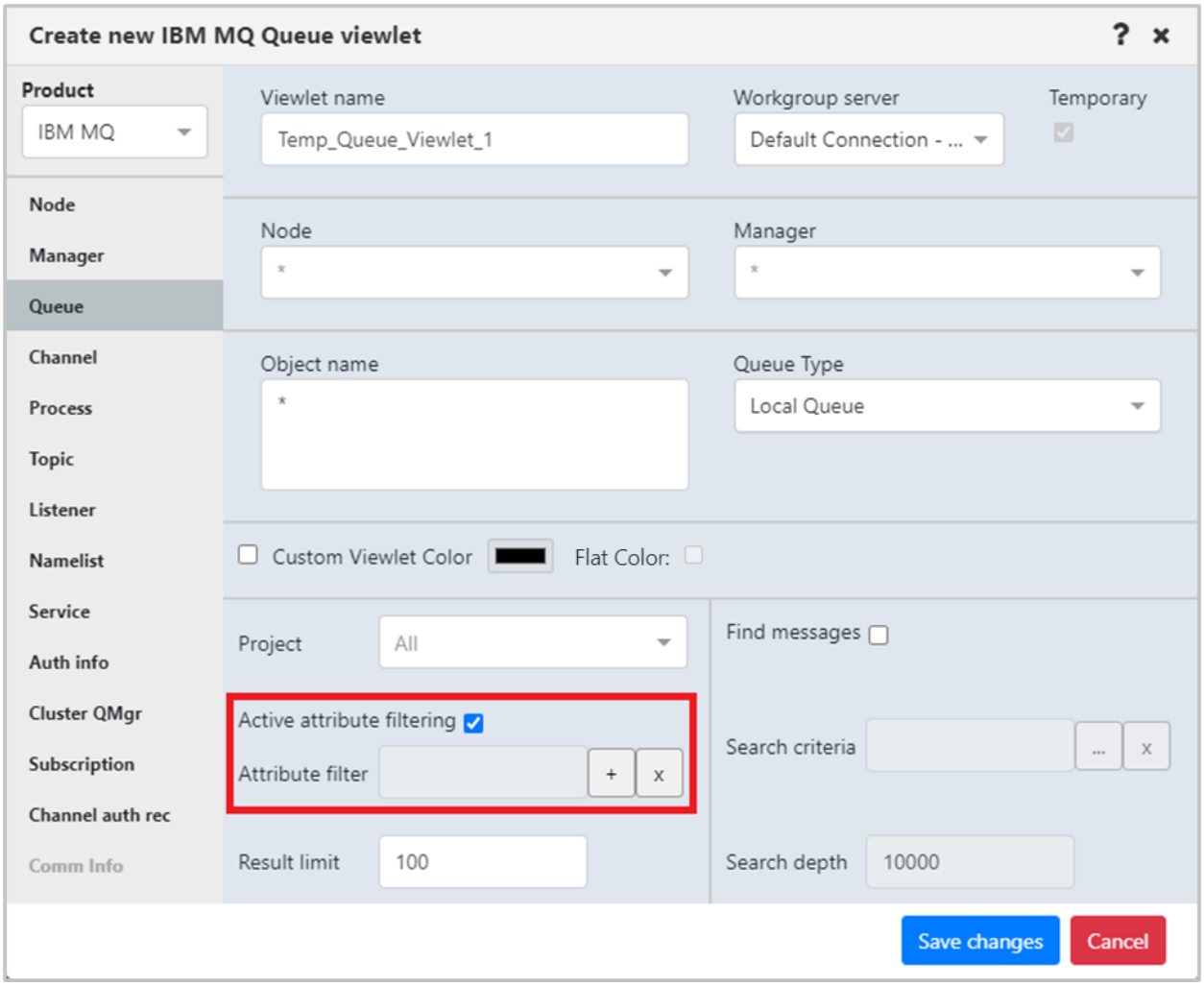


Figure 4.3.1.5.1.1-A. Attribute Filter Option

You must have the **Manage Private Attribute Filters** right to add, edit, copy, or delete attribute filters.

To add an attribute filter, click the + button immediately to the right of the field.

The *Attribute Filters* dialog box opens. If you created any filters in the past, they are included in the Filter Name list.

About Sharing Attribute Filters:

- Any filters that you have shared have a green Shared Filter icon on the *Attribute Filters* dialog. You can view and use filters that others have shared by turning on the Shared Filters slider. Filters that others have shared have a red Shared Filter icon.
- To share a filter with one or more groups, you must have both Manage Private Attribute Filters and Manage Shared Attribute Filters rights. Turn on the **Share Filter** slider for the filter in the *Attribute Filter Management* dialog (Figure 4.3.1.5.1.1-D).

From the popup menu, click the read icon next to the groups you want to share the filter with. The read icon changes to green for selected groups.

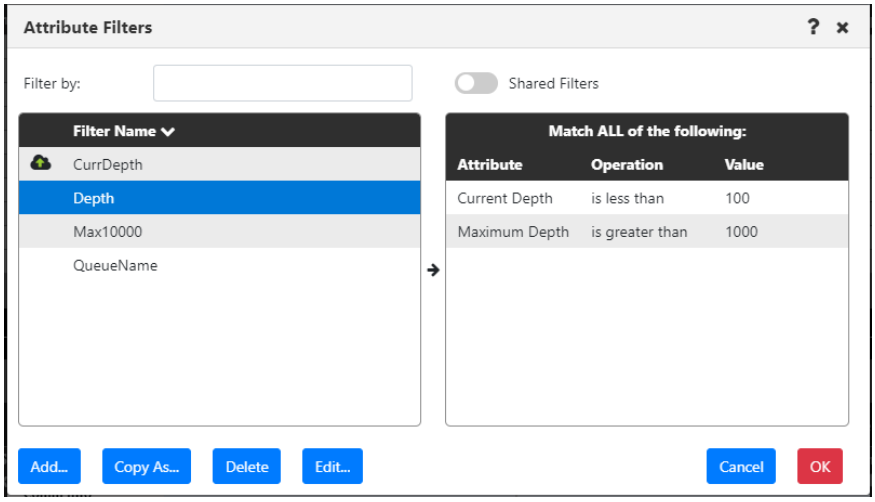


Figure 4.3.1.5.1.1-B. Attribute filters

You can search for a filter by entering part of its name in the **Filter by** field. The list is filtered automatically based on your entry.

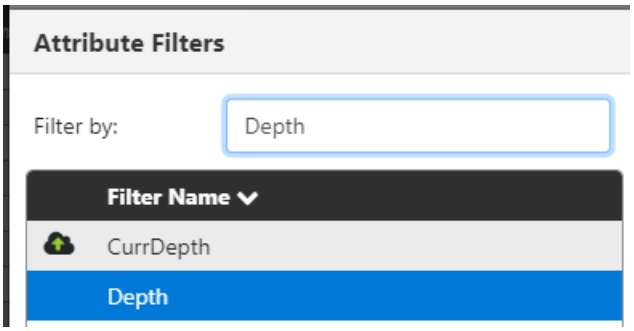


Figure 4.3.1.5.1.1-C. Attribute Filters: Filtering

To add a new filter, click the **Add** button. The *Attribute filter management* dialog box opens. Enter a name for the filter within the **Filter name** field.

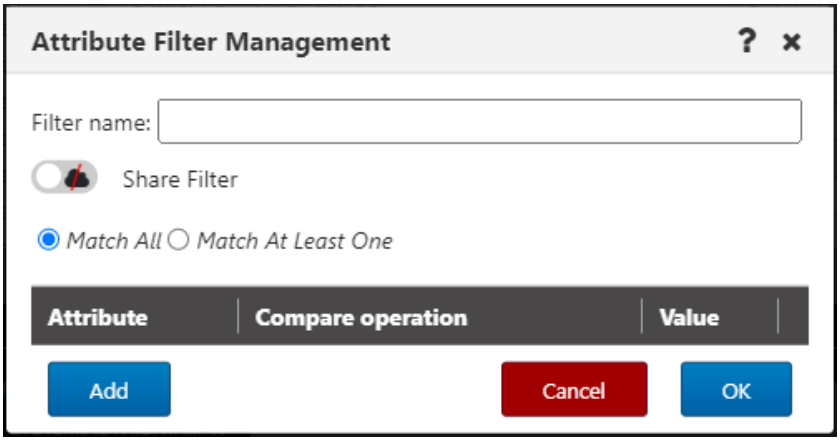


Figure 4.3.1.5.1.1-D. Add New Attribute Filter

Select one of the following radio buttons:

- **Match All**: Objects with all attributes specified by the user will be found.
- **Match At Least One**: Objects with at least one of the attributes specified by the user will be found.

Click **Add** to add one or more attributes to the new filter.

The *Available attributes* window appears. Click on an attribute to select it. Multiple attributes can be added. The background color of a selected attribute will appear green.

There are two filter methods to locate attributes more easily:

- *Filter by name.* Use the **Enter filter value** search box to search by attribute name (part of the name can be entered).
- *Filter by category.* Use the drop-down list to select the category for the attribute you are looking for. Categories are specific to the viewlet's object type (for example, queue manager categories may include *Cluster* and *Communication*; channel categories may include *Statistics* and *Monitoring*).

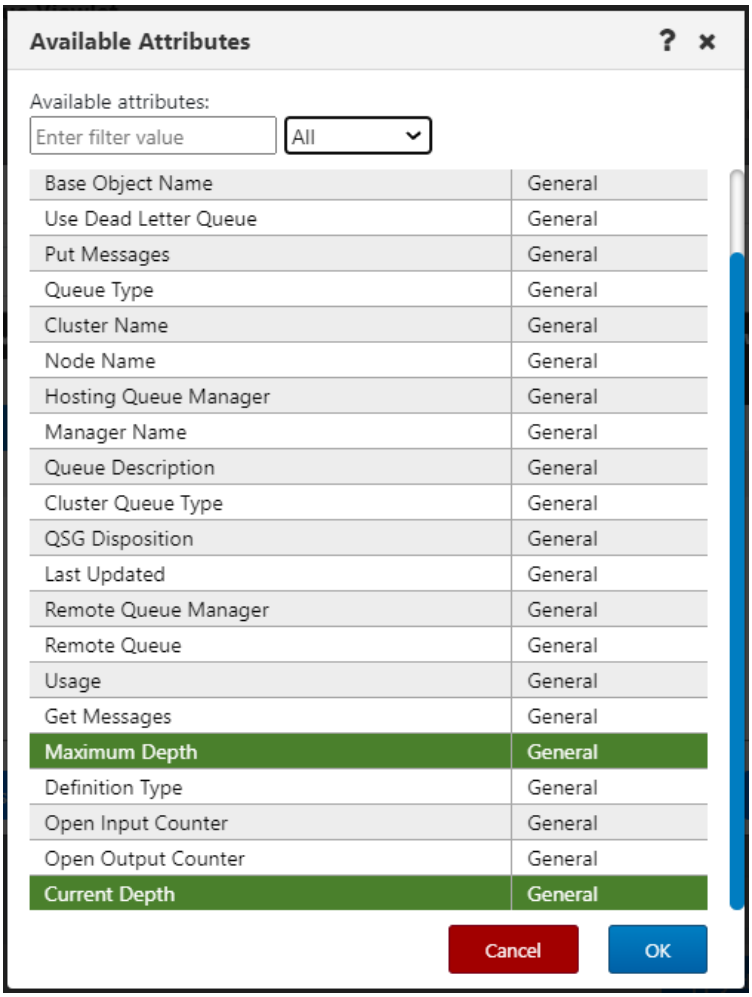


Figure 4.3.1.5.1.1-E. Available Attributes

6. Click **OK** to return to the *Attribute Filter Management* dialog. The selected attributes will need to be configured. For each attribute, select an option from the **Compare operation** drop-down. (Selections vary by data type. For example, numerical comparisons are as follows: **is equal**, **is less than**, **is greater than**, **is not equal**, **is empty**, and **is not empty**. Text comparisons are as follows: **is equal**, **is not equal**, **starts with**, **ends with**, **contains**, **not contains**, **is blank**, **is not blank**.) Then specify a **Value**. *Figure 4.3.1.5.1.1-E* below is an example. (To learn how to set attribute filter criteria on the fly with variable values, see Attribute Filter Variables.)

To remove an attribute, simply click on the red X at the end of the attribute row. Click **OK** after all attributes have been configured.

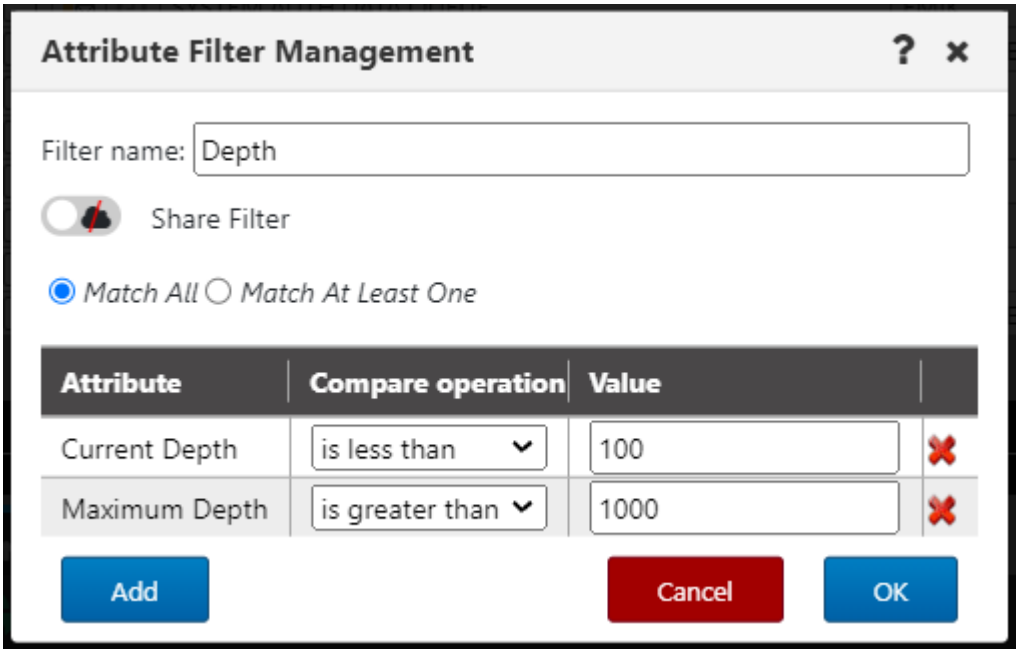


Figure 4.3.1.5.1.1-F. Configuring Attributes

The A*ttribute filters* dialog box appears. The left side of the screen displays all created filters. Click on a filter to view that filter's attributes within the content box on the right side of the screen. If all attributes must be met, the text, **Match ALL of the following**, is displayed (Figure 4.3.1.5.1.1-G.). If at least one attribute must be met, the text, **Match at least ONE of the following**, is displayed (Figure 4.3.1.5.1.1-H). This is specified when adding a new filter (Figure 4.3.1.5.1.1-D) but can be updated when configuring attributes (Figure 4.3.1.5.1.1-F).

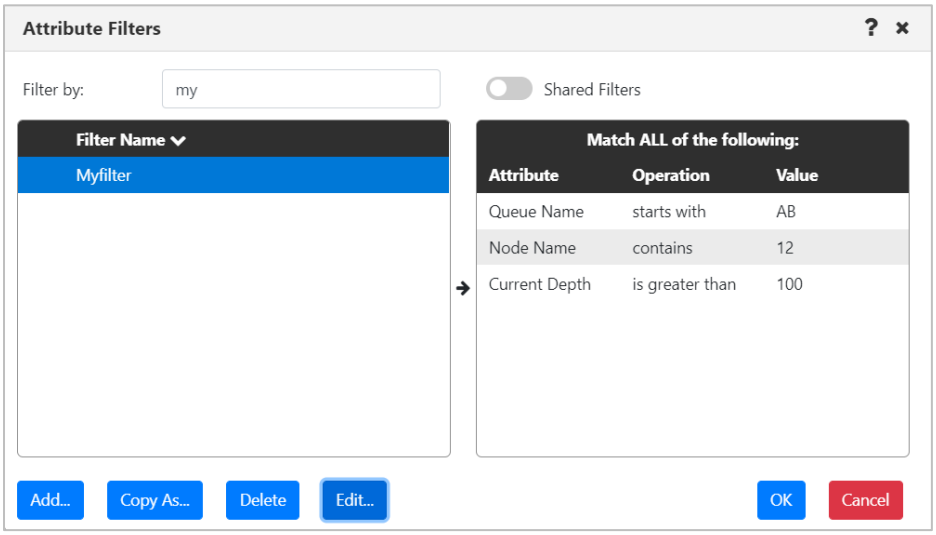


Figure 4.3.1.5.1.1-G. Attribute Filters – All Attributes

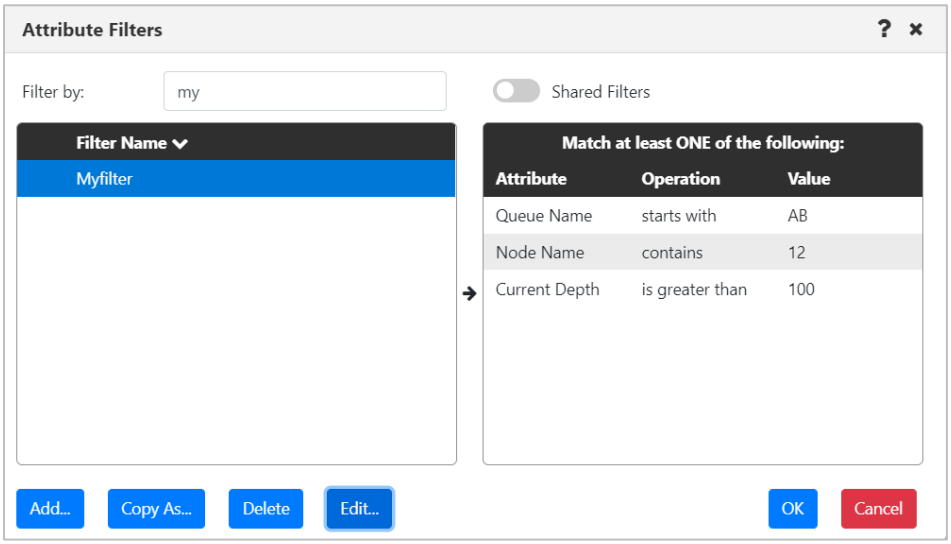


Figure 4.3.1.5.1.1-H. Attribute Filters – At Least One Attribute

To edit a filter, click **Edit** to open the *Attribute Filter Management* dialog, where you can add one or more new attributes, or modify or delete an existing attribute. Existing attributes can be deleted using the delete button.

To create a new attribute filter by modifying an existing one, select the filter that you want to start with and click **Copy As...**. The Attribute Management dialog opens. You can modify the filter that you copied, give it a new name, and click **OK**.

To delete an attribute filter, select it and click **Delete**. Click **Yes** to delete the selected attribute filter or **No** to cancel.

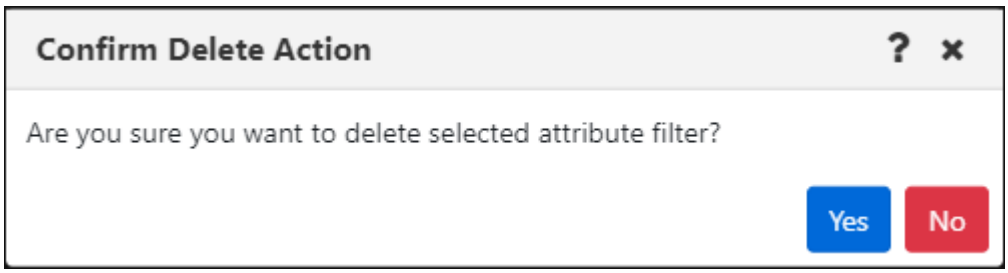


Figure 4.3.1.5.1.1-I. Confirm Delete Action

Users who have the **Manage Private Attribute Filters** right can view and manage the filters they have created by going to the User Settings Attribute Filters tab. Likewise, users with the **Manage Global Attribute Filters** right can manage global filters through the Global Settings Attribute Filters tab. See Attribute Filter Tab for more information.

If the WGS cannot retrieve any of the parameter values expected to display in the viewlet schema based on the attributes selected, a warning symbol is displayed immediately next to the viewlet menu button.

Figure 4.3.1.5.1.1-J. Warning Sign

Click on the warning symbol to view the error description window.

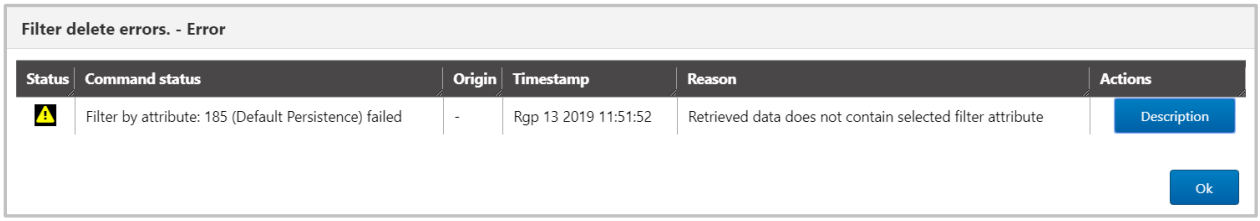


Figure 4.3.1.5.1.1-K. Error Description Window

Click on the **Description** button to view the error details. Click **Ok** to exit the window.

Figure 4.3.1.5.1.1-L. Error Details

4.3.1.5.1.1.1 Attribute Filter Variables

Set attribute filter criteria on the fly with variable values. Instead of using a hardcoded value that may need to be updated over time, you can set up a variable value in your attribute filter. Then set the variable value as needed, by clicking the Variable button on the

user interface. In the example below, an attribute filter looks for channel names that match its criteria using a text-based variable.

When setting up the attribute filter, choose *Variable* under **Value Type**. (See Figure 4.3.1.5.1.1.1-A.) (For attributes such as Node Type, whose possible values are items in a list, this option is unavailable.) Click to manage the variable. Enter the name of a new variable, or choose an existing variable to use for this attribute filter. (See Figure 4.3.1.5.1.1.1-B.) Click **OK**. The name you entered is displayed in the Value column. (See Figure 4.3.1.5.1.1.1-C.) Click **OK** to save the new attribute filter.

To filter a viewlet by applying the variable that you have set up, first make sure that the attribute filter with the variable has been applied to the viewlet and that the viewlet's **Active attribute filtering** checkbox is selected. Then On the main interface, click the **Variable** button to set the criteria that the attribute filter will look for. In the example created earlier in this article, the variable is for text. (See Figure 4.3.1.5.1.1.1-D.)

Enter the text in the Modify Variables dialog (see Figure 4.3.1.5.1.1.1-E). Click **Save** to apply the variable. (See Figure 4.3.1.5.1.1.1-F.)

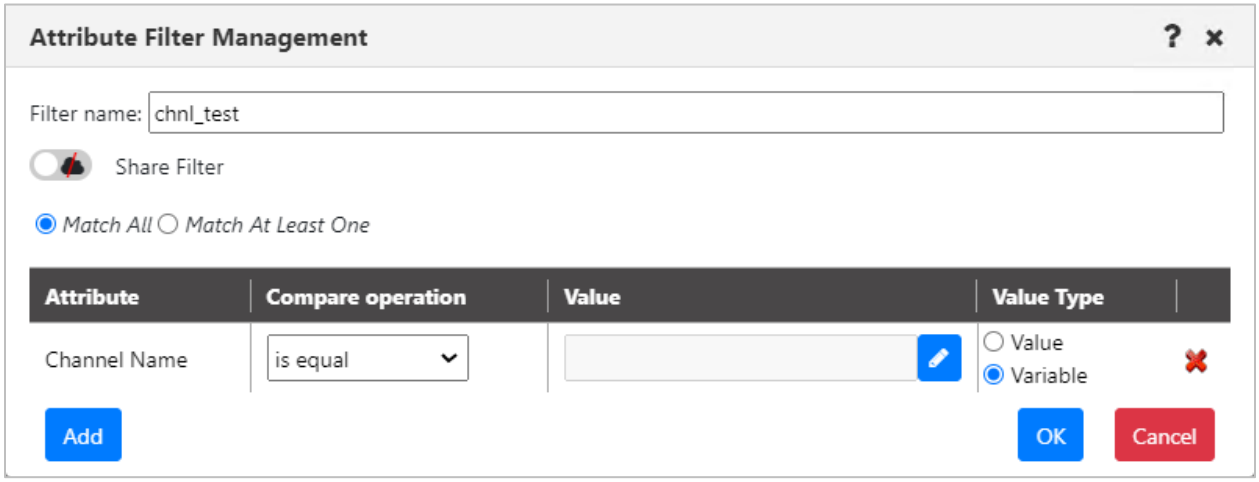


Figure 4.3.1.5.1.1.1-A Attribute Variable Option

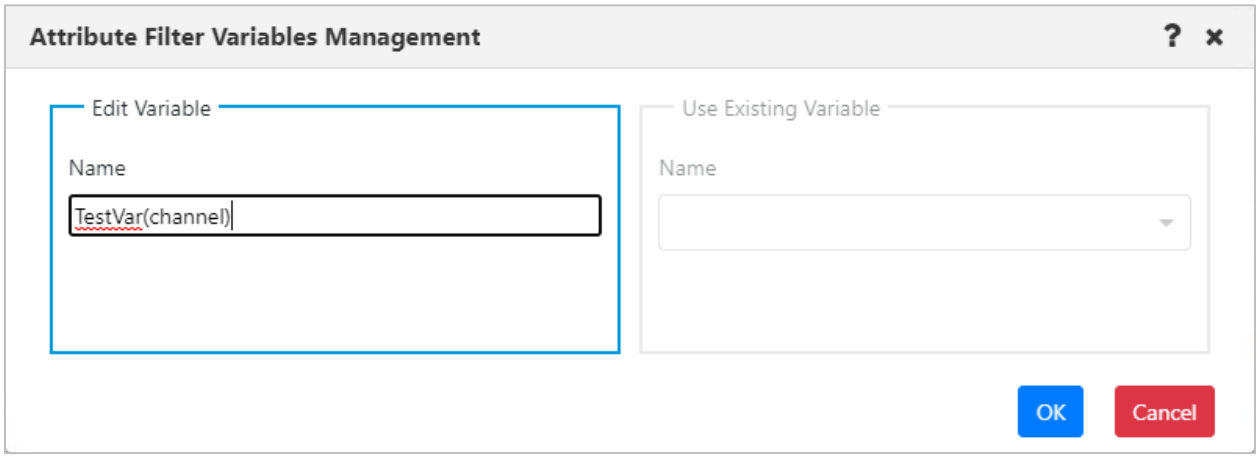


Figure 4.3.1.5.1.1.1-B. Attribute Filter Variables Management

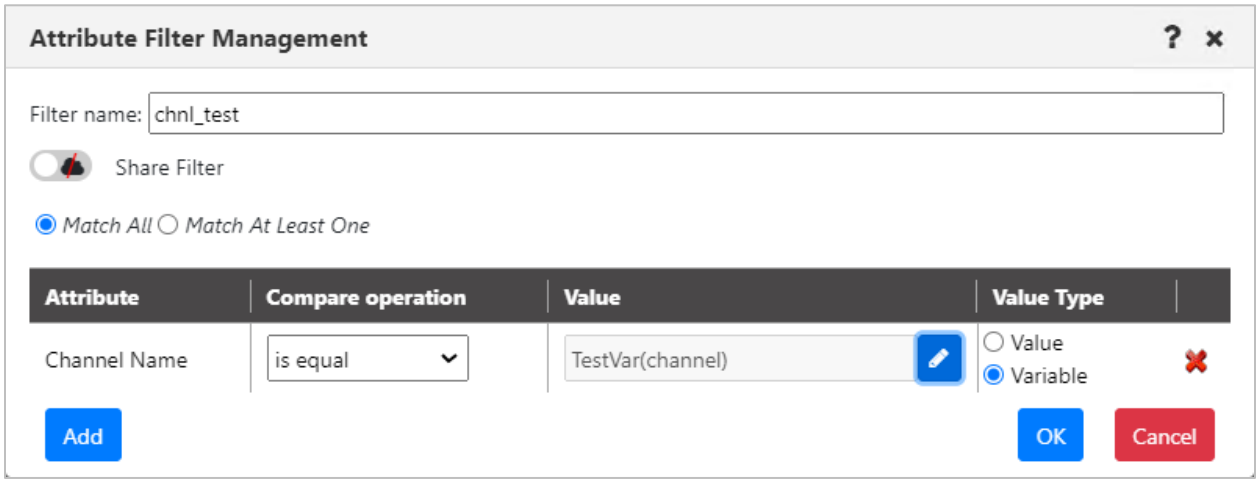


Figure 4.3.1.5.1.1.1-C. Attribute Filter Management with Variable Value

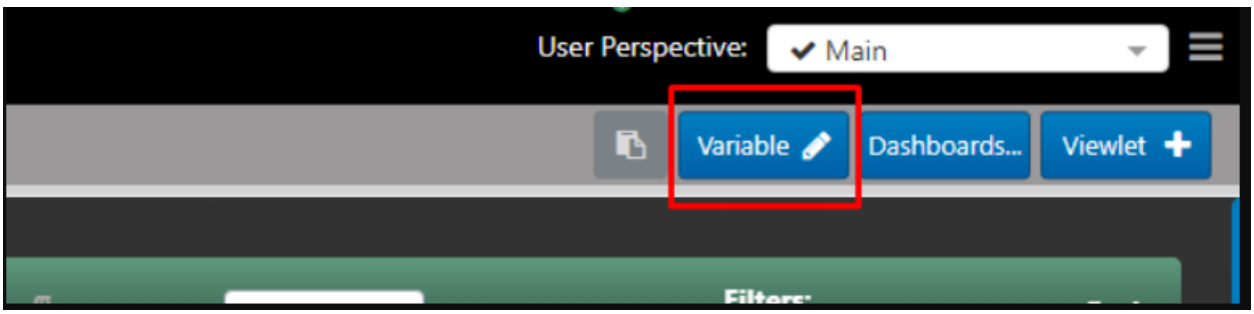


Figure 4.3.1.5.1.1.1-D. Attribute Filter Variable Button

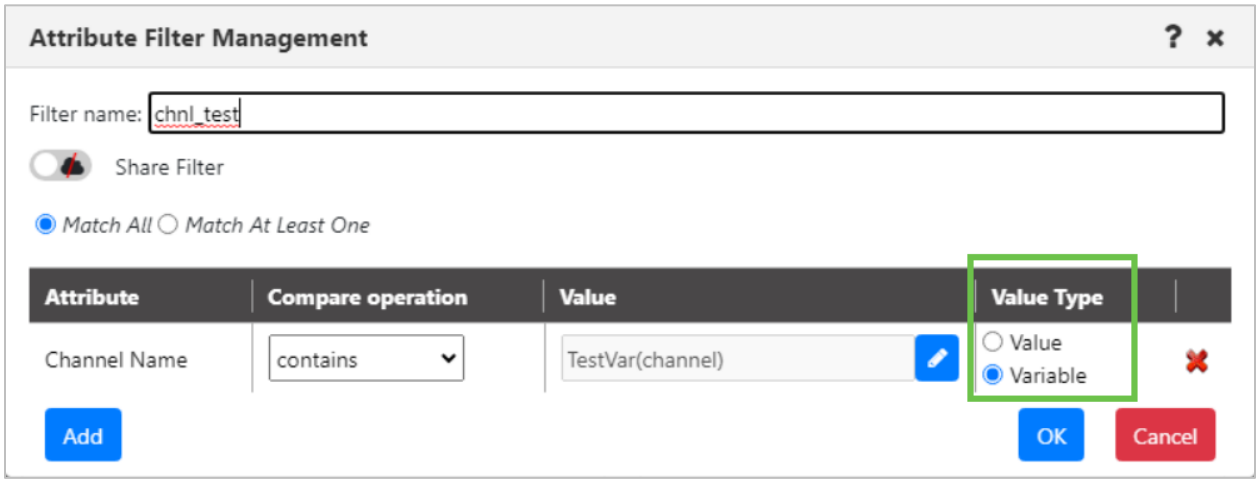


Figure 4.3.1.5.1.1.1-E. Attribute Filter Management Value Type

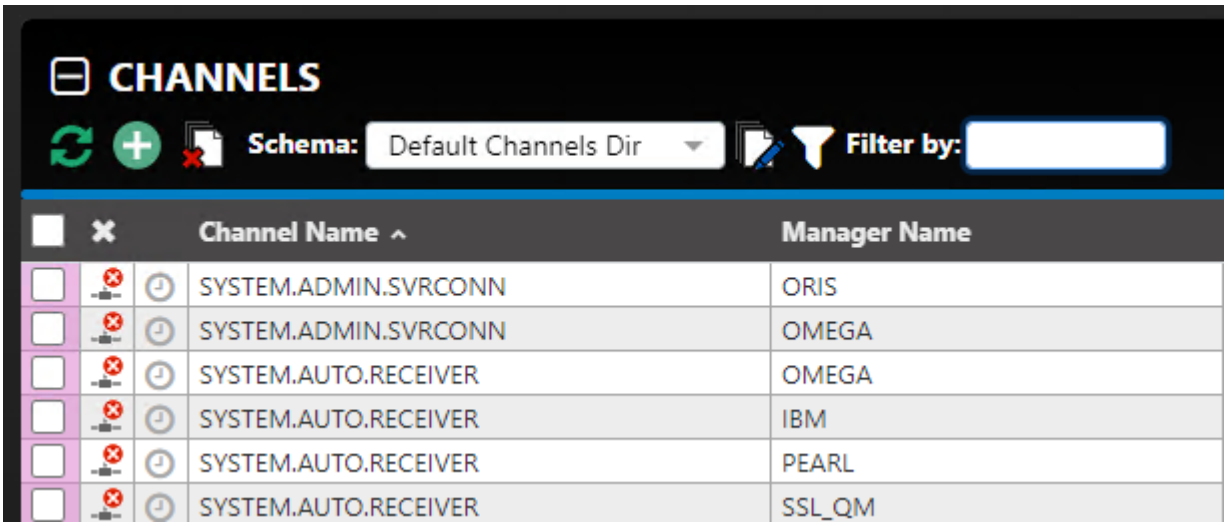


Figure 4.3.1.5.1.1.1-F. Filtered Channels Viewlet

4.3.1.5.1.2 Find Messages

Within the *Edit Queue * viewlet* window (or *Create New Queue Viewlet*, see *Figure 4.3.1.1-A*), users can filter queues by messages containing specific data.

The Find Messages feature has two components:

- Search criteria, which limit the results that will be returned from the workgroup server according to the contents of individual messages. Search criteria are saved for easy retrieval and can also be used for actions such as Put New, Copy All, Move All, and Delete All.
- The Find Messages checkbox, which applies the Search criteria, enabling the message search criteria at the source (that is, the workgroup server).

NOTE

If you use the Find Messages option, it is recommended that you also use the fields provided to narrow results by Queue name (Object name), Project name, or other parameters. This makes your search more efficient by limiting the amount of data being searched.

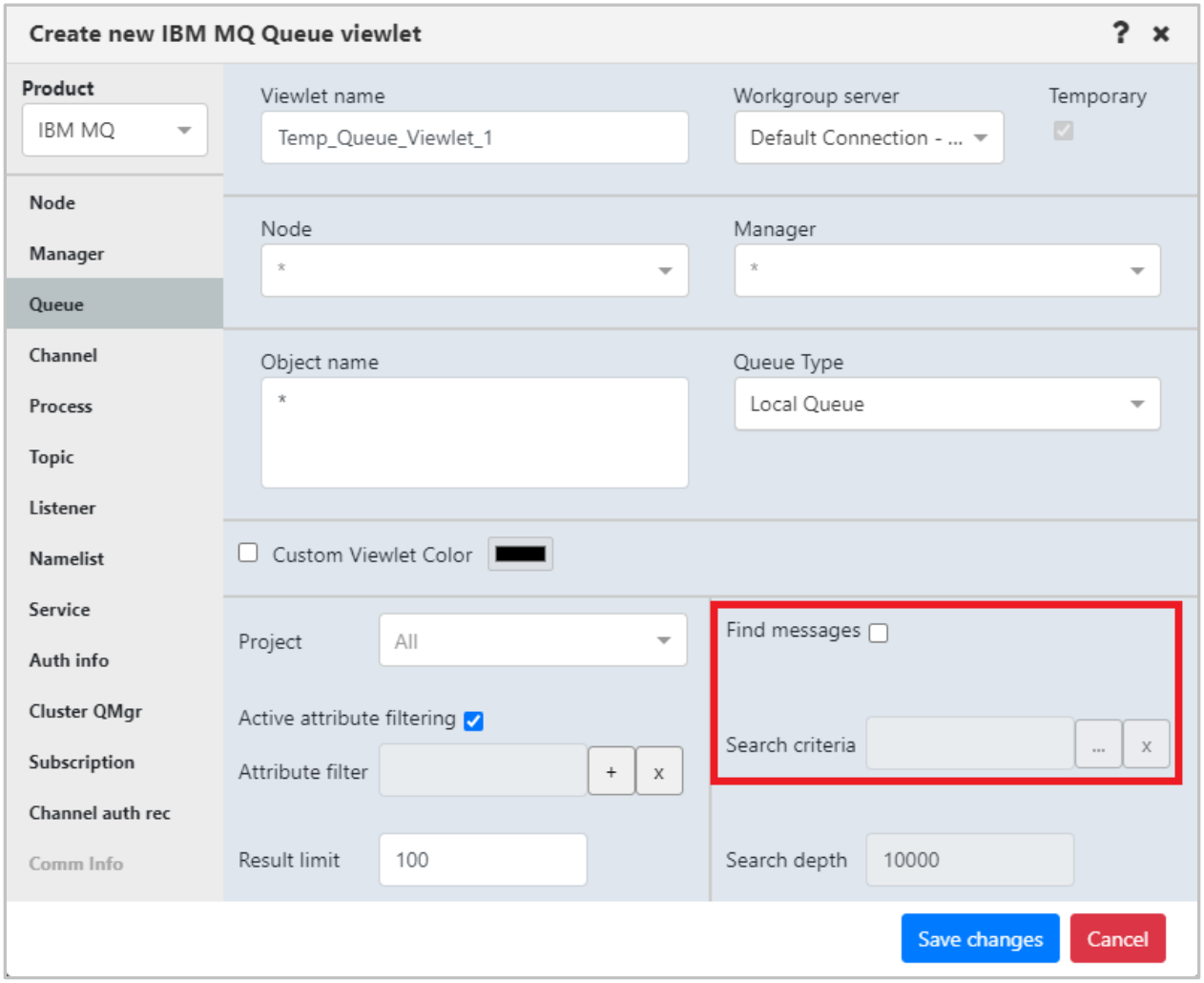


Figure 4.3.1.5.1.2-A. Find Messages

To add, edit, and delete criteria records, you must have the **Manage Private Message Criteria** right in the security application. To add criteria, click the ellipses button ... of the **Search Criteria** field. The following dialog box opens.

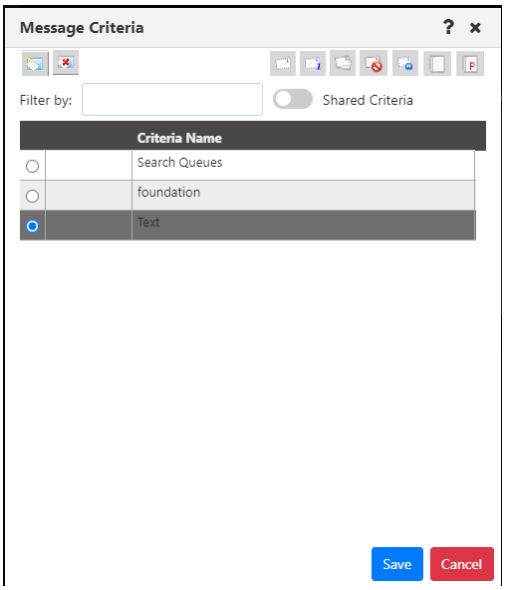


Figure 4.3.1.4.1.2-B. Message Criteria

To add new search criteria, click . A new search criteria row is added. Double-click the new row and enter a name for the record. Press **Tab** on your keyboard.

The data to search for will need to be added to the search criteria record created above.

Make sure that the message criteria record is selected, then click the Data button to specify the data.

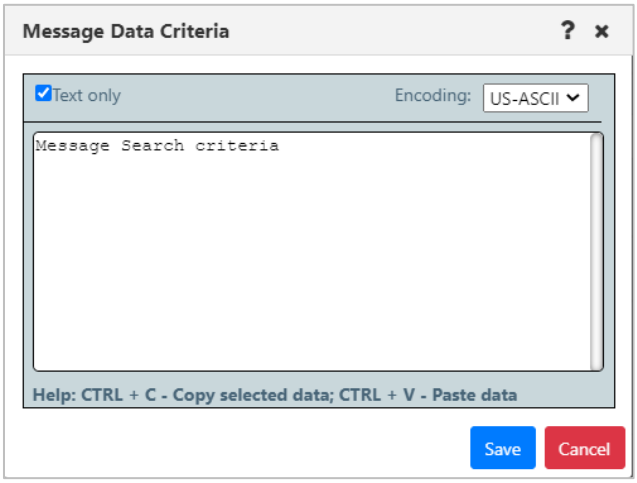
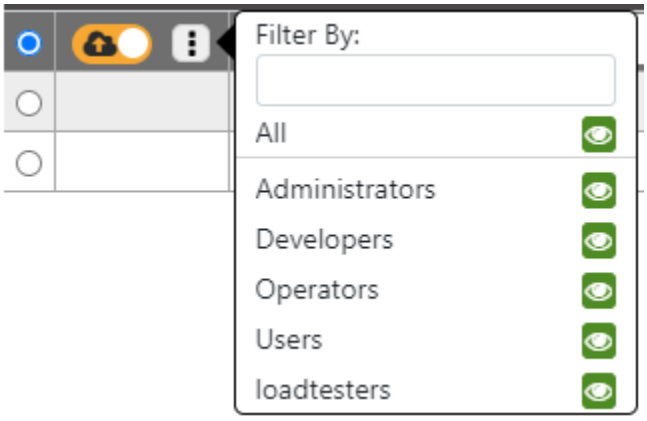


Figure 4.3.1.4.1.2-E. Enter Data

Click **Save**. Additional search criteria records can be added by repeating the previous step.

To share criteria records with groups, you must have both the **Manage Private Message Criteria** and the **Manage Shared Message Criteria** rights in the security application. To share any record with one or more groups, double-click its name. The Private icon is displayed in front of the name of the record. Click the Private icon to share the record. The icon changes to a Shared icon. From the popup menu, click the read icon next to the groups you want to share the dashboard with. The read icon changes to green for selected groups.



To apply search criteria, select the search criteria record you want to use and click **Save**. (If you are accessing the Message Criteria dialog when editing a viewlet, you can view shared records by turning on the Shared Criteria slider.)

Back on the *Edit Queue viewlet* window, make sure that the Find messages checkbox is selected so that your search criteria take effect. The criteria record you selected is displayed in the Search Criteria box. Click **Apply Changes**. The viewlet will display only the queues with messages containing the data specified in the search criteria.

To limit the number of records that will be searched within each queue manager, you can specify a value within the **Search depth** field. Click **Apply Changes**. The Search Depth can be applied independently of the Search criteria, or alongside it.

To turn off the data message filter that is displayed, click the **X** to the right of the **Search Criteria** field. To completely disable filtering by message content, clear the **Find messages** checkbox.

To delete a search criteria record that you no longer need, select it on the Message Criteria window and click the delete button.

4.3.1.5.2 Remove Viewlet

Selecting **Remove viewlet** from the viewlet menu (*Figure 4.3.1.4-A*) will remove the viewlet from your dashboard. It will still be available to add back at any time (see section, *Adding and Managing Viewlets*, for information on adding an existing viewlet).

4.3.1.5.3 Delete Viewlet

To delete a viewlet select **Delete viewlet** from the viewlet menu (*Figure 4.3.1.4-A*). The following dialog box opens to confirm the delete action.

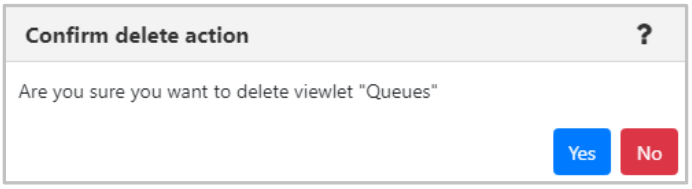


Figure 4.3.1.4.3-A. Confirm Delete Action

4.3.1.5.4 Export data to CSV

Selecting **Export data to CSV** from the viewlet menu (*Figure 4.3.1.4-A*) will export all data displayed in the viewlet to a CSV file. The file will automatically download. By default, the export file includes extra whitespace (from one to three spaces) after the Manager Name, Node Name, and other fields. When you choose the export option, a prompt is displayed to ask you whether you want to remove (strip) the extra whitespace. To remove it, click **Yes**.

4.3.1.5.5 Export viewlet to file

Selecting **Export viewlet to file** from the viewlet menu (*Figure 4.3.1.4-A*) will export all viewlet properties to a JSON file. The file will automatically download. You can then share this file with others, who can import it. See Import a Viewlet from a File.

4.3.1.5.6 Force Refresh (Viewlet)

NOTE The Force Refresh option is currently only available for queue viewlets of 100 rows or fewer.

When you know you'll need to force a refresh of viewlet data several times in a row (for example, if a problem with the queues requires you to view the latest Current Depth right away), you can turn on Force Refresh mode by selecting **Enable Force Refresh** from the viewlet's menu. This mode allows you to force update the data in the entire viewlet, just as you would do for one queue or a few queues, but using a simpler, more efficient method.

In this temporary alternate mode, the green refresh icon becomes a blue force refresh icon. Unlike the green refresh icon, which refreshes the data from the cache, this force refresh icon obtains the latest data from the workgroup server.

You can use the blue Force Refresh icon as many as five additional times. After these additional refreshes (or after a browser refresh), the normal refresh mode and green icon return. You can reinitiate Force Refresh mode by selecting **Enable Force Refresh** from the viewlet's menu again.

You can exit Force Refresh mode at any time by selecting **Disable Force Refresh** from the viewlet's menu.

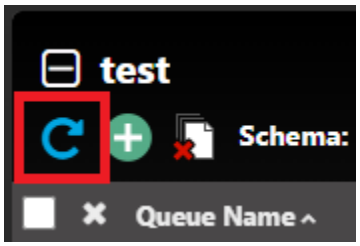


Figure 4.3.1.5.6-A. Force Refresh Button

4.3.1.5.7 Manage Filtered Columns

By managing filtered columns in a viewlet, you can tailor the use of the **Filter by** box to your specific needs. Instead of using it to filter viewlet data by all columns only (its default behavior), you can choose one or more specific columns to apply the filter to. For example, you can specify the Put column for filtering, so that a filter for "Allowed" returns only records for which the Put action is allowed.

To manage filtered columns, a user must either be the creator of the viewlet or, for viewlets on shared dashboards, have "write" permission for the viewlet. After filtered columns have been selected for a viewlet, all users of the viewlet can choose whether to filter by the selected columns or by all columns (see *Choose a filter method* below).

4.3.1.5.7.1 Manage filtered columns

1. Select **Manage Filtered Columns** from the viewlet's menu to allow individual columns to be selected for filtering.
2. To indicate which columns you want the viewlet data to be filtered by, click the filter icons

next to the column headers. When filtering viewlet data, users can still choose whether or not to use these columns exclusively. See *Choose a filter method* below.

4.3.1.5.7.2 Clear all column-specific filters

While in Manage Filtered Columns mode, to "reset" or clear the green filter icons from all columns, click the **Clear All Selected Filters** button. The filter icons for all columns will turn grey

.

4.3.1.5.7.3 Turn off individual column filtering

To stop managing which columns are filtered, select **Stop Managing Filtered Columns** from the viewlet's menu. Columns that have been selected for filtering retain the green icons. When filtering viewlet data, users can still choose whether or not to use these columns exclusively. See *Choose a filter method* below.

4.3.1.5.7.4 Choose a filter method

The filter icon in front of the **Filter by:** label allows you to toggle between filtering by all columns and filtering by selected columns:

- Click this white filter icon to switch to **Filter by Chosen** mode. This icon turns green. Records are filtered by the values in the selected columns (those with the green filter icons) only.
- To revert to filtering by all columns, click the filter icon again. It becomes a white **Filter by All** icon. The **Filter by** box will apply to values in all columns.

Enter a filter value in the **Filter By** box to filter records as you type.

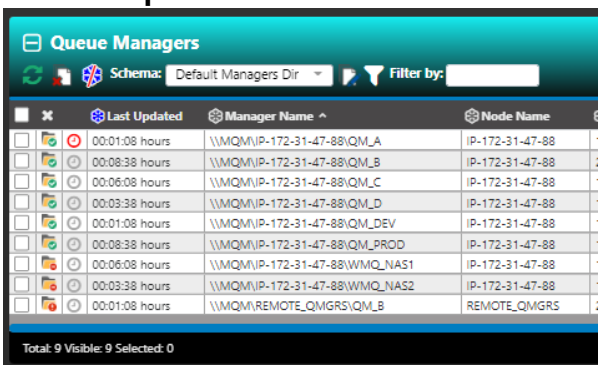
4.3.1.5.8 Manage Frozen Columns

By freezing columns in a viewlet, you can keep important columns on the left side of the viewlet no matter how far you scroll to the right, without changing your schema. Frozen columns will remain frozen (on the left side) until they are unfrozen.

To manage frozen columns, a user must either be the creator of the viewlet or, for viewlets on shared dashboards, have "write" permission for the viewlet.

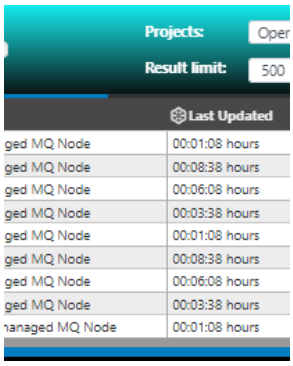
4.3.1.5.8.1 Manage frozen columns

1. Select **Manage Frozen Columns** from the viewlet's menu to enable individual columns to be frozen or unfrozen.
2. Choose which columns you want to freeze or unfreeze.
   - To select a column to freeze, click the **Freeze pane** icon next to its column header. The column moves to the left, and its icon becomes a blue **Unfreeze pane** icon.



   - To select a column to unfreeze, click the blue **Unfreeze pane** icon next to its column header. The column moves to its assigned position in the schema,

and its icon becomes a grey **Freeze pane** icon .

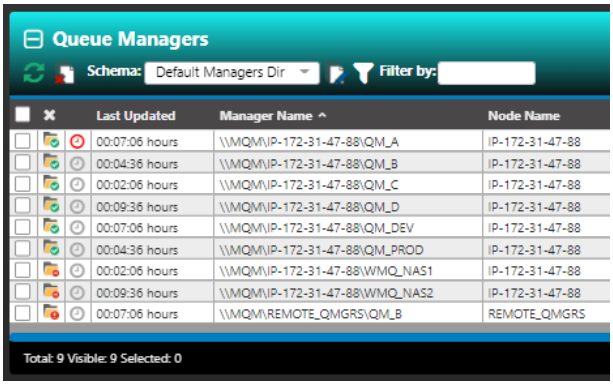


4.3.1.5.8.2 Clear all frozen columns

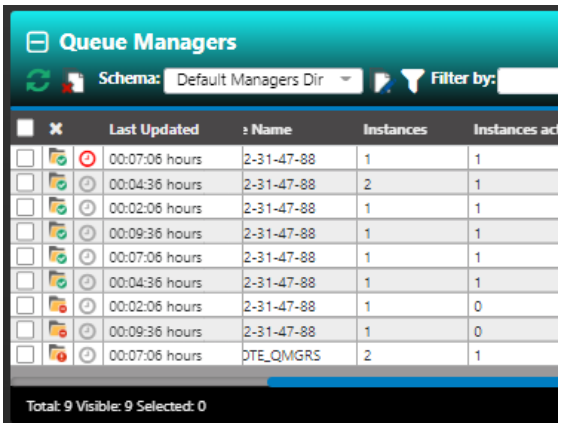
To clear all frozen columns, click the **Clear All Frozen Columns** button. The frozen columns revert to their assigned based on the schema. All icons revert to grey **Freeze pane** icons.

4.3.1.5.8.3 Turn off frozen column management

To turn off all frozen icons for individual columns, select **Stop Managing Frozen Columns** from the viewlet's menu. The **Freeze pane**, **Unfreeze pane**, and **Clear All Frozen Columns** icons are no longer available. After one or more frozen columns have been set for a viewlet, all users of the viewlet will see them on the leftmost side of the viewlet.



Frozen columns remain in place, even when you scroll to the right:



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4.3.1.6 Action Pop-Up Menu

When you click on the square immediately to the left of an object within a viewlet, the action pop-up menu opens. Please see *Appendix C* for an explanation of these options. The box will remain checked until the viewlet is collapsed, you change dashboards or click on the checkbox.

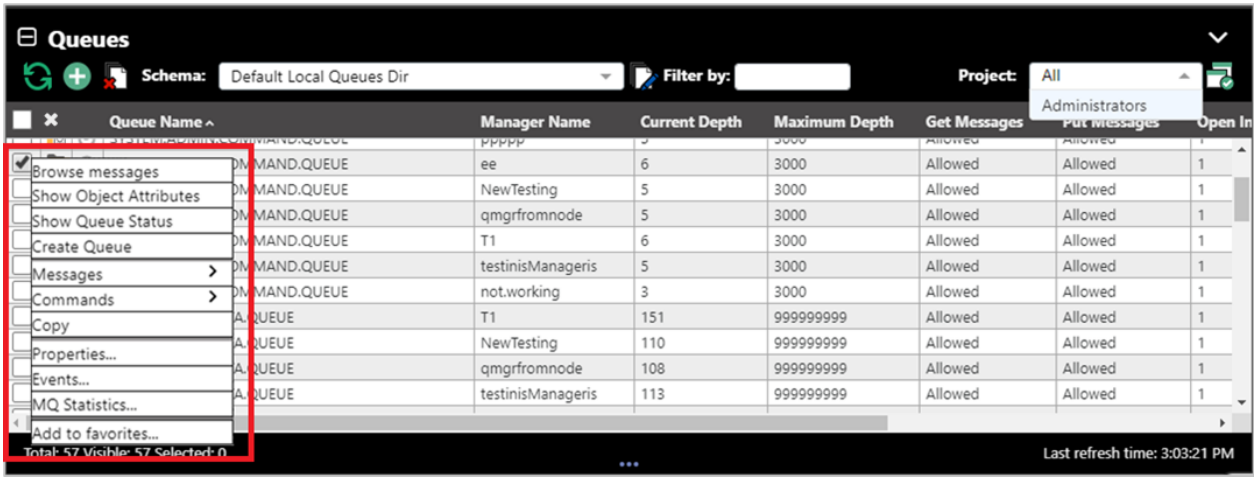

Figure 4.3.1.6-A. Action Pop-Up Menu

Note that the menu is transparent when your mouse is not hovering over the menu. This makes it easier to view other objects when selecting multiple objects.

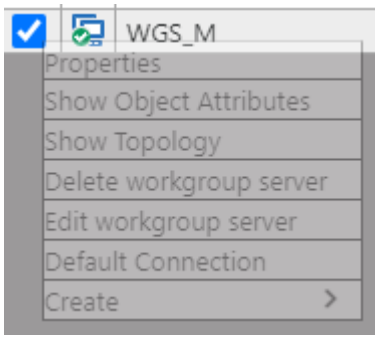

Figure 4.3.1.6-B. Transparent Menu

The drop-down menu becomes fully visible when your mouse is hovering over it.

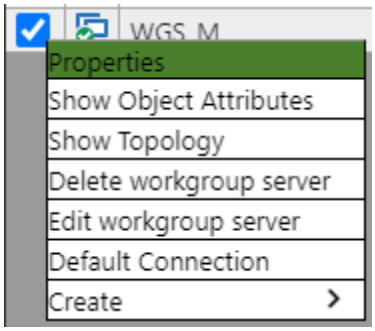

Figure 4.3.1.6-C. Fully Visible Menu

When multiple objects are selected, you can click on the in the header to uncheck all selected objects.

You can check the header check box ☐ to select all objects in the viewlet and uncheck it to deselect all objects.

> NOTE
> The header check box may not be available if there are too many objects in the viewlet. The number of queue managers that can be selected in this way is limited by the Bulk Select Max options: Restricted objects global user setting. The number of other objects in a viewlet that can be selected in this way is limited by the General objects setting.

4.3.2 Nodes

There can be multiple nodes in a workgroup server (see *Create a Node* for information on how to create a node). The nodes are the access points for the queue managers and EMS brokers. A workgroup server's nodes can be viewed on the **WorkSpace** dashboard. There will be a node viewlet for each workgroup server. You can create a new schema to add, remove, or rearrange displayed columns as you see fit. See *Schemas* for instructions.

A green circle with a white checkmark shows that the node is active, and a red circle with an exclamation mark means that the node is stopped, or its state is unknown.

The following screenshot displays the pop-up menu options of node objects. Please see *Appendix C* for an explanation of these options.

> NOTE
> Your pop-up menu options may differ according to your user permissions, which are managed by an admin.

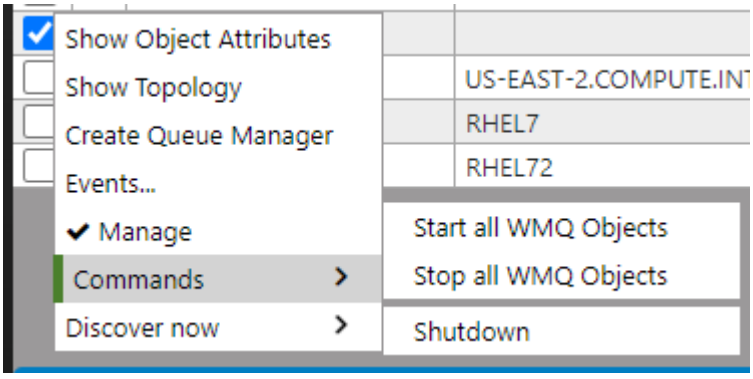

Figure 4.3.2-A. Nodes Pop-Up Menu

4.3.2.1 Manage Nodes

The **Manage** option marks whether a node is managed. When a node is inactive, uncheck the **Manage** option in the pop-up menu and check it again – this will start the inactive node. To stop a node, perform the opposite – uncheck the **Manage** option. When the node is not managed, it can be deleted, or its properties can be modified.

When the node is managed, it can also be discovered. See *Appendix C* for more information on discovery modes.

If you select multiple nodes, you are presented with the **Compare** option. Select this option to launch a viewlet displaying similarities and differences between the selected nodes (see the Comparing Objects section for more information). If you selected unmanaged nodes, you also have the option to delete the selected nodes.

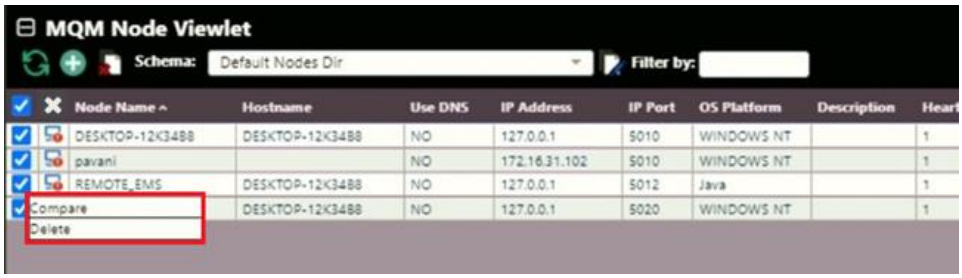

Figure 4.3.2-B. Multiple Nodes Selected

4.3.2.2 Starting / Stopping all WMQ Objects (Nodes)

To start or stop WMQ objects on nodes, or shut down a node, select **Commands** > **Start all WMQ objects** or **Stop all WMQ objects** from the selected node's action menu (Figure 4.3.2-A).

Start All WMQ Objects

To start the node's WMQ objects, select **Commands** > **Start all WMQ objects**.

You can select **Start channels**, **Start an instance of a multi-instance queue manager**, or both. Click **Yes** to continue, or **No** to cancel.

For more information on multi-instance queue managers, please go to the IBM Knowledge Center:

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.con.doc/q018140_.htm

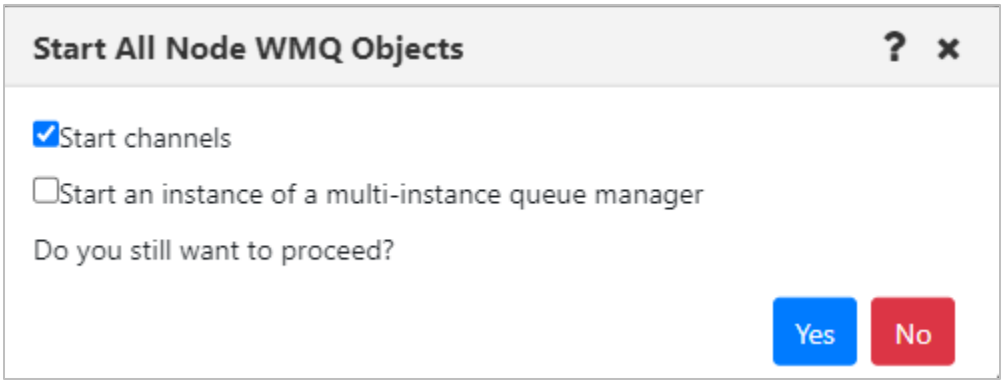

Figure 4.3.2.2-A. Start All Node WMQ Objects

Stop All WMQ Objects

To stop the node's WMQ objects, select **Commands** > **Stop all WMQ objects**. Click **Yes** to continue, or **No** to cancel.

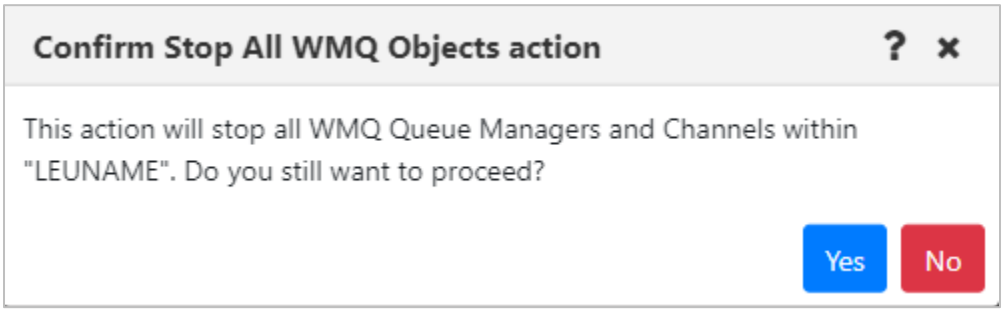

Figure 4.3.2.2-B Confirm Stop All Node WMQ Objects

Shut Down the Node

To fully stop the node, select **Commands** > **Shutdown**. Click **Yes** to continue, or **No** to cancel.

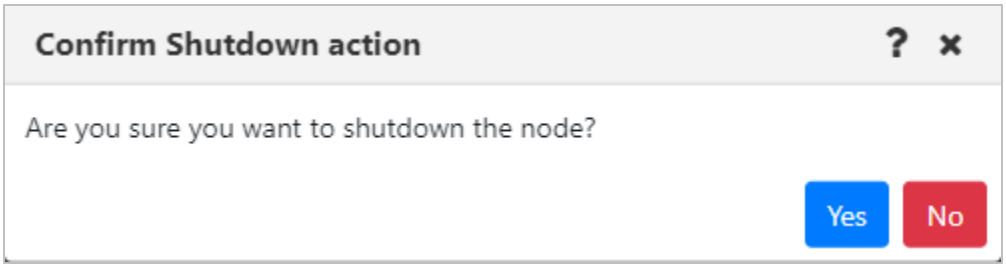

Figure 4.3.2.2-C Confirm Node Shutdown

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4.3.3 Managers

4.3.3.1 Queue Managers

To view queue managers, create a viewlet (see *Adding and Maintaining Viewlets* for more information). The viewlet toolbar includes a refresh viewlet button. It also includes **Default schema** drop-down options and the ability to create a new schema or edit an existing schema. For more information on schemas, please see *Customizing Viewlets* (section *4.3.7*).

You can view a queue manager's path by hovering over its name. Select a queue manager to display the action menu. The menu options are described in *Appendix C*.

> NOTE
> Your pop-up menu options may differ according to your user permissions, which are managed by an admin.

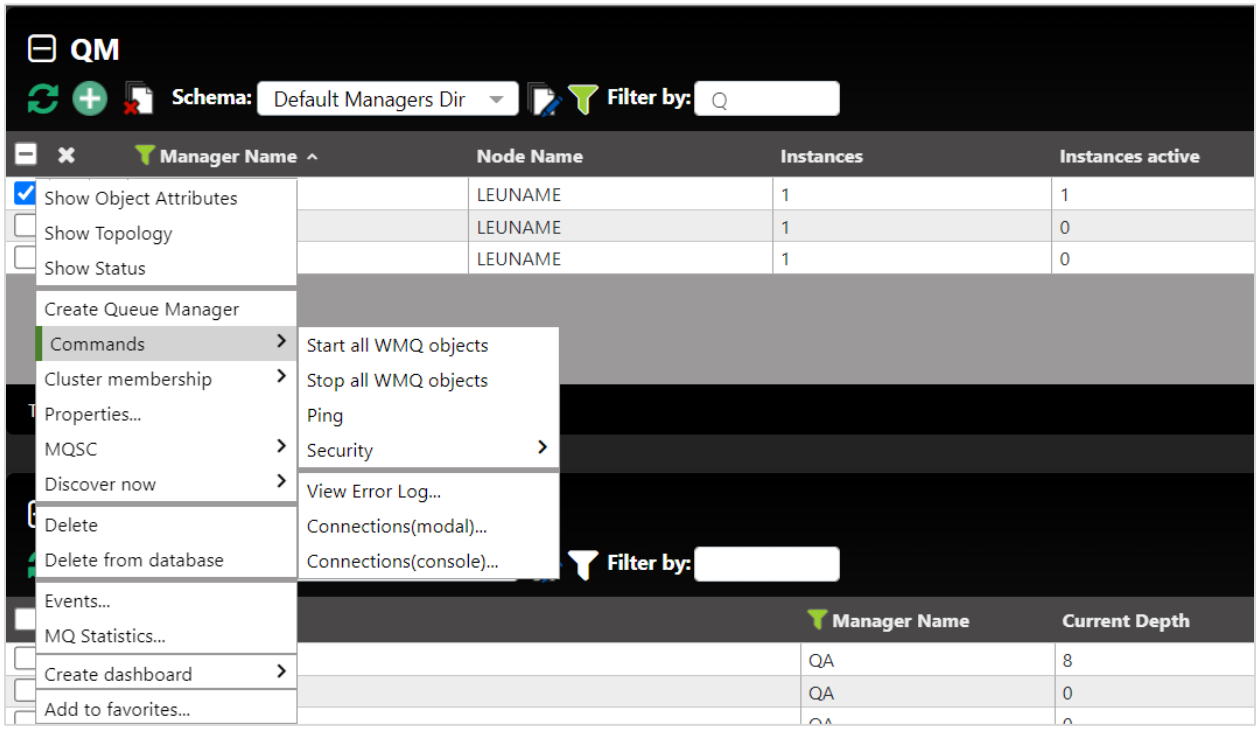

Figure 4.3.3.1-A. Queue Manager Viewlet

A queue manager's state is represented by the folder icon appearing before its name. Refer to the table below for the meaning of each folder icon. You can add the **Queue manager state** and **State** columns to the viewlet's schema to display a more detailed state (*Figure 4.3.3.1-B*).

Table 4.3.3.1-A. Queue Manager States

Icon	Possible States
	• Unknown state

Table 4.3.3.1-A. Queue Manager States	
Icon	**Possible States**
	• Running / active • Running as standby
	• Ending immediately • Ending preemptively • Stopped
	• Updating state
	• Starting
	• Status not available • Ended normally • Ended immediately • Ended unexpectedly • Ended preemptively
	• Quiescing • Running elsewhere

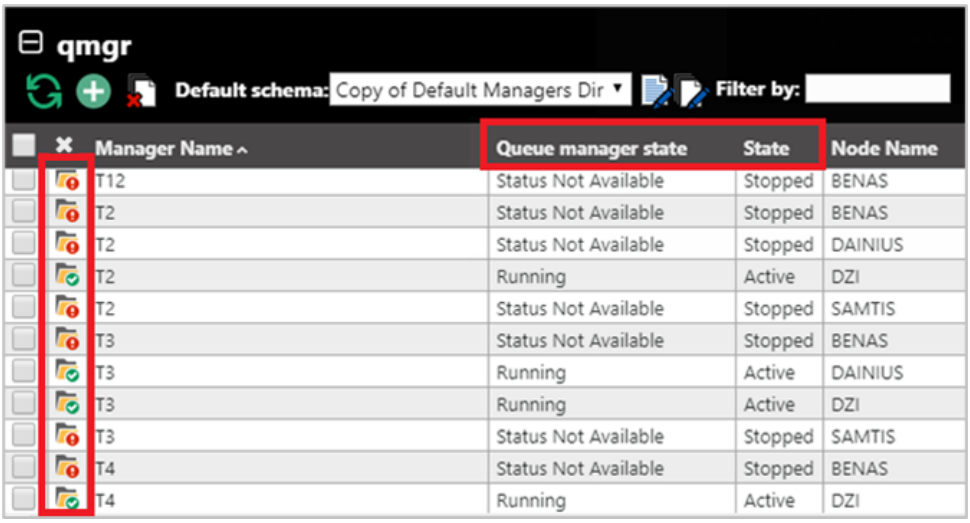

Figure 4.3.3.1-B. Queue Manager States

4.3.3.1.1 Attributes

When **Show Object Attributes** is selected from a queue manager's action menu (*Figure 4.3.3.1-A*), the *Attributes* viewlet opens. This viewlet displays the attributes of the selected object. Scroll down to see additional attributes.

To export the attributes of the selected object, click the **Save Table as CSV** button. A file called exported_compare_attributes.csv is generated and downloaded through your browser. The file can be saved or opened.

You can also search the list to find specific attributes or values. Enter part or all of the attribute name or value in the box provided. The first record that matches the value you entered is highlighted. You can then browse through matches using the right and left arrows.

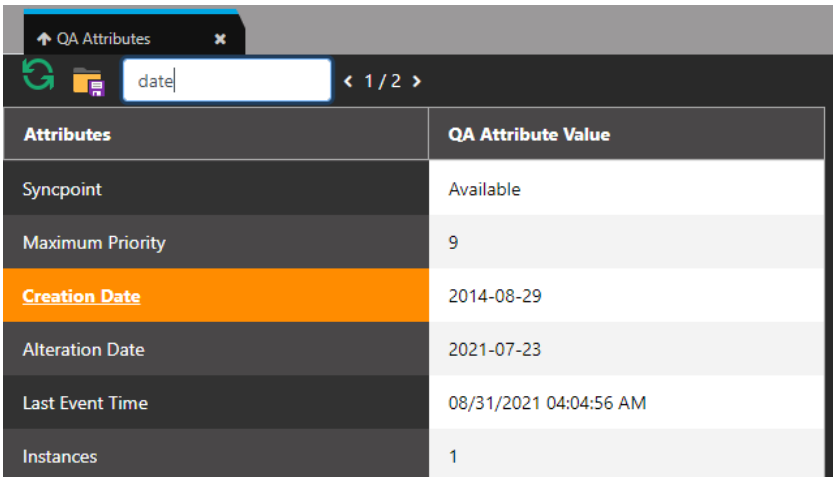

Figure 4.3.3.1.1-A. Queue Manager Attributes

4.3.3.1.2 Starting / Stopping all WMQ Objects (Queue Managers)

To start or shutdown queue managers, select **Commands** > **Start all WMQ objects** or **Stop all WMQ objects** from the selected queue manager's action menu (*Figure 4.3.3.1-A*).

Start Queue Manager

The following dialog box is displayed when **Start all WMQ objects** is selected. You can select **Start channels** and/or **Start an instance of a multi-instance queue manager** by clicking the check boxes.

For more information on multi-instance queue managers, please go to the IBM Knowledge Center:
https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.con.doc/q018140_.htm

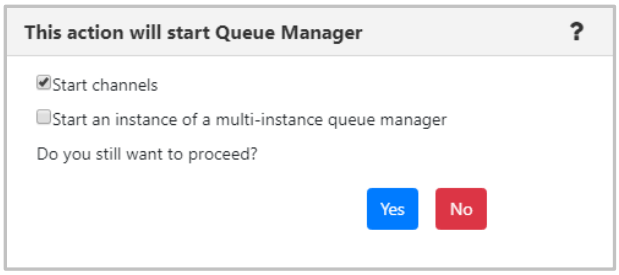

Figure 4.3.3.1.2-A. Start Queue Manager

Stop Queue Manager

When **Stop all WMQ objects** is selected, the following dialog box is displayed where you can select the shutdown method.

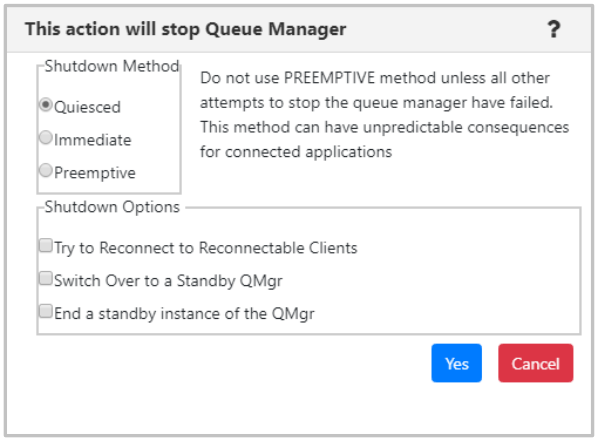

Figure 4.3.3.1.2-B. Stop Queue Manager

4.3.3.1.3 Properties

When **Properties** is selected from the queue manager's action menu (*Figure 4.3.3.1-A*), the *Properties* window for the selected object is displayed. For detailed descriptions of the various input fields and tabs, go to the IBM Knowledge Center:

https://www.ibm.com/docs/en/ibm-mq/9.2?topic=properties-queue-manager#e_properties_qmanager

See *Custom Attributes* for information on adding custom attributes to a queue manager (done on the **Custom Attributes** tab).

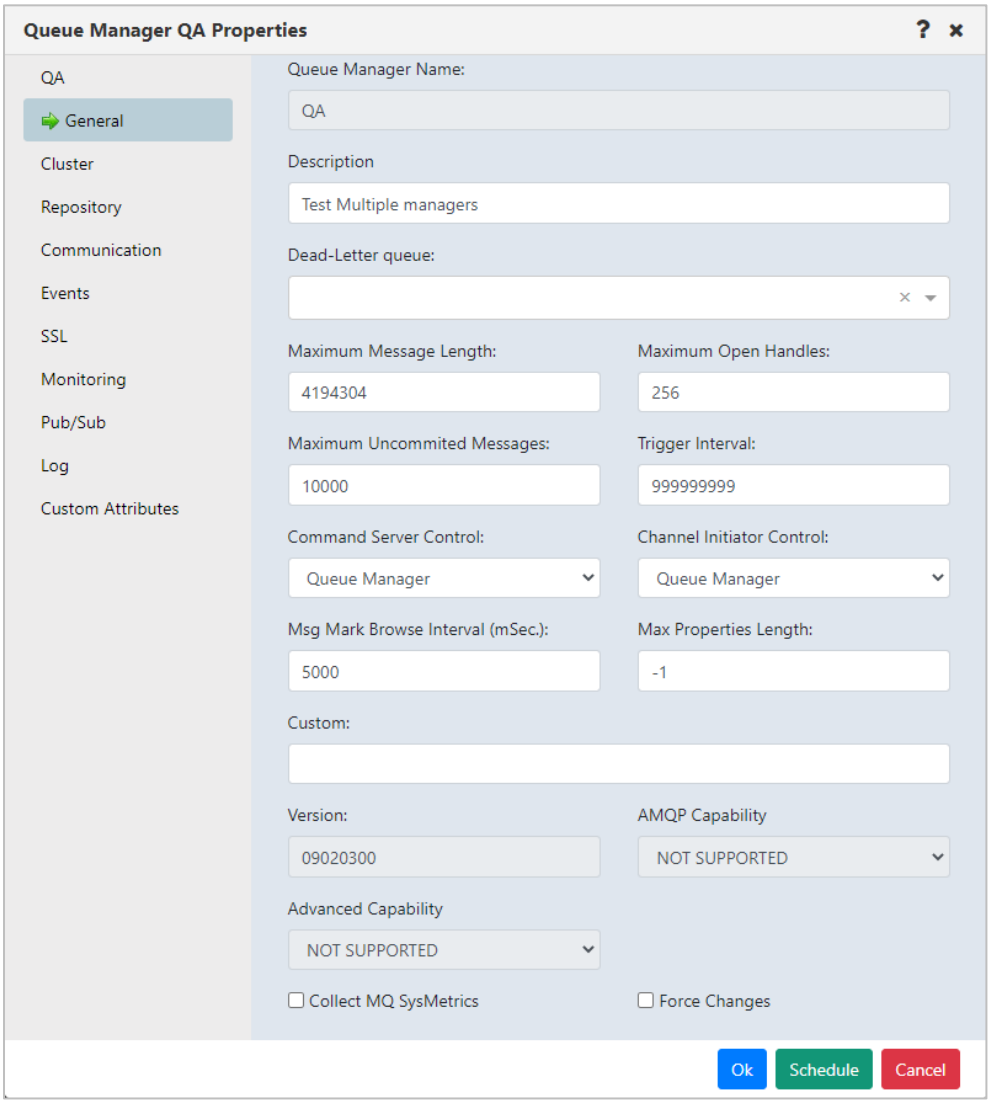

Figure 4.3.3.1.3-A. Queue Manager Properties

4.3.3.1.4 Events

When Events is selected from the queue manager's action menu (*Figure 4.3.3.1-A*), the *Events* viewlet opens. The viewlet displays middleware and APMW events, in real time. The **Event #** provides the event number within its category number. Click this number to display the *Event Details* window.

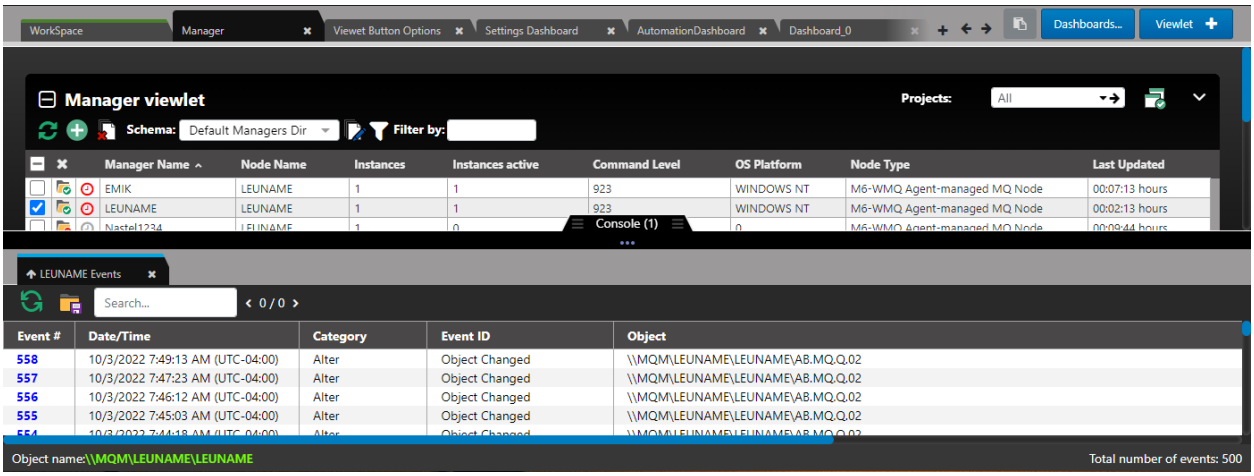

Figure 4.3.3.1.4-A. Events Viewlet

Clicking a blue event number will open the *Event details* window for the event. There are three tabs: **General** (*Figure 4.3.3.1.4-B*), **Diagnostic** (*Figure 4.3.3.1.4-C*) and **Detail** (*Figure 4.3.3.1.4-D*). The General tab provides context for the Receive Time that is shown. By default, the event date and time is converted to local time. The Coordinated Universal Time (UTC) offset is displayed. To view the date and time converted to GMT, click the GMT option button.

On the **Detail** tab, one or more attributes can be selected to restore the attribute's previous properties. Select the attribute to revert and click **Rollback Selected Changes** (*Figure 4.3.3.1.4-E*).

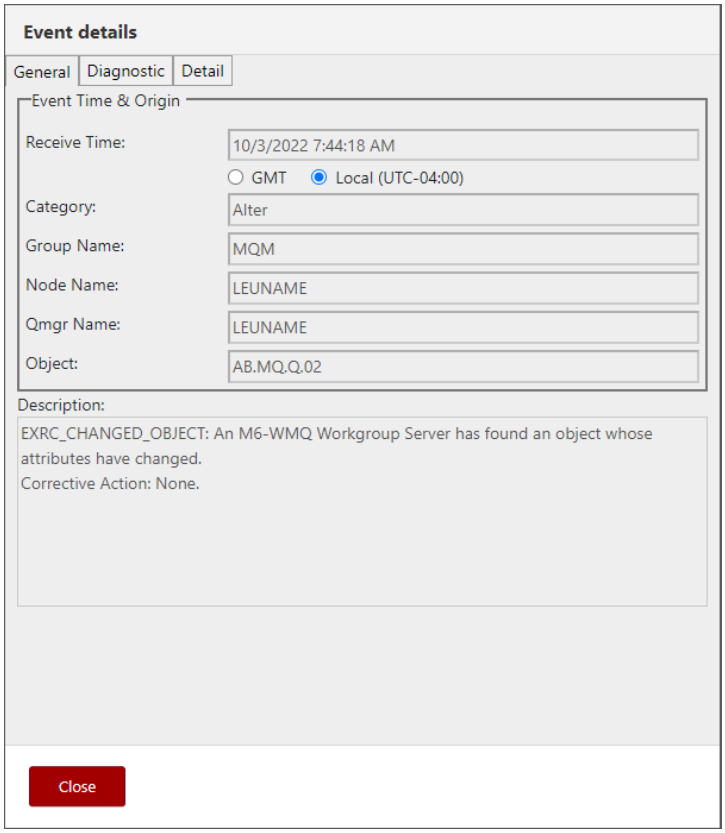

Figure 4.3.3.1.4-B. Event Details – General Tab

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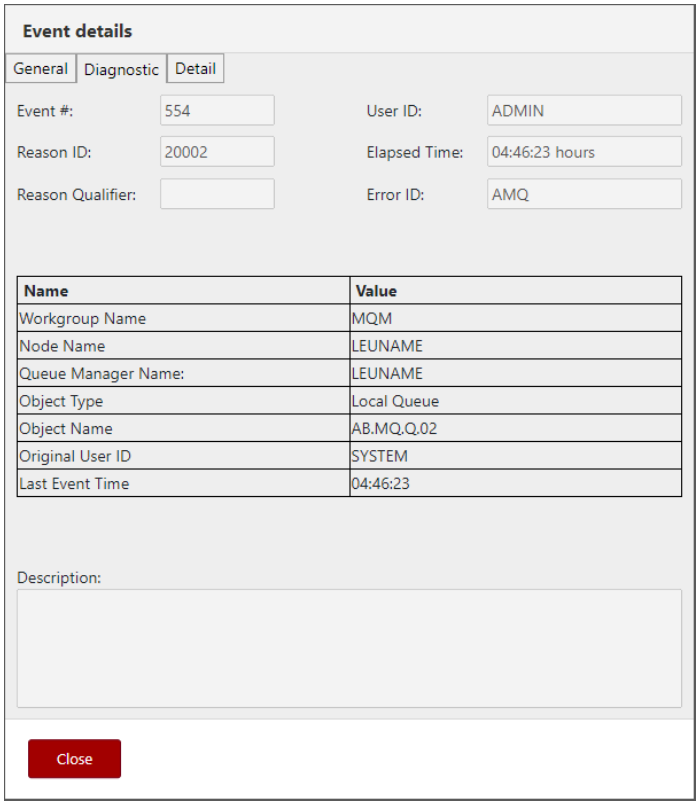

Figure 4.3.3.1.4-C. Event Details – Diagnostic Tab

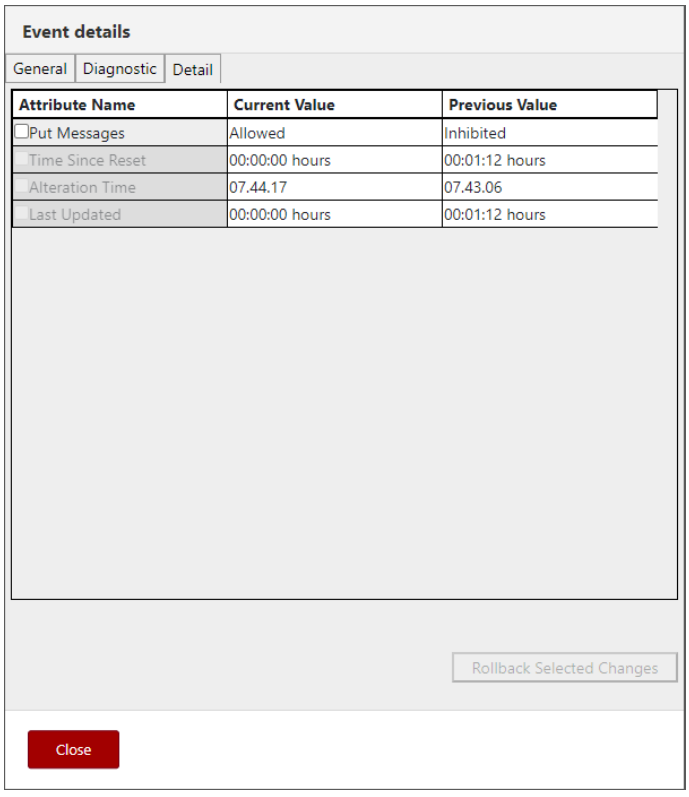

Figure 4.3.3.1.4-C. Event Details – Details Tab

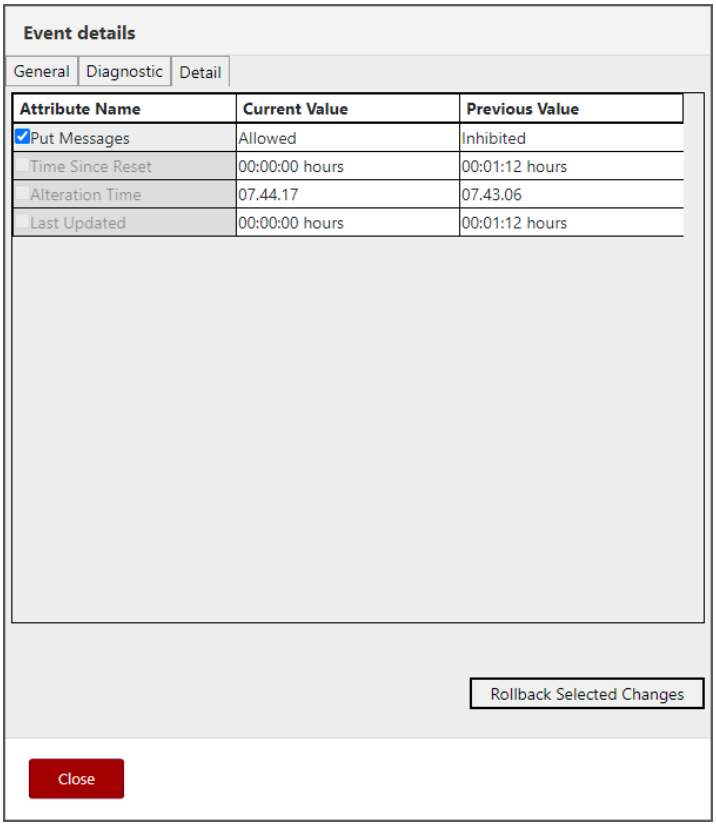

Figure 4.3.3.1.4-C. Event Details – Details Tab: Edit

4.3.3.1.5 Favorites

Instead of searching for a specific queue manager, you can add an entire queue manager (that is, the queue manager along with all of its subfolders) to a *Favorites* viewlet. Favorites are per workgroup server.

NOTE

A *Favorites* viewlet can be created for other objects as well. The objects which you can create a *Favorites* viewlet for are any of the objects which have the **Add to favorites...** option on their action menu.

Select **Add to favorites...** from the queue manager's action menu (*Figure 4.3.3.1-A*) to open the *Add to selected favorite viewlet* window. If no favorite viewlets exist, you will see the following screen. For more information on adding a favorite viewlet, please see *Create a New Viewlet for Favorite Objects*.

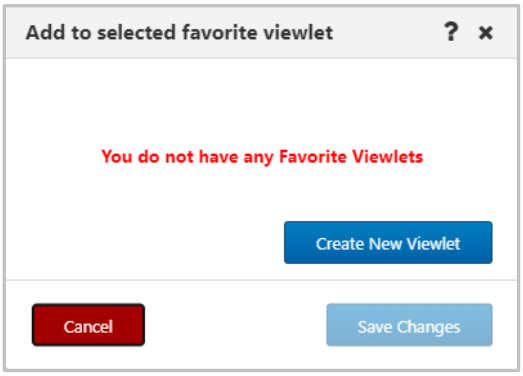

Figure 4.3.3.1.5-A. No Favorites Dialog Box

If favorite viewlets already exist, continue to the next section, *Add to Selected Favorite Viewlet*.

Add to Selected Favorite Viewlet

1. After selecting **Add to favorites...** from the queue manager's action menu (*Figure 4.3.3.1-A*), the **Add to Selected Favorite Viewlet** dialog box is displayed.
2. Select the favorite viewlet from the drop-down list and click **Save Changes**.

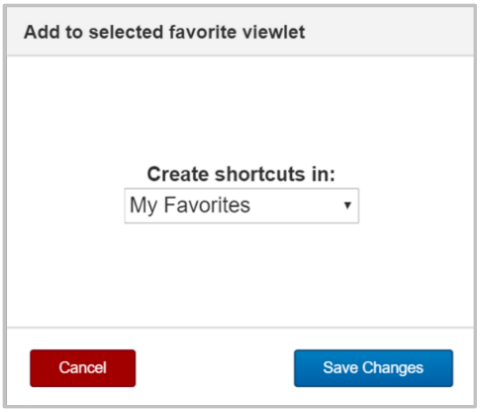

Figure 4.3.3.1.5-B. Add to Favorite Viewlet

4.3.3.1.6 MQSC Command Window

APPLY SCRIPT

Select **MQSC > Apply script** from a queue manager's pop-up menu to open the command window where you can execute multiple commands using a script. Please see *Appendix C* for an explanation of the menu options.

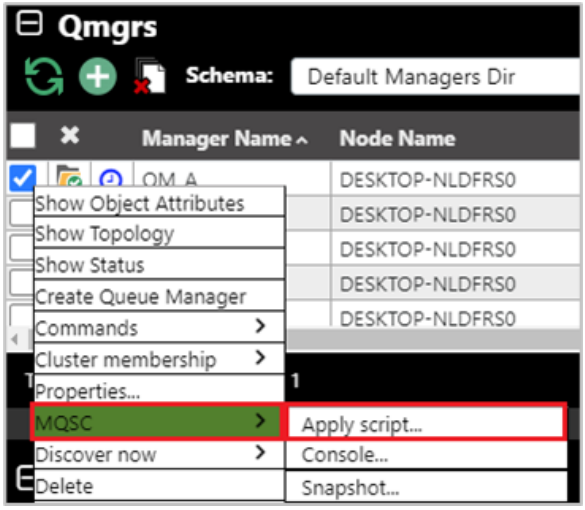

Figure 4.3.3.1.6-A. MQSC > Apply Script

You can either type the commands in the *Script* box located on the left side of the screen or click **Load from file** to import commands from a .txt file. Click **Submit** to execute the commands. The results are displayed on the right side of the screen in the *Response* box. Use the **Find** button located at the top-right of the window to easily search for details within the *Response* box. Clicking the **History** button gives you a list of what scripts you have run during the current session (the list will not be saved after the command window is closed).

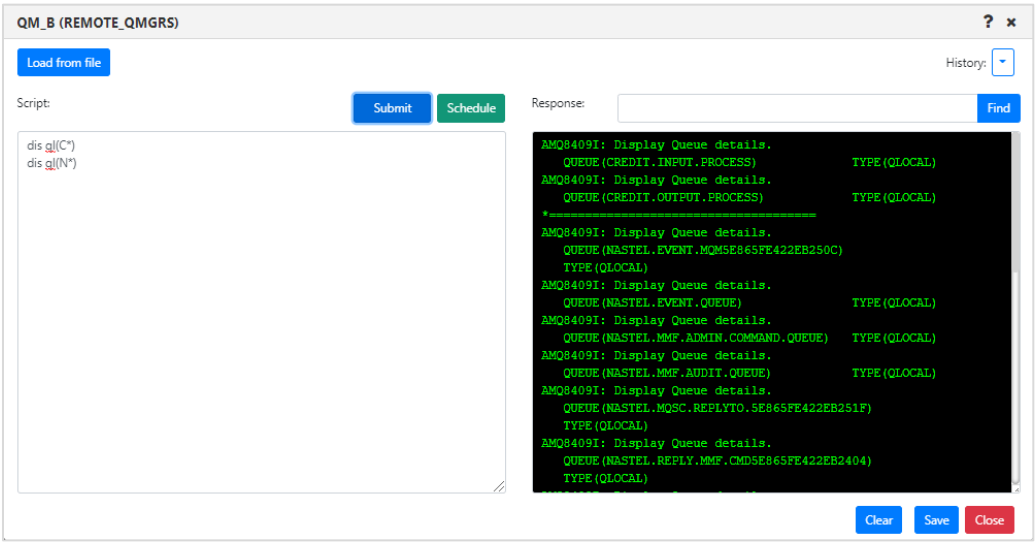

Figure 4.3.3.1.6-B. Apply Script Console

Click **Clear** to clear the response. Click the **Save** button to save the command window's contents as a .txt file.

The **Apply Script** command when applied to a connection manager node can also handle multiple MQSC commands, but the output will be slightly different (see figure below). The replies for each command will be separated by a dashed line, and a summary of commands processed, failed and valid, will appear at the end of the output, similar to a runmqsc command summary.

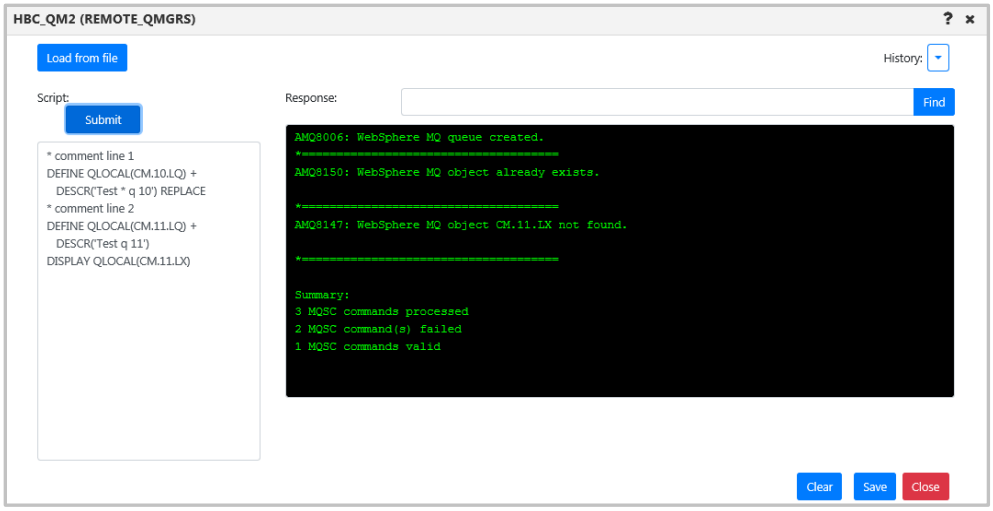

Figure 4.3.3.1.6-C Apply Script Console used with Connection Manager

CONSOLE

Select **MQSC > Console** from a queue manager's pop-up menu to open the command window where you can execute a single command.

NOTE

Please note that the node containing the selected queue manager must be active to have the ability to execute the commands (see Nodes for more information on node statuses).

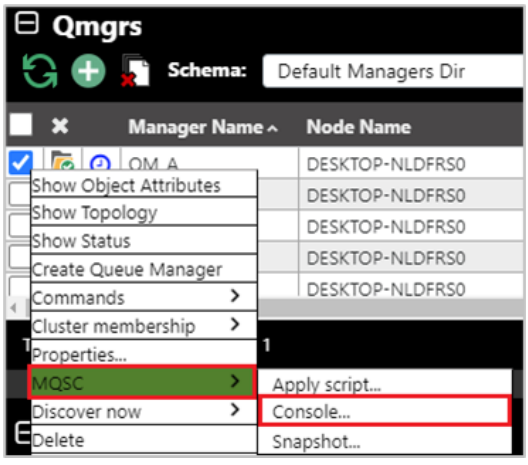

Figure 4.3.3.1.6-D. MQSC > Console

For information on MQSC commands, see the following IBM online Knowledge Center article:
https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.ref.adm.doc/q085130_.htm

Enter a command in the field located at the top and click **Submit** to execute it. You can use the drop-down menu located on the right side of the command field to browse through the most recent commands entered (exists only for this session, the list will not be saved after the command window is closed). MQ's informational responses are returned in the MQSC Console. The console displays "Command completed with messages" and includes the informational message.

n the example below the command **DISPLAY QMGR** was entered and the selected queue managers' details displayed in the command window.

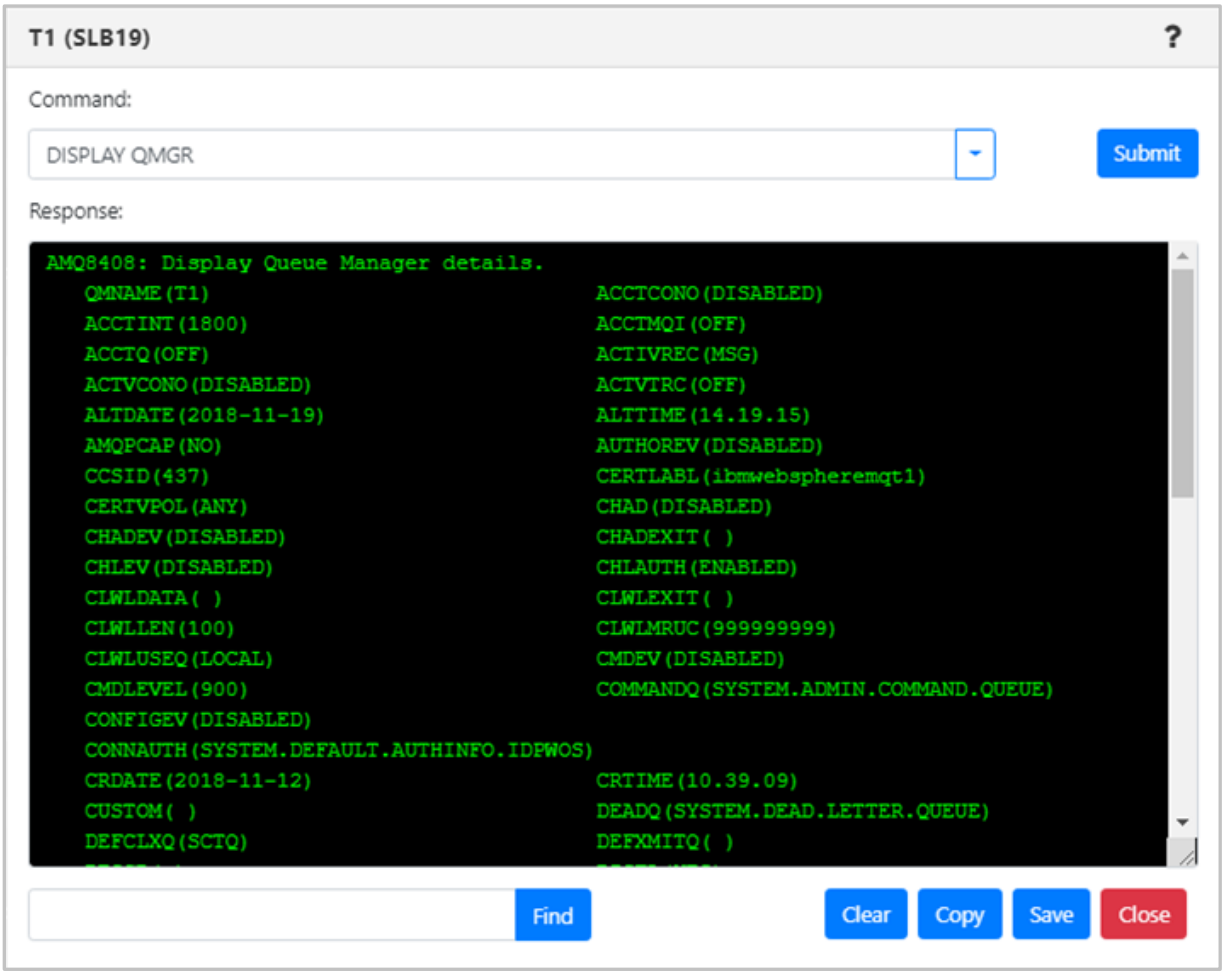

Figure 4.3.3.1.6-E. MQSC Command Window

Use the search field and **Find** button located at the bottom of the window to easily search for details within the response. Click **Clear** to clear the command window. Click the **Copy** button to copy the text of the command window. Click the **Save** button to save the command window's contents as a .txt file.

SNAPSHOT

Select **MQSC > Snapshot** from an object's pop-up menu to view the definition of the object. This gives you the information needed to recreate the object. You can take a snapshot of any one object, such as a queue or channel, or of an entire queue manager, which can be used for queue manager backup or duplication.

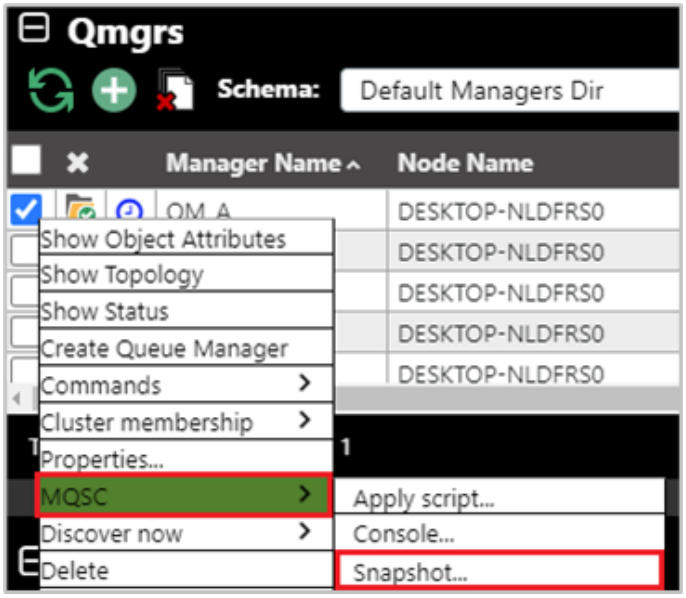

Figure 4.3.3.1.6-F. MQSC > Snapshot

After selecting **Snapshot**, a screen like the one below will appear.

Figure 4.3.3.1.6-G. Snapshot Screen

 © 2023 meshIQ

Export this MQSC snapshot to a .txt file by clicking the **Save** button. You can then use the **MQSC** > **Apply Script** option (*see above for explanation*) to import the file and recreate the object.

z/OS REPORTS

Select **MQSC > Snapshot** from a z/OS queue manager's pop-up menu to open the report window.

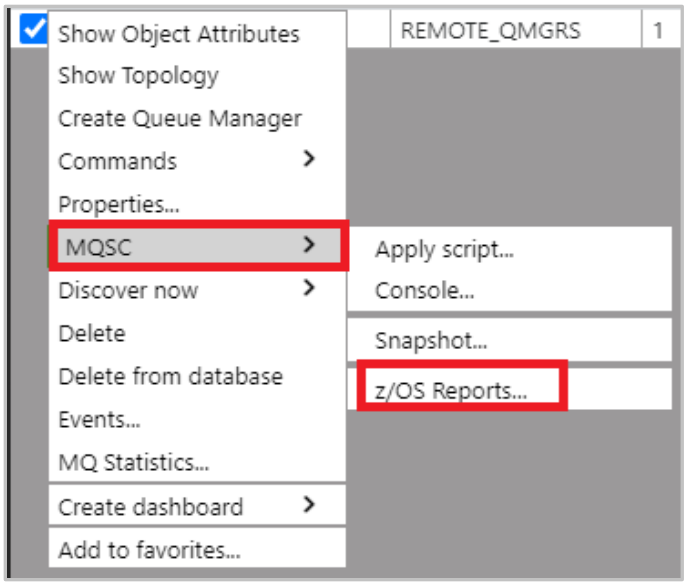

Figure 4.3.3.1.6-H. z/OS Reports Option

On the window that opens, there are tabs for each report type. Select the desired tab to run that report.

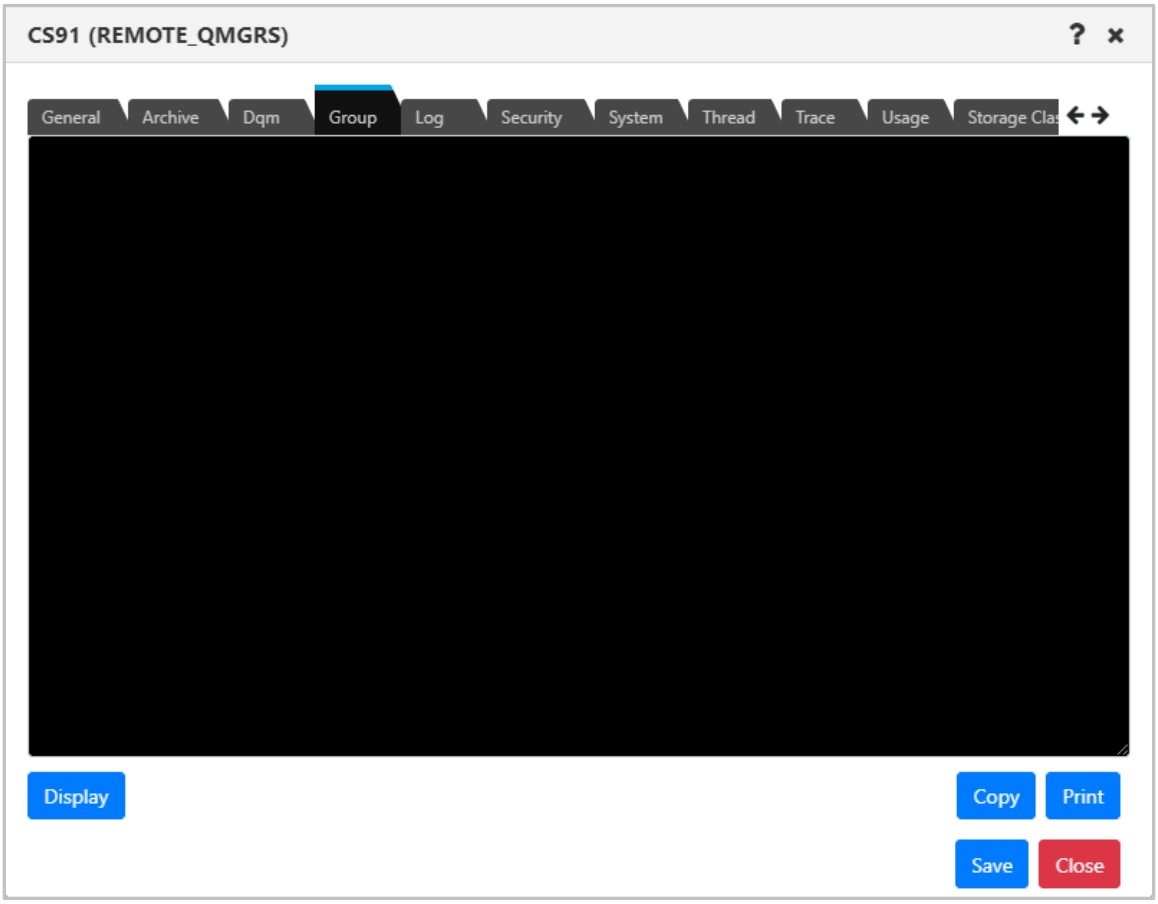

Figure 4.3.3.1.6-I. z/OS Reports

The **Display** button is available on all tabs except for the **General** tab. This button requests and displays the report.

On each tab you can copy the entire text block by clicking the **Copy** button. You can also print the report by clicking the **Print** button. The report will be printed with the queue manager's name, report date and type.

The below tabs have additional functionality:

- *Archive*: Use the **Set** button to set archive data. It will open a separate window where you specify configurations.
- *Dqm*:
    - Start/Stop Channel Initiator: Allows you to start initiators and specify jcp parameters. You can also stop initiators and specify when to restart the shared channel.
    - Start/Stop Channel Listener: Start or stop listeners and specify the max number of archive log volumes and dedicated tape units, the IP address and port, and lu62 name (for starting only).

- *Log*: Clicking the **Set** button opens a new window where you can set the command scope and manager, default parameters, compression, deallocation time, max number of archive log volumes and dedicated tape units, and number of output buffers. Clicking the **Archive** button opens a new window where you can select the command scope and manager, mode, and time.
- *Security*: Clicking **Set** will open a new window where you can specify properties. The **Refresh** and **Reverify** buttons allow you to select function properties to refresh or verify.
- *System*: Click the **Set** button to specify system settings.
- *Thread*: Select thread type and queue manager name for thread display.
- *Trace*: Specify start and stop trace options.
- *Usage*: Select usage type and pageSet ID for Display function.
- *Storage Class*: Select storage class and page set identifier for display function. You can select qsg disposition, command scope and manager by clicking the **Set** button.
- *Coupling Facility*: Select coupling facility name for display function.
- *SMDS*: Select queue manager and coupling facility names for display function.

4.3.3.1.7 Security

Except for Cluster Queue Managers, users can view and change authorization settings for all IBM MQ objects. This is done by selecting the object and selecting **Commands** > **Security** from the object's drop-down menu. The *Display Or Set Authority* window opens.

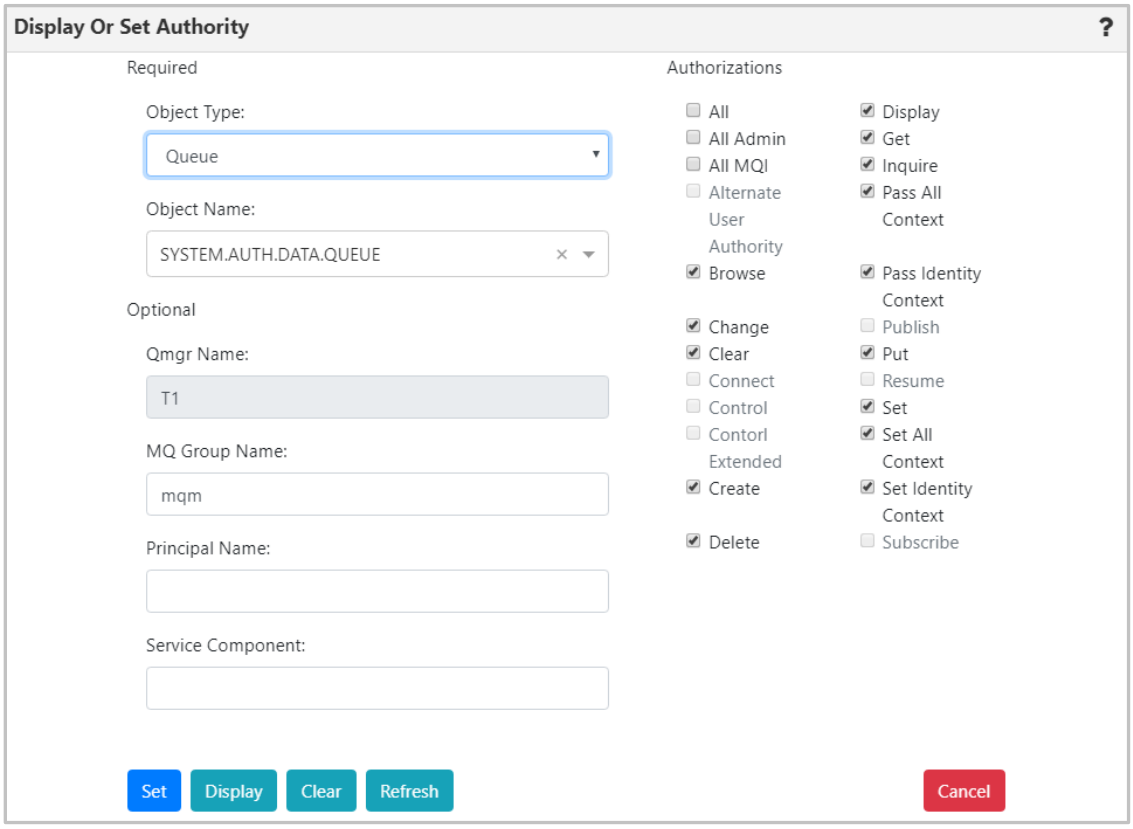

Figure 4.3.3.1.7-A. Display or Set Authority Modal Window

Select an **Object Type** and **Object Name**. The object's authority permissions are displayed and can be modified. Within the *Authorizations* section, enable/disable all desired options. To quickly clear all options, click the **Clear** button (updates to the **Principal Name** and **Service Component** fields are also cleared). Click the **Display** button to see the object's original authority settings. The **Refresh** button will perform a security refresh. To save changes, click **Set**. Clicking **Cancel** will close the window without saving changes.

4.3.3.1.8 View Error Logs

The View Error Log function can only be used with an agent that is running on the node. It cannot be used with a connection manager.

To view queue manager error logs, select an active queue manager and select **Commands** > **View Error Log** from the drop-down menu. The error logs open in the *Log File Browse* window where you can view and download a LOG file, an FDC file, or an FFST Summary (of the FDC files).

At the top of the *Log File Browse* window, the queue manager's location is displayed (workgroup server, node, and queue manager name). The Log type that you select will determine the options that are available in the file filter. Only the INI filter includes INI files.

As indicated in the table below, if the ALL or FDC filters are selected, the FFST Summary file ffstsummary.FDC is included in the file listing. A sample display of this file is shown below.

Table 4.3.3.1.8-A. Log Type Filters

Filter	Queue Manager	WMQ System
LOG	LOG	LOG
FDC		FDC ffstsummary.FDC
INI	INI (of the queue manager, for example, qm.ini)	INI (of MQ: mqs.ini from /var/mqm/mqs.ini) (Agent level 6.7.7 or higher is required.)
All	LOG Includes any error log files from the queue manager error directories below. *Windows* C:\Program Files (x86)\IBM\WebSphere MQ\Qmgrs\<qmgr_name>\errors\ *Linux* /var/mqm/qmgrs/<qmgr_name>/errors/	LOG Includes any error log files from the system error directories below. *Windows* C:\Program Files (x86)\IBM\WebSphere MQ\errors\ *Linux* /var/mqm/errors/ FDC

Table 4.3.3.1.8-A. Log Type Filters		
Filter	**Queue Manager**	**WMQ System**
		ffstsummary.FDC

The table records can be sorted by clicking on the column headers. The location of the selected error log file is located at the bottom of the window within the grey field. Within the **Read** field, specify the amount of text lines to be displayed in the error log file. Enter a number in the **Lines, Starting From** field to specify the starting row to be exported; data will be exported starting from this line of the error log file. Click **Save** to download and open the file.

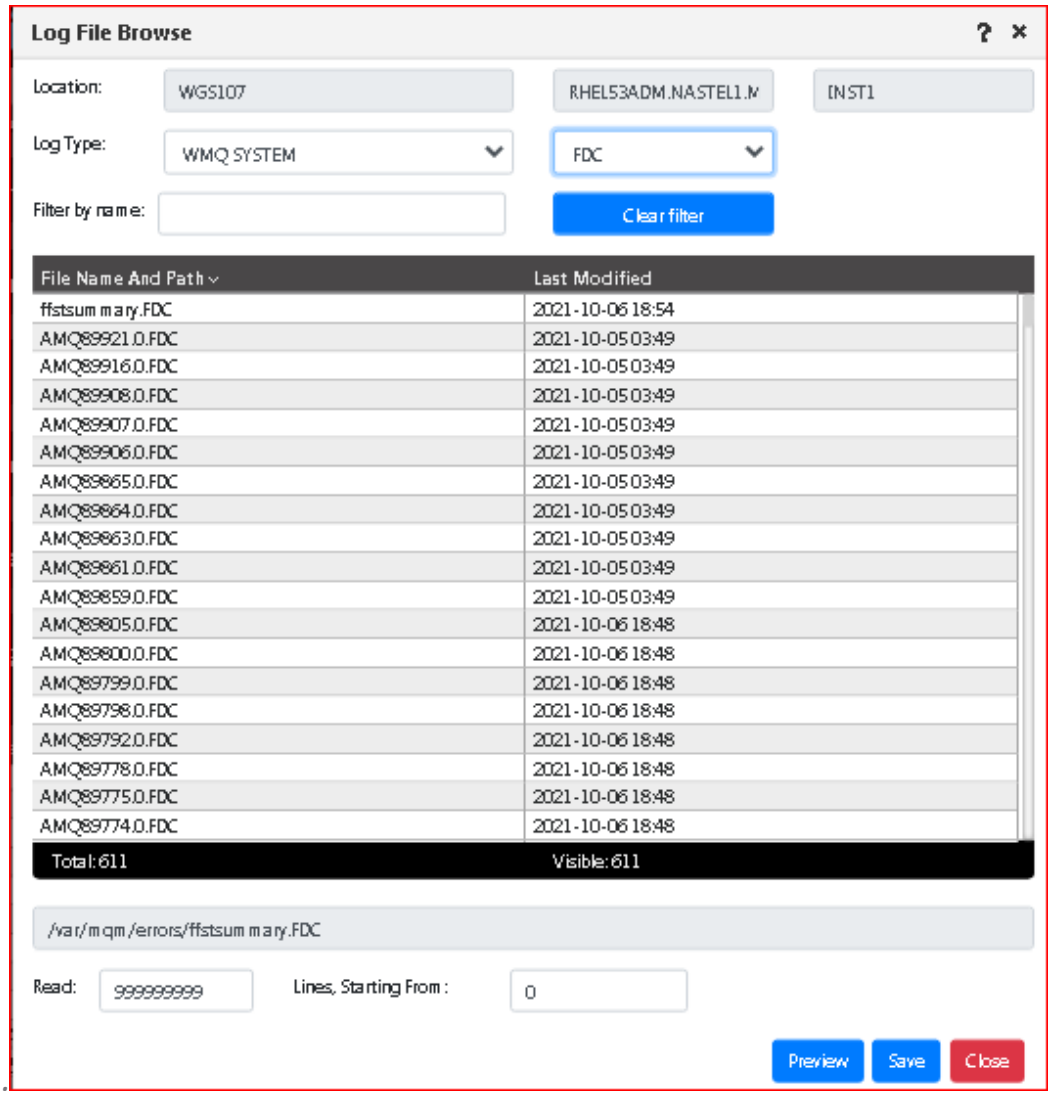

Figure 4.3.3.1.8-A Queue Manager's Logs

You can preview the file before exporting by clicking the **Preview** button located at the bottom-right of the window. The preview will look similar to the following:

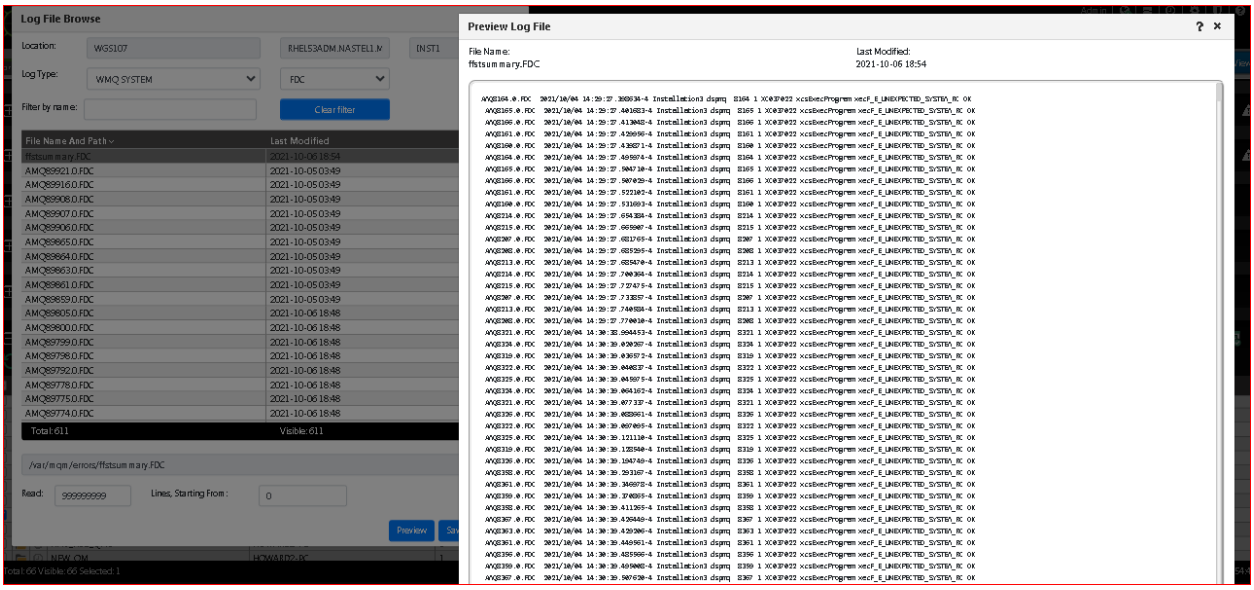

Figure 4.3.3.1.8-B. Preview Log File

4.3.3.1.9 Connections

You can view queue manager connections from the console pane or from a modal window.

4.3.3.1.9.1 View Connections

- To view connections in a modal window, select the checkbox for the queue manager in the viewlet, and select **Commands > Connections (modal)**.
- To view connections in the console pane, select the checkbox for the queue manager in the viewlet, and select **Commands > Connections (console)**.

4.3.3.1.9.2 Queue Manager Connections in Console Pane

In the Console pane, you can filter the list of connections, stop connections, view connection handles, and view connection object properties. A refresh button is available to update the list.

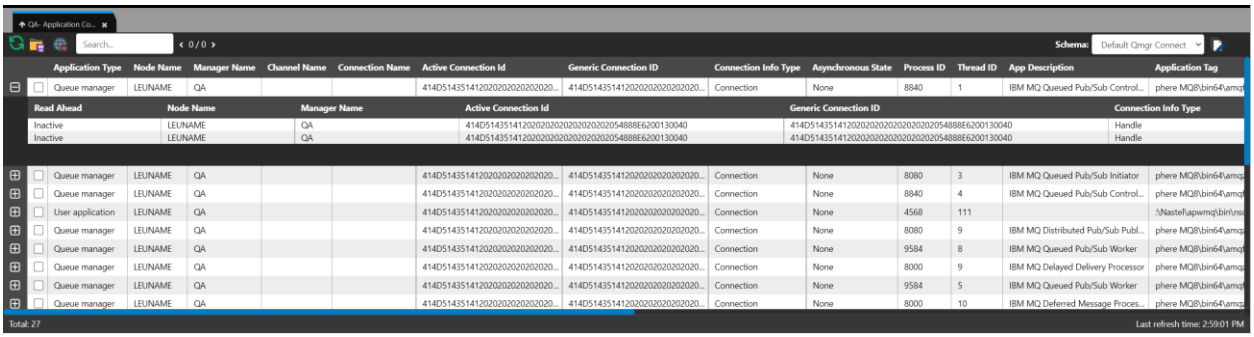

Figure 4.3.3.1.9.2-A. Queue Manager Connections in Console Pane

4.3.3.1.9.3 Queue Manager Connections in Modal Window

In the modal window, connections are grouped by Application tag. By default, all connections are expanded to show their individual connection handles.

- Click the down arrow for a group to collapse its list of connection handles, or click **Collapse all** to collapse all groups.
- Click the right arrow for a group to expand its list of connection handles, or click **Expand all** to expand all groups.

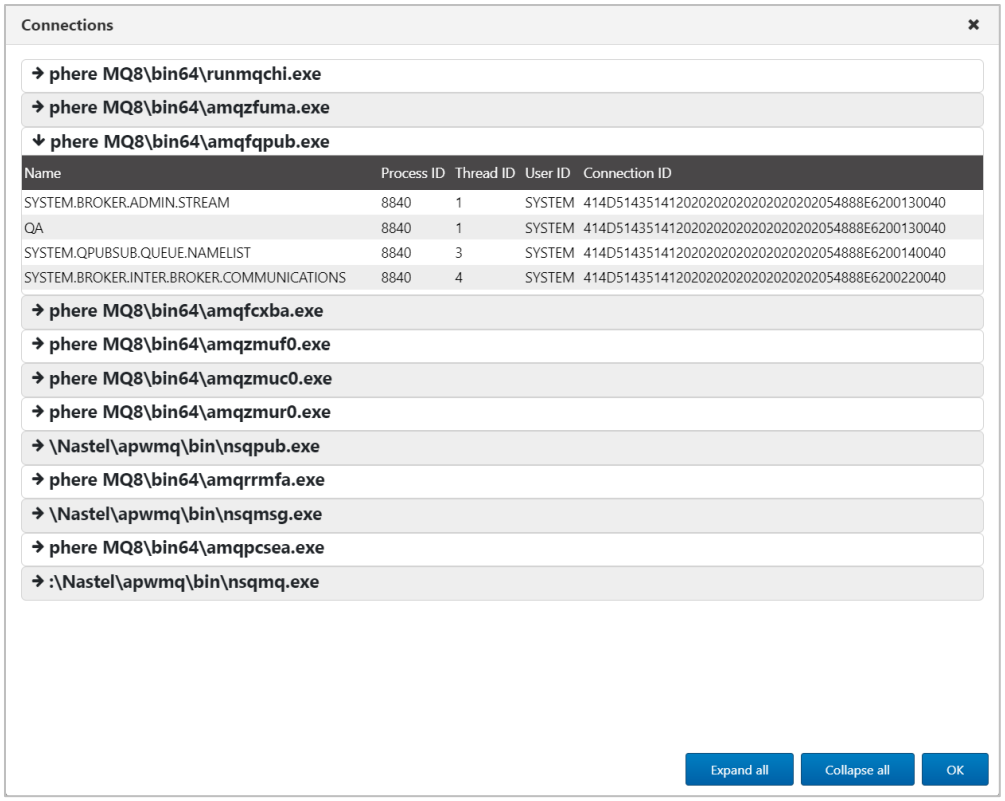

Figure 4.3.3.1.9.3-A. Queue Manager Connections in Modal Window

4.3.3.1.9.4 Filter Connections

You can filter console records to find, for example, an application name (in the Application Tag column) or content (such as queue or channel name).

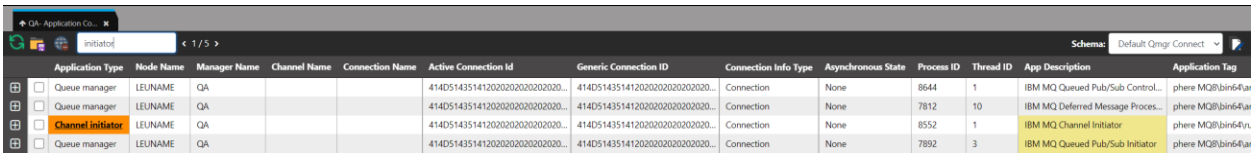

Figure 4.3.3.1.9.4-A. Filter Queue Manager Connections

4.3.3.1.9.5 Stop Connections

Select the checkbox of a queue manager connection to perform an action on it. For example, you can stop one or more connections from here: select the checkbox for each connection,

then select **Stop Connection(s)** on the action menu, or click the Stop Qmgr Connection button.

4.3.3.1.9.6 View Connection Handles

Connection handle objects are listed for each connection record. Click to expand each record in the console pane and show the individual connection handles.

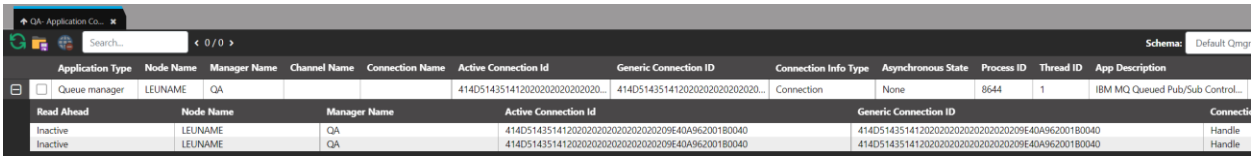

Figure 4.3.3.1.9.6-A. View Connection Handles

4.3.3.1.9.7 View Connection Object Properties

To view the properties of connections or connection handles, click the individual records.

You can also view connection properties by selecting the checkbox for a connection and selecting **Properties** on the action menu.

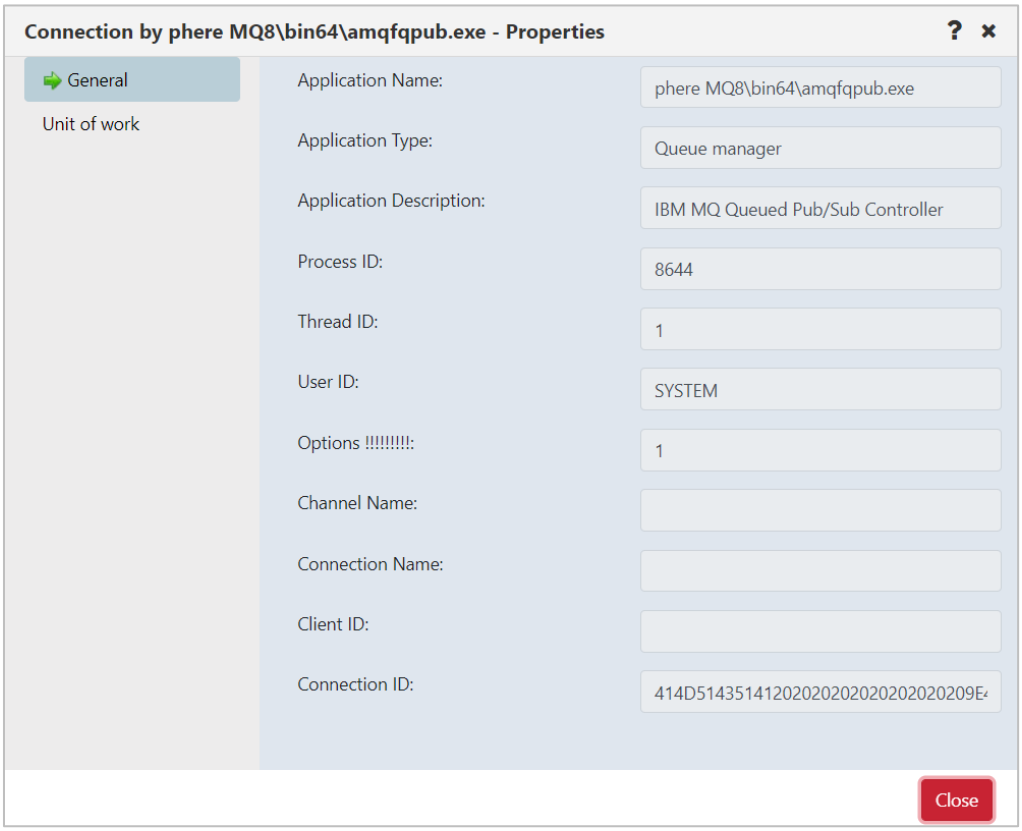

Figure 4.3.3.1.9.7-A. Queue Manager Connection Properties

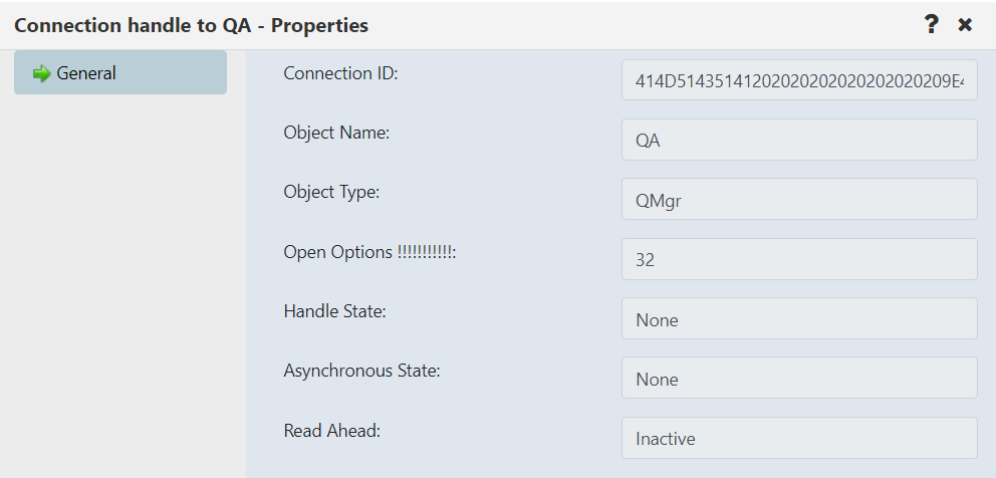

Figure 4.3.3.1.9.7-B. Connection Handle Properties

4.3.3.1.10Cluster Membership

A cluster is a group of at least two logically associated queue managers that can share information with each other. For example, messages can be transferred between any queue manager and queue within a cluster. Clusters are treated as MQ and Kafka objects and are viewed by creating a viewlet just like any other object (see *Adding and Maintaining Viewlets*).

4.3.3.1.10.1Join Cluster

To join a queue manager to a cluster, select **Cluster membership** > **Join ...** from the queue manager's pop-up menu. On the *Choose the action* window, select the **Join the existing cluster** option. Click **Next**.

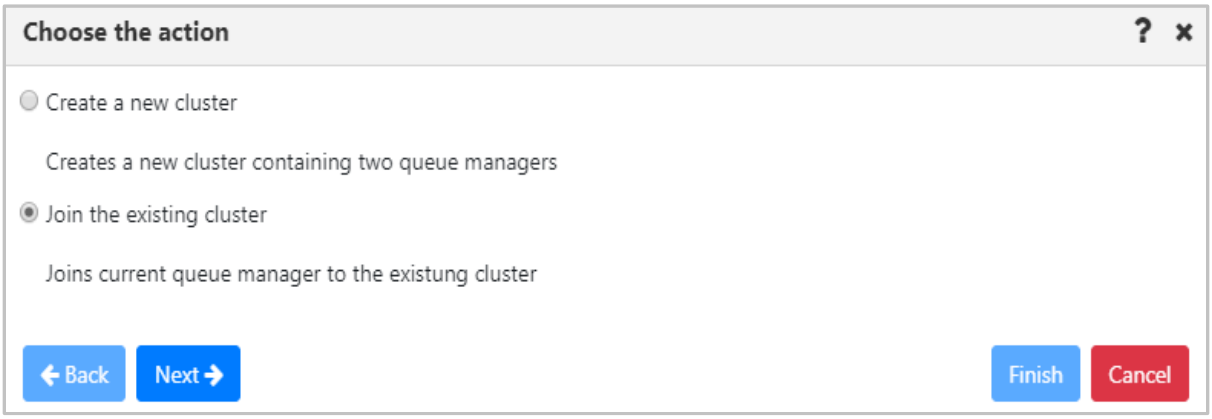

Figure 4.3.3.1.9.1-A. Choose to Create or Join a Cluster

On the following window, select the queue manager's repository type and click **Next**. In this example the **Partial repository** option was selected. Regardless of the option selected, the proceeding windows are the same.

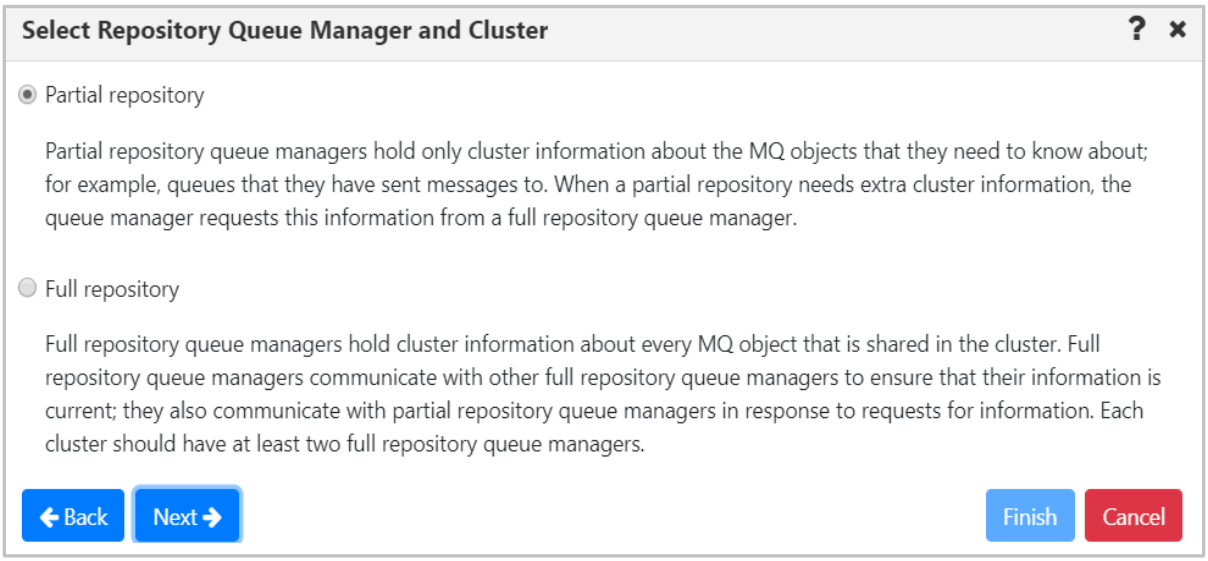

Figure 4.3.3.1.9.1.-B. Select Repository Queue Manager

On the following screen, select a cluster and click **Next**.

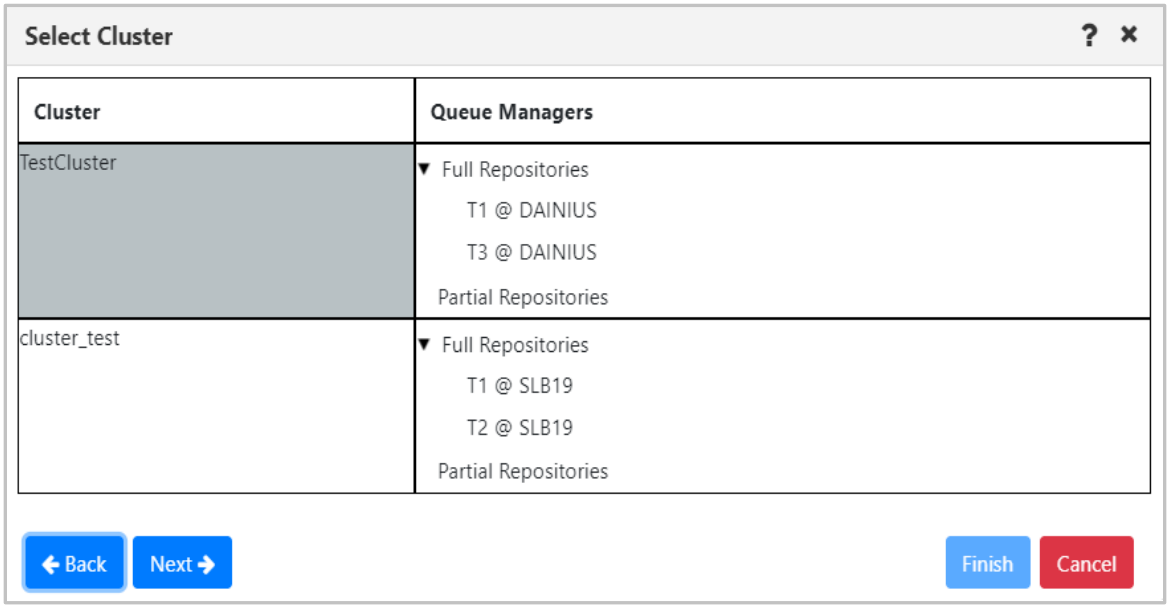

Figure 4.3.3.1.9.1-C. Select Existing Cluster to Join

On the following window, the **Cluster-receiver channel name** field gets automatically populated but can be changed. Specify the **Cluster-receiver channel connection name** for the queue manager. Depending on the channel type, it can be defined as domain address, IP address (IPV6, IPV4), Luname, remote machine name. For more information on channel connection names, refer to the IBM documentation: *https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.ref.con.doc/q081820_.htm*.

Click **Next**.

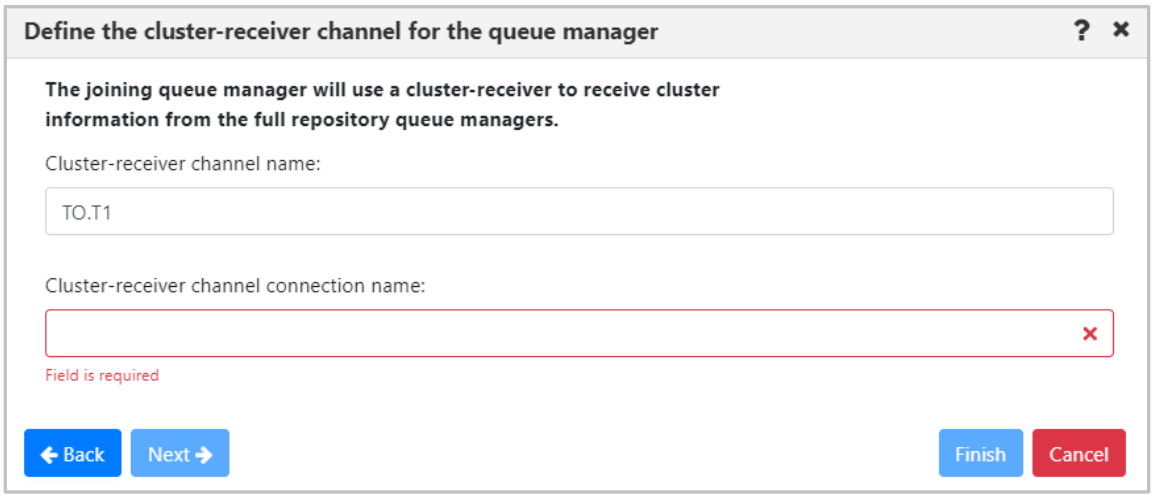

Figure 4.3.3.1.9.1-D. Define Channel Connection Name

Select repositories on the *Select the full repository queue managers* window. Multiple queue managers can be selected. Click **Next**.

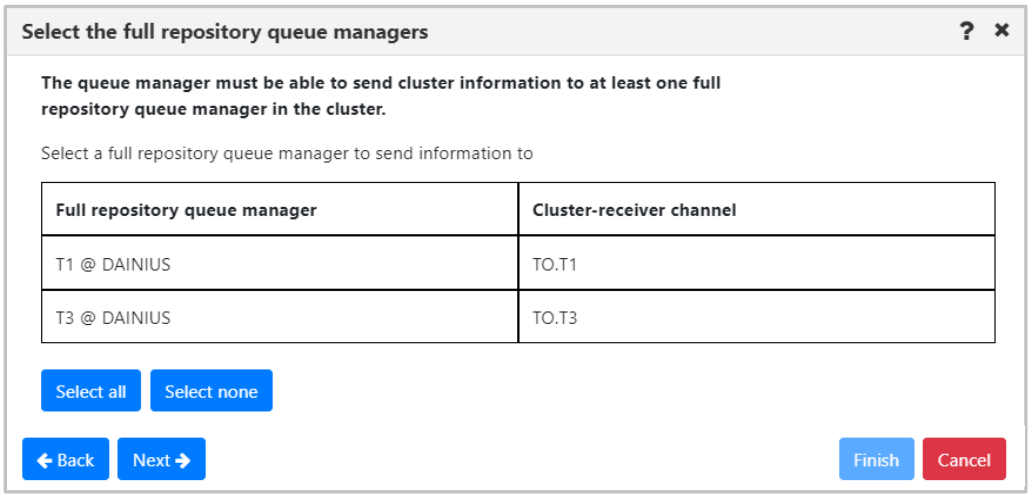

Figure 4.3.3.1.9.1-E. Select Full Repository Queue Manager(s)

Review the summary and click **Finish**.

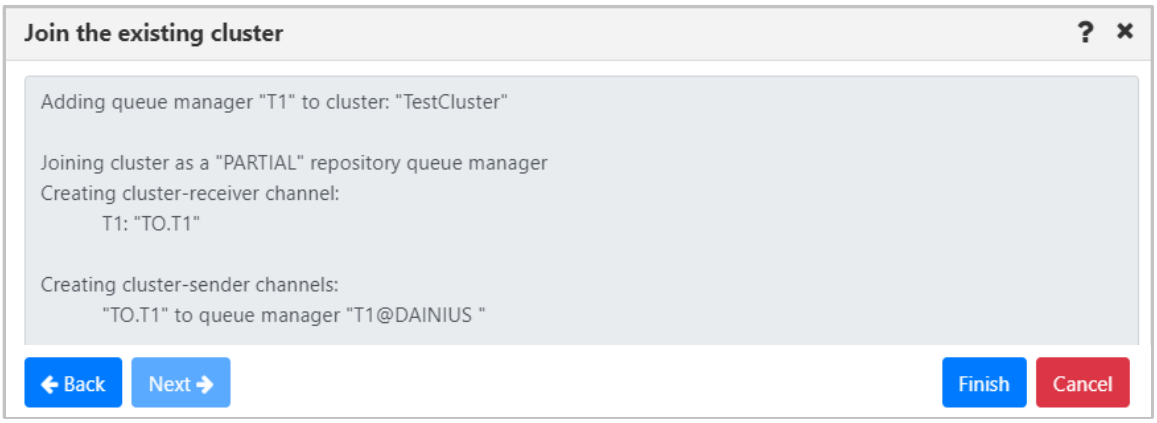

Figure 4.3.3.1.9.1-F. Join the Existing Cluster Summary

4.3.3.1.10.2 Create Cluster

Confirm the following pre-requisites are completed before creating a new queue manager cluster:

- Two queue managers, having full repositories for the cluster, are created
- The cluster's full repository queue managers have a running listener
- You are aware of the connection details; you will be asked to specify them during the creation process

NOTE

When full repository queue manager(s) already belong to another cluster, you cannot terminate the creation process and an error message will be displayed (*Figure 4.3.3.1.9.2-E*). If you still want to use the queue manager(s), the cluster will need to be configured using MQSC commands.

Steps to create a new cluster:

1. Select a queue manager and click **Cluster membership** > **Join ...** on the pop-up menu.
2. Select **Create a new cluster** on the *Choose the action* window. Click **Next**.

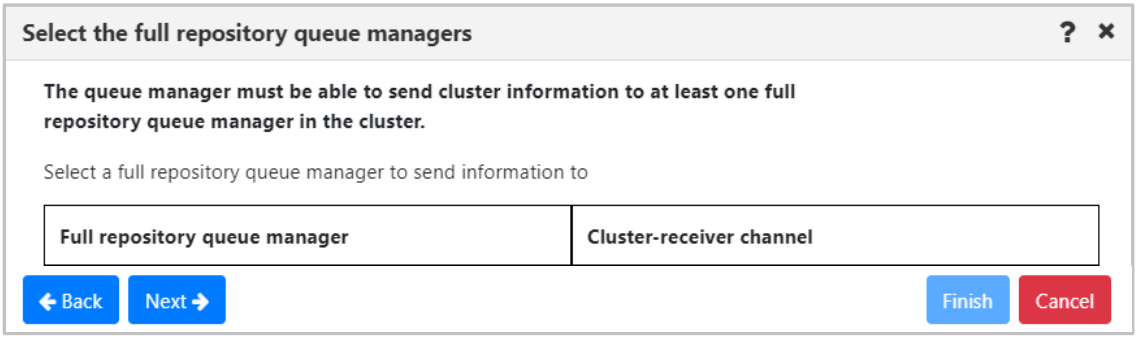

Figure 4.3.3.1.9.2-A. Create New Cluster Option

3. Specify a unique name for the cluster and click **Next**.

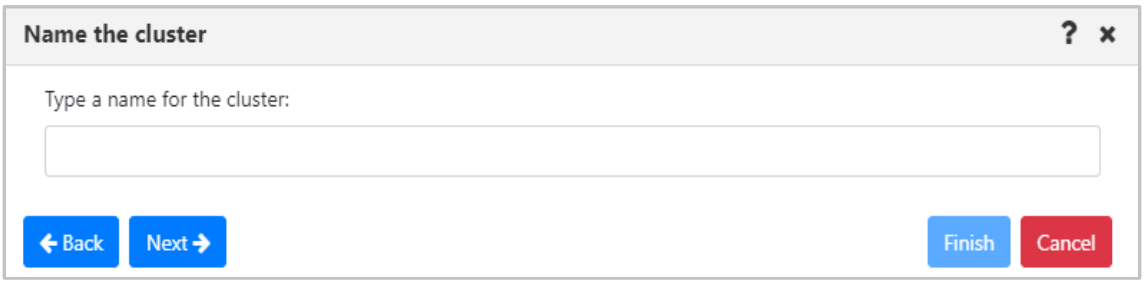

Figure 4.3.3.1.9.2-B. Specify Cluster Name

4. Information about the first selected queue manager to join the cluster is displayed on the *First full repository queue manager* window. Click **Next**.

Figure 4.3.3.1.9.2-C. Selecting First Queue Manager

5. Select the second queue manager to join the new cluster. Click the **Next** button.

Figure 4.3.3.1.9.2-D. Selecting Second Queue Manager

NOTE

If you select a full repository queue manager which already belongs to another cluster, you will be alerted with an error message.

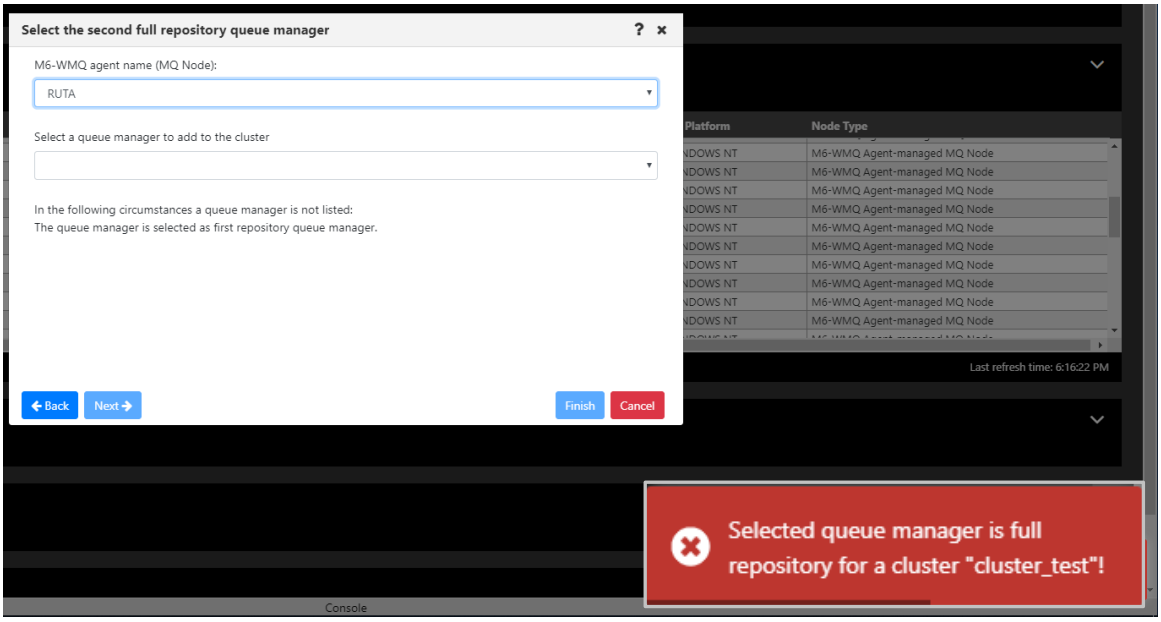

Figure 4.3.3.1.9.2-E. Error Message for Already Belonging to Cluster Queue Manager

6. According to the instructions displayed on the *Creating cluster channels* window, define the cluster-receiver channel and channel connection name for both queue managers on the proceeding windows (*Figures 4.3.3.1.9.2-G* and *H*).

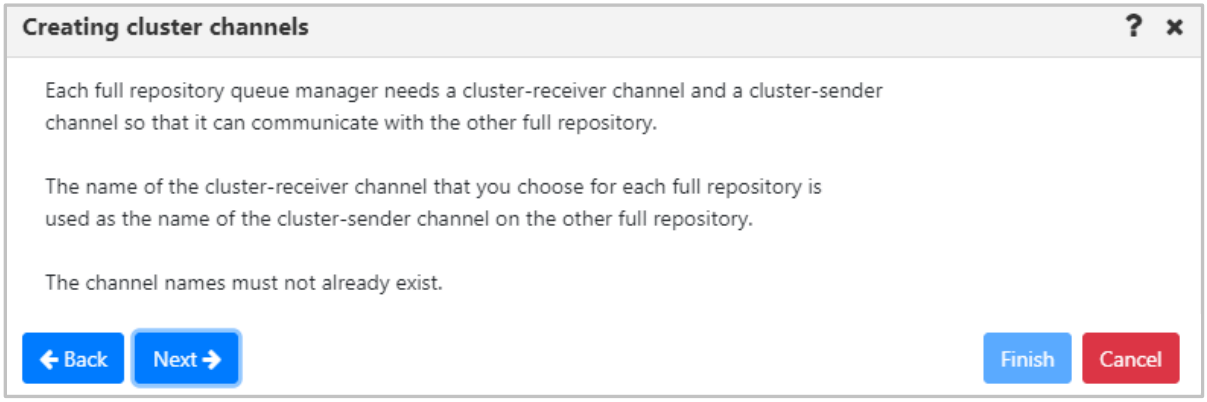

Figure 4.3.3.1.9.2-F. Creating Cluster Channels Instructions

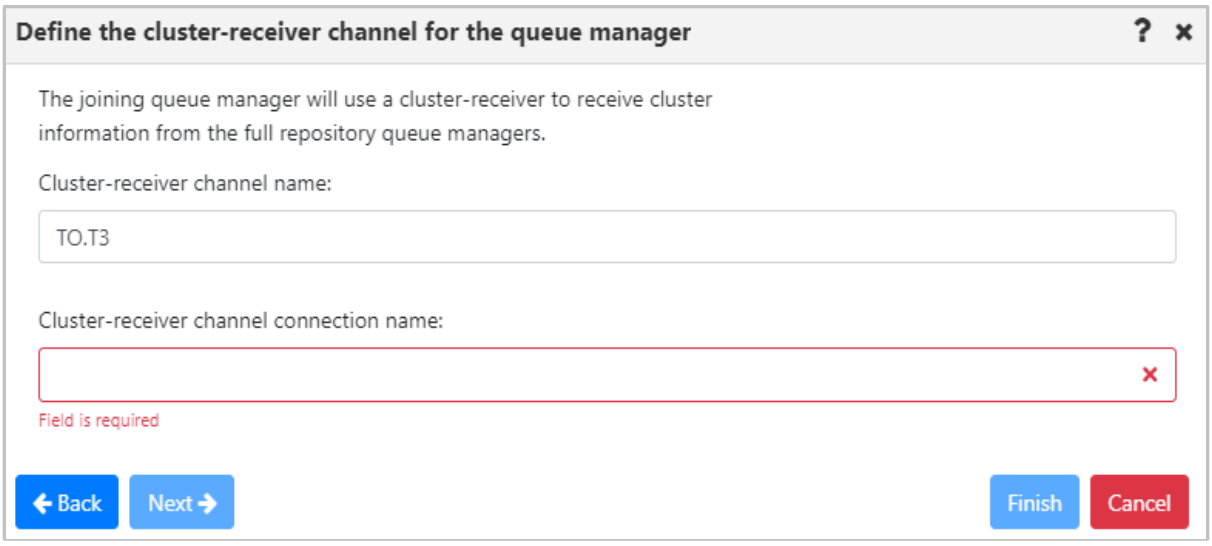

Figure 4.3.3.1.9.2-G. Define Cluster-Receiver Channel for First Queue Manager

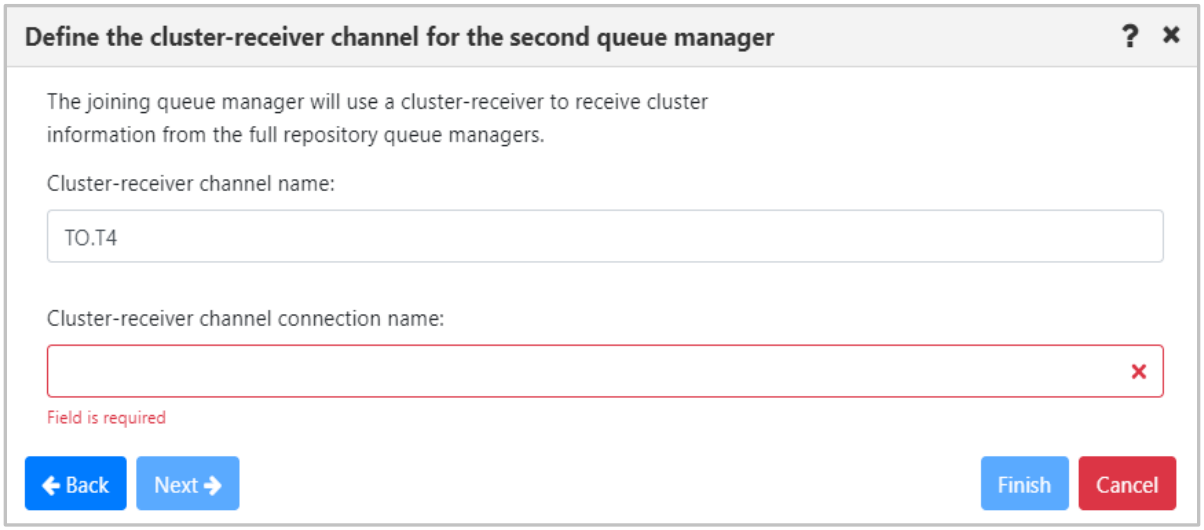

Figure 4.3.3.1.9.2-H. Define Cluster-Receiver Channel for Second Queue Manager

7. Review the cluster summary and click **Finish**.

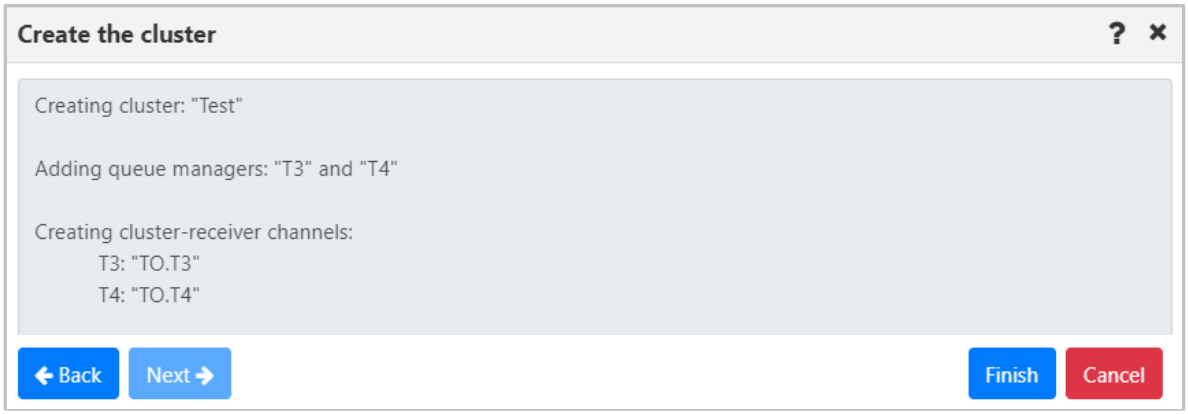

Figure 4.3.3.1.9.2-I. Cluster Creation Summary

8. To view the new cluster, populate the cluster queue manager's viewlet (see *Adding and Maintaining Viewlets*).

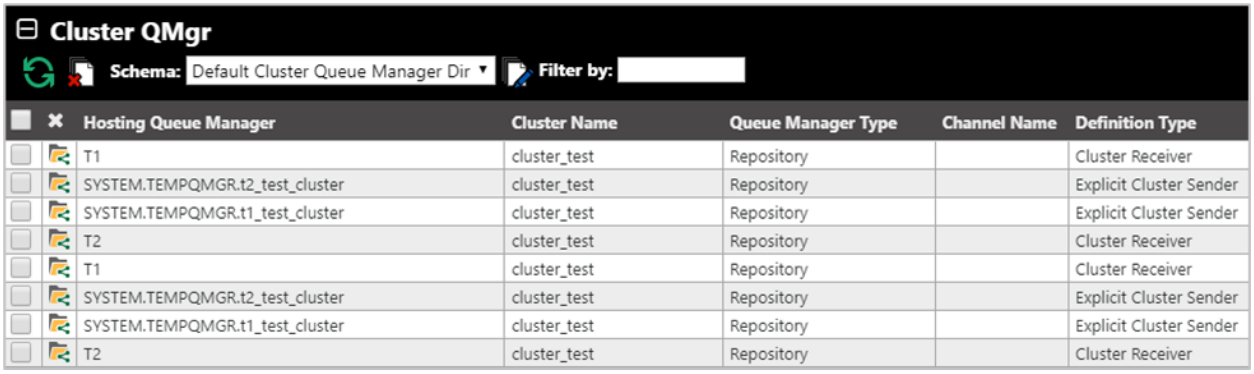

Figure 4.3.3.1.9.2-J. Cluster Queue Managers Viewlet

4.3.3.1.10.3 Cluster Refresh

Select **Cluster membership** > **Refresh** from the selected queue manager's pop-up menu. The **Refresh Cluster Information** window opens. From the *Cluster name* drop-down menu, select a cluster to refresh. Check off the **Refresh repository** checkbox and click **OK**.

Consult the IBM documentation for information on the Refresh Cluster command and repository refresh types:

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.ref.adm.doc/q086470_.htm

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.ref.con.doc/q082360_.htm

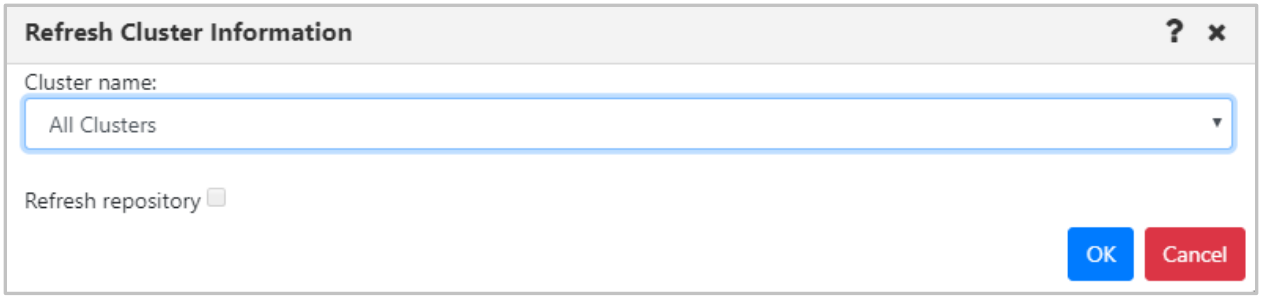

Figure 4.3.3.1.9.3-A. Cluster Refresh

4.3.3.1.10.4 Leave Cluster

To remove a queue manager from a cluster, select **Cluster membership** > **Leave** from the queue manager's pop-up menu. The *Leave Cluster* window opens. Review the summary table, enable the desired delete options at the bottom of the screen and click **OK**.

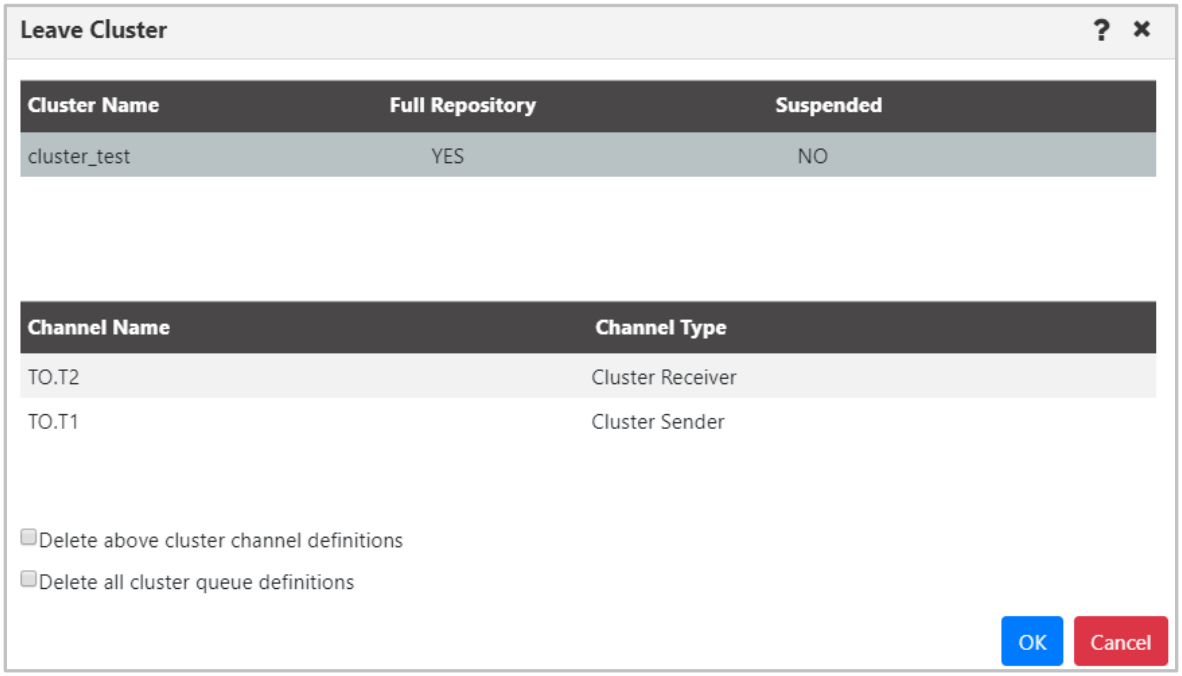

Figure 4.3.3.1.9.4-A. Leave Queue Managers Cluster

4.3.3.1.11 Ping

You can ping a queue manager to view its status. Do this by selecting **Commands** > **Ping** from the queue manager's pop-up action menu.

You will either see a *Success* message displayed at the bottom right of the window:

Figure 4.3.3.1.10-A. Successful Ping

or a failed detailed error will be displayed:

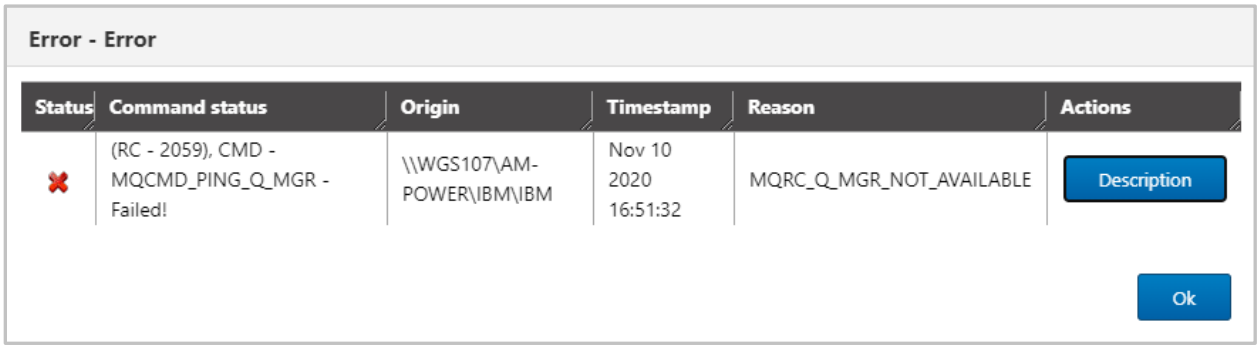

Figure 4.3.3.1.10-A. Failed Ping

4.3.3.2 EMS Manager

An EMS manager has the following pop-up menu options.

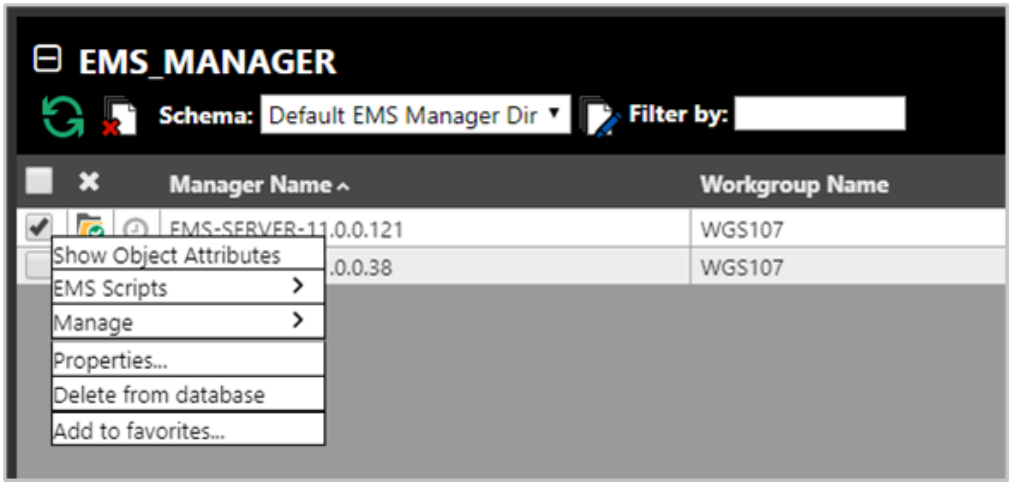

Figure 4.3.3.2-A. EMS Manager Pop-Up Menu

4.3.3.2.1 Attributes

Select **Show Object Attributes** from an EMS manager's pop-up menu to open the *Attributes* table on the Console panel.

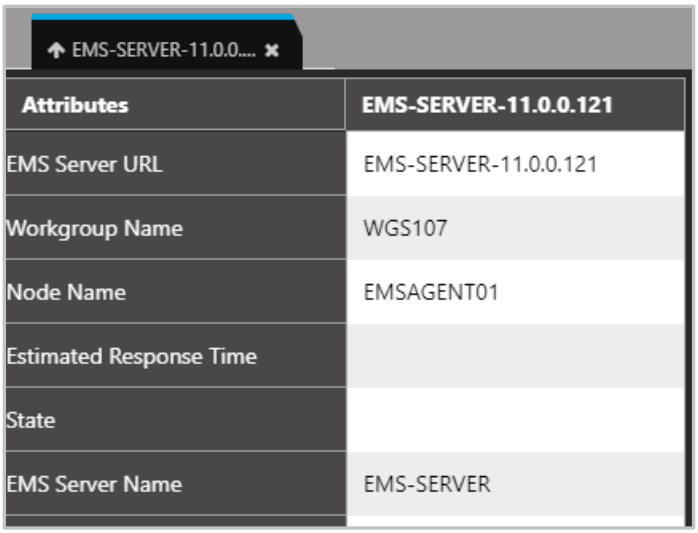

Figure 4.3.3.2.1-A. EMS Manager Attributes

4.3.3.2.2 EMS Scripts Console

After selecting **EMS Scripts > Console** from EMS manager's pop-up menu (*Figure 4.3.3.2-A*), the below command window opens. Type in a command in the field at the top of the window. Please consult TIBCO User's Guide for more information on EMS commands: *https://docs.tibco.com/pub/ems/8.4.0/doc/pdf/TIB_ems_8.4_users_guide.pdf*

The functionality of the buttons and fields on this window is the same as described in section *4.3.3.1.6, MQSC Command Window*.

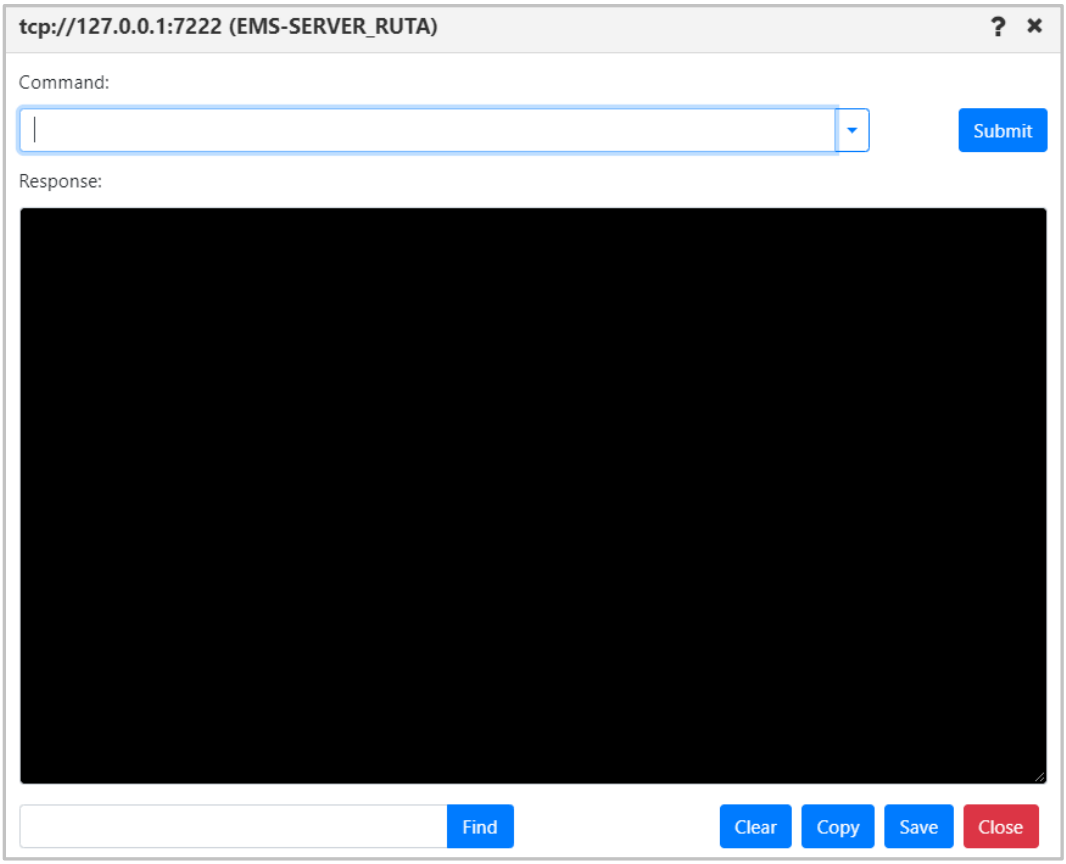

Figure 4.3.3.2.2-A. EMS Scripts Console

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4.3.4 Queues

Select an MQ or EMS queue to display the pop-up menu. Menu options are described in *Appendix C*. Clicking on a queue name will open the queue's attribute viewlet.

> NOTE
>
> Your pop-up menu options may differ according to your user permissions, which are managed by an admin. Please also note that different queue types have different menu options.

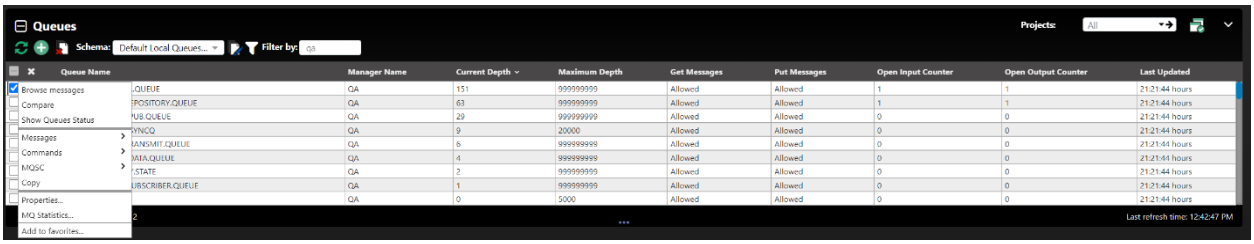

Figure 4.3.4-A. Queue Viewlet

> TIP
>
> Browse messages by clicking a cell within the **Current Depth** column. Clicking cells within **Open Input Counter** or **Open Output Counter** will display status tabs.

At the top-right of the viewlet there is a **Project** drop-down which filters the viewlet by user group configurations (the user group's description is listed). Viewlet results are filtered by the selected group's server (workgroup servers, nodes, and managers) and object group access permissions defined in the security application. If **All** is selected, the data displayed is according to all groups the user belongs to. For example, if the user belongs to both the *Administrators* and *Users* groups, the viewlet will display data that meets the security application filters for *Administrator* or *Users* when **All** is selected.

4.3.4.1 Queue Status

After selecting **Show queue status** from a queue viewlet's action menu (*Figure 4.3.4-A*), the *Queue Status* viewlet is displayed.

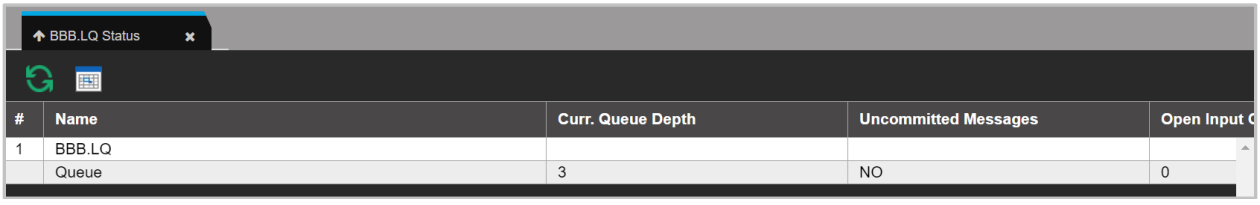

Figure 4.3.4.1-A. Show Queue Status

You can customize the status table by clicking the **Select columns** icon .

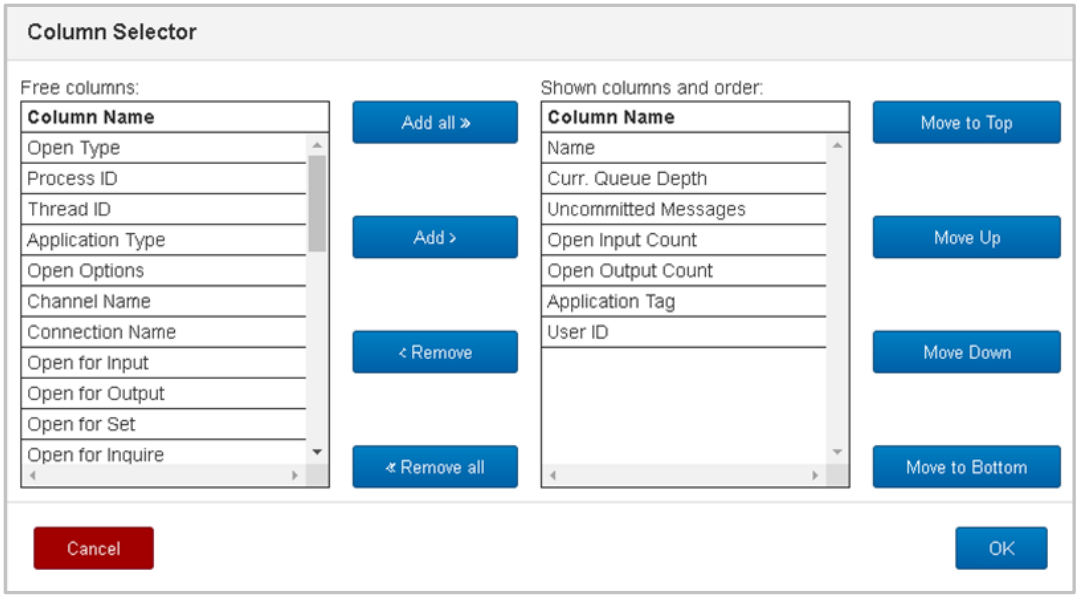

Figure 4.3.4.1-B. Select Columns

The table on the left side lists all columns available. The table on the right side shows the displayed columns. You can add a column to the *Queue Status* viewlet by selecting it from **Free columns** and clicking **Add** or for all columns by clicking **Add all**. Similarly, you can remove a column from the *Queue Status* viewlet by selecting it from **Shown columns and order** and clicking **Remove** or for all columns by clicking **Remove all**. The buttons on the right are used to place the columns in sequence.

4.3.4.2 Queue Properties

After selecting **Properties** from the queue's action menu (*Figure 4.3.4-A*), the *Properties* window for the local queue is displayed. For detailed descriptions of the various input fields and tabs, go to the IBM Knowledge Center:

https://www.ibm.com/support/knowledgecenter/SSFKSJ_9.1.0/com.ibm.mq.explorer.doc/e_properties_queues.htm.

See *Custom Attributes* for information on adding custom attributes to a queue (done on the **Custom Attributes** tab).

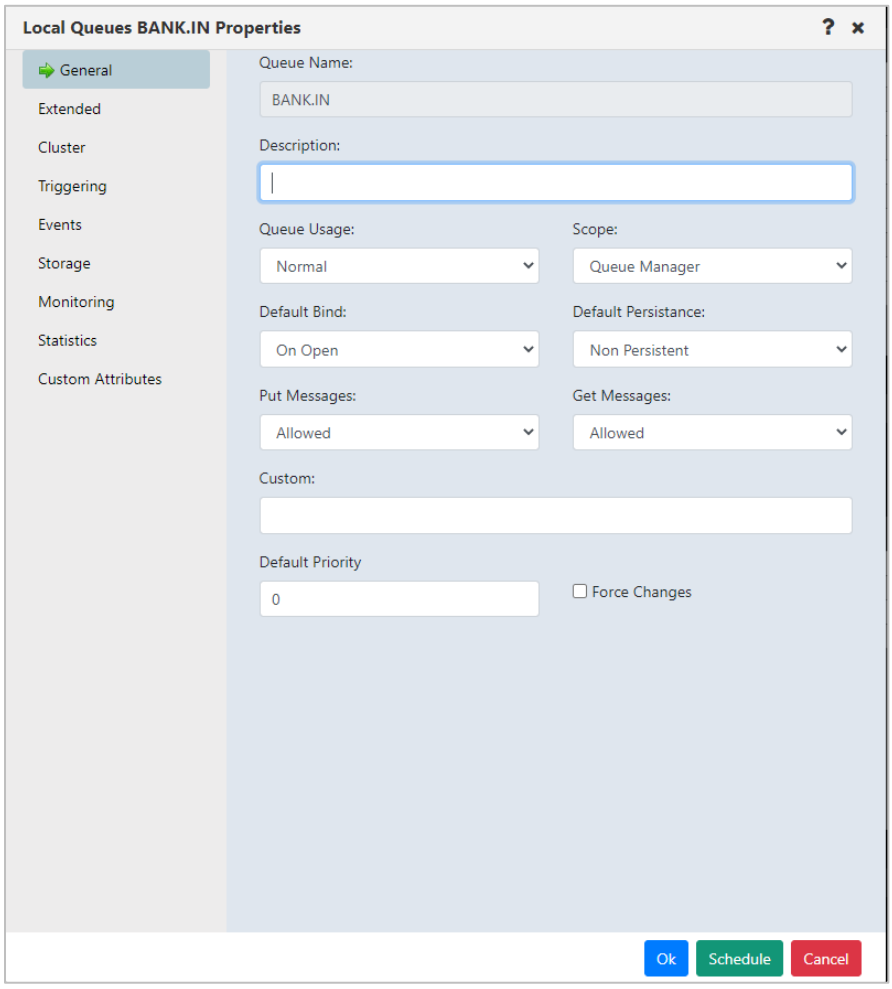

Figure 4.3.4.2-A. Local Queues Properties

For detailed descriptions of the various input fields for EMS queues, go to the TIBCO Product Documentation for queues:

https://docs.tibco.com/pub/ems/10.1.0/doc/html/GUID-EE423898-3C90-4F54-84D6-026F85ACD6E4.html.

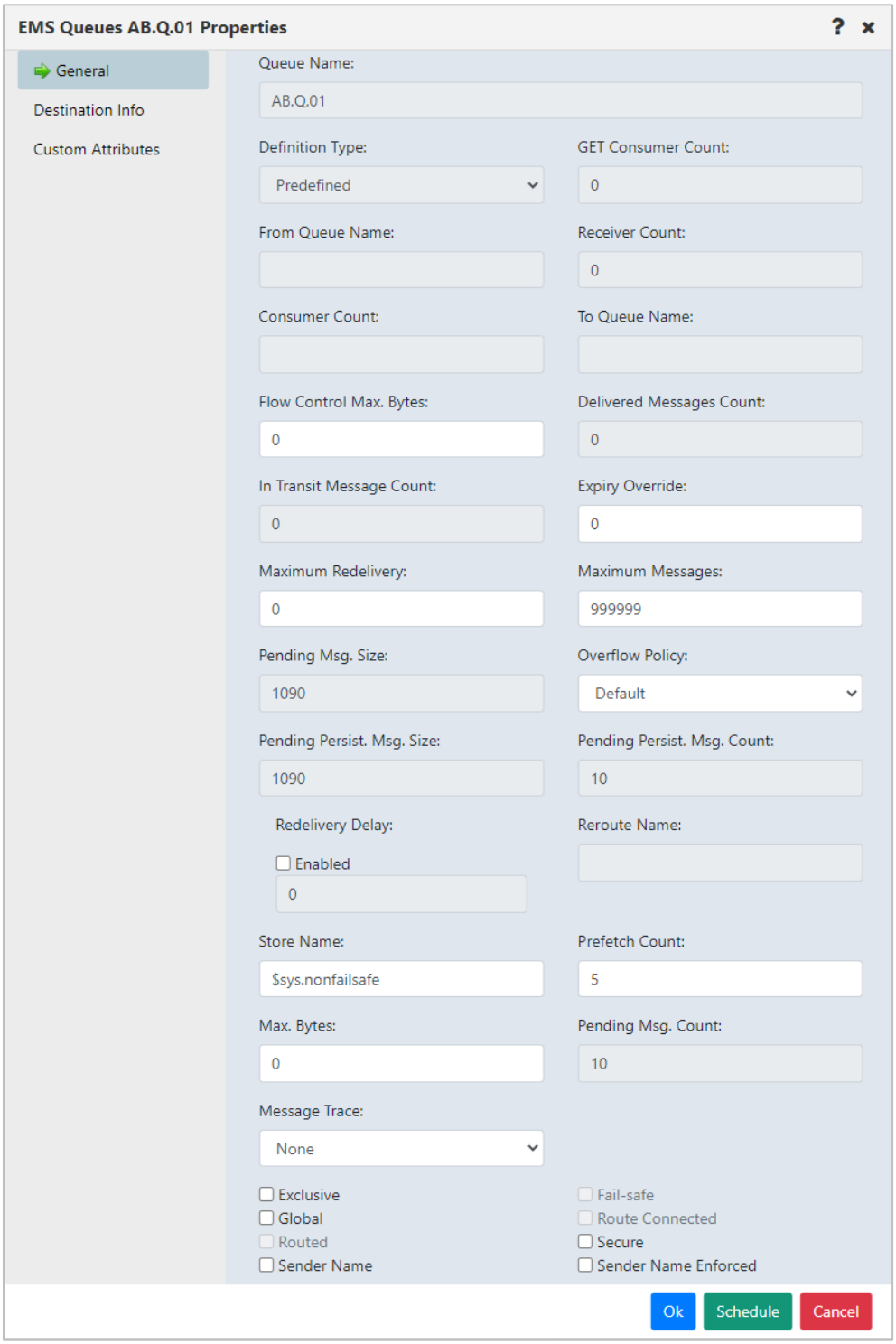

Figure 4.3.4.2-B. EMS Queue Properties

4.3.4.3 Messages

Messages can be put and managed in local, alias and EMS queues. A local or EMS queue containing messages will have an envelope folder icon . A red line envelope icon signifies that a queue is full and new messages cannot be added. After selecting **Browse messages** for a queue with messages from the queue's action menu (*Figure 4.3.4-A*) or clicking a value in the **Current Depth** column (works for local queues), the queue's messages are displayed.

To perform an action on a message, select it and then click the appropriate icon described in *Table 4.3.4.3-A* below, or select an action from the pop-up menu (*Figure 4.3.4.3-I*).

The **Active Filter** field at the top of the viewlet displays the **Message Criteria** that is currently enabled in settings (See Message Commands Tab for more information). You can change the **Message Criteria** by selecting a different configuration from the drop-down, or you can type its name to easily search for one. The viewlet will display messages according to the new filter selected. To clear the filter and display all messages, simply click the **X** within the field. Please note that the changes made will only be applied to the current *Console Message* viewlet and will not override the existing **Message Criteria** that is enabled in settings.

To customize the Messages viewlet see *Schemas*.

NOTE

Sometimes after selecting "Browse messages" for a queue, messages will not appear within the messages tab in the Console panel. This is due to the system periodically refreshing the content of queues. To get the most recent status of the queues, click the **Refresh** button .

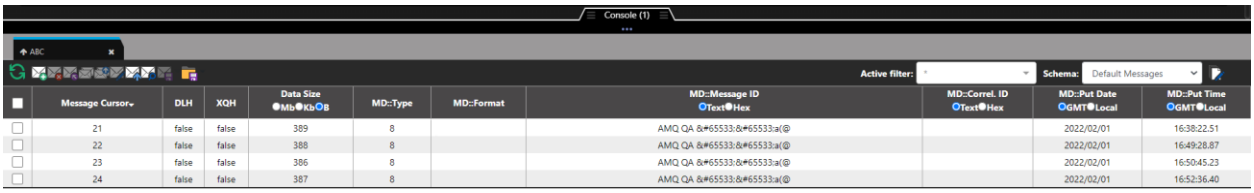

Figure 4.3.4.3-A. Messages Viewlet

Table 4.3.4.3-A. Message Viewlet Toolbar

Icon	Name	Description
	Refresh	Refreshes the viewlet.
	Put New	Displays the *Put New* window (*Figure 4.3.4.3.1-A*) to create and put new message(s) into selected queue.
	Delete	Allows you to delete the message. (Not available for alias queue messages).
	Reroute	Reroute messages from one queue to another queue located within a different queue manager (section *4.3.4.3.7*). (Not available for EMS or

Table 4.3.4.3-A. Message Viewlet Toolbar		
Icon	**Name**	**Description**
		alias queue messages).
	Copy message	Displays the *Copy messages* window (*Figure 4.3.4.3.3-A*) where a user can define how and where messages should be copied. (Not available for alias queue messages).
	Move message	Displays the *Move messages* window (*Figure 4.3.4.3.3-B*). On this screen the queue to move the messages is specified. (Not available for alias queue messages).
	Edit message	Displays the *Edit message* window (*Figure 4.3.4.3.4-A*) where a user can edit message information and data. (Not available for EMS or alias queue messages).
	Load from File	If loading single or multiple messages from .mmf files, .txt files, or files created by the IBM dmpmqmsg utility (*Figure 4.3.4.3.5-A*), opens the Command Settings dialog box to continue or configure settings. If loading messages from shared storage, opens the Select Files dialog.
	Browse Options	Opens the **Message Commands** tab of the User/Global Settings Window (*Message Commands*) to customize message browse options.
	Save selected messages	Exports selected message(s) to either an MMF or text file, or to shared storage. (Not available for alias queue messages.)
	Save all messages	Exports all messages to either an MMF or text file, or to shared storage. (Not available for alias queue messages.)

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Viewing Messages

To view a message, click anywhere on the message row. Specify either ASCII, EBCDIC, or Hexadecimal (Hex) for the Message ID (**Msg ID**) and Correlation ID (**Correl ID**).

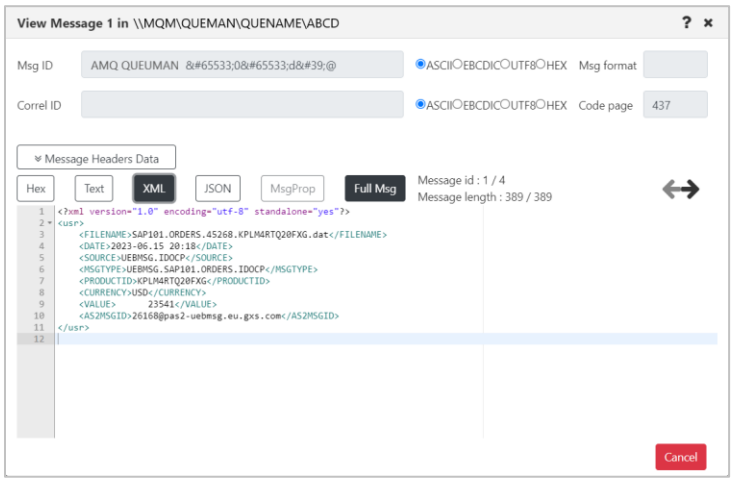

Figure 4.3.4.3-B. View Message

TIP

To copy or paste data, select the data, then use quick keyboard functions **CTRL** + **C** or **CTRL** + **V**, respectively.

To navigate between messages, use the navigation buttons, ← and →.

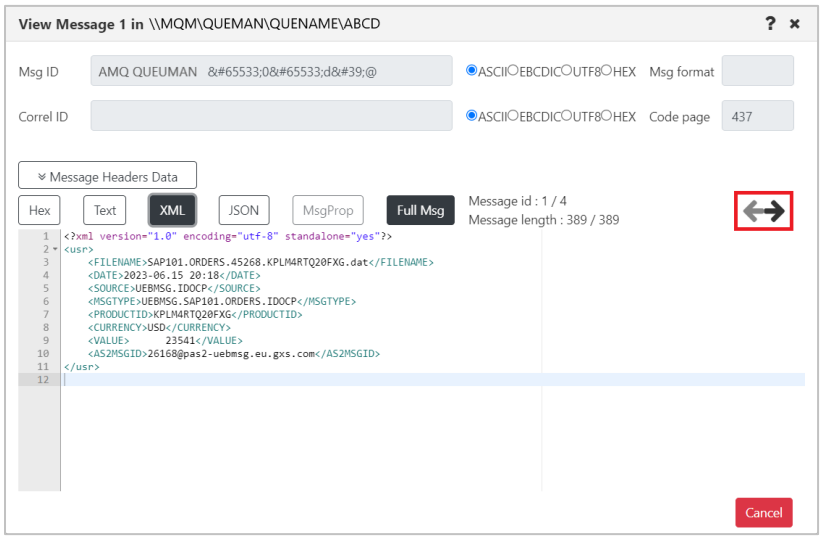

Figure 4.3.4.3-C. Navigate Between Messages

Click **Message Headers Data** (*Figure 4.3.4.3-D*) to view the header details (*Figure 4.3.4.3-E*).

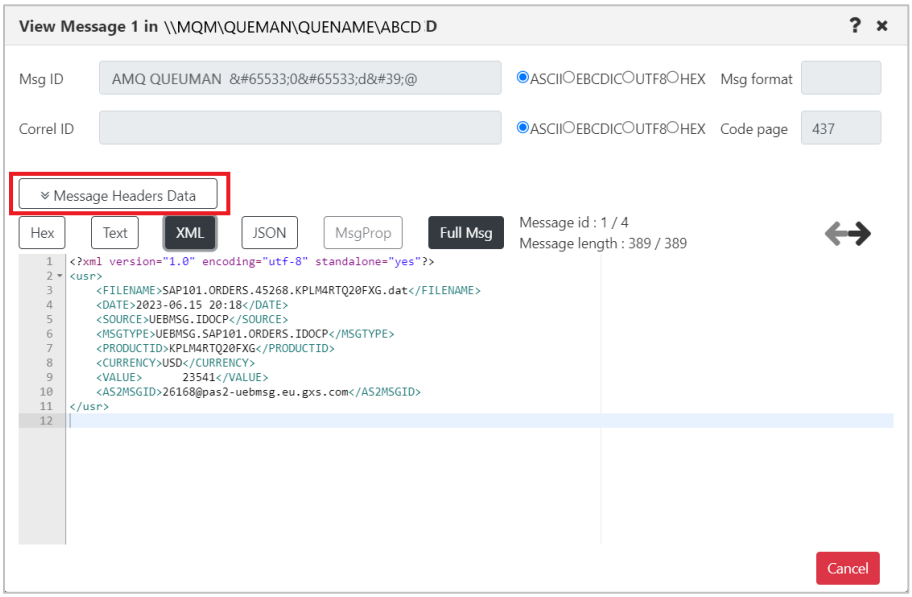

Figure 4.3.4.3-D. Message Headers Data Button

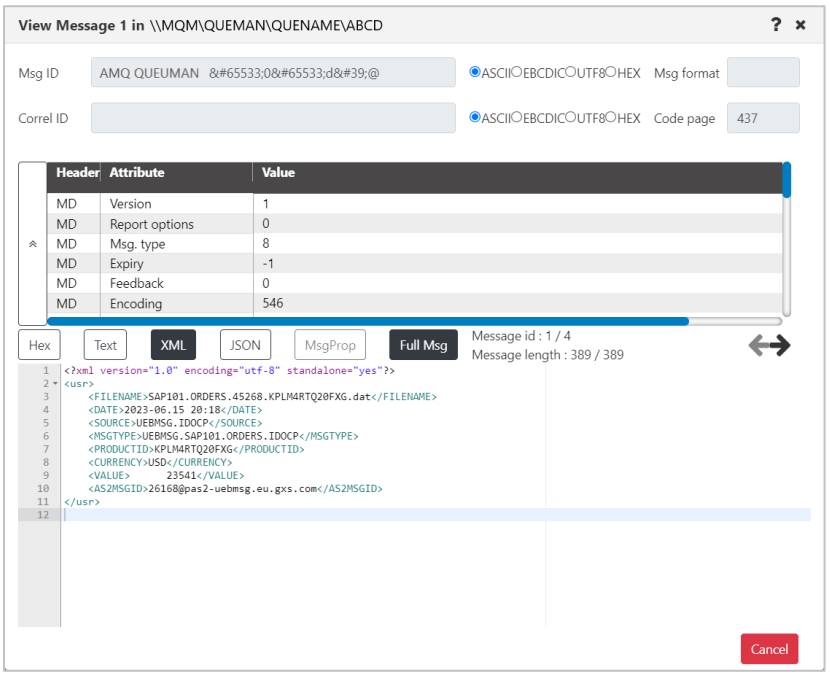

Figure 4.3.4.3-E. Message Headers

The messages can be displayed in either hexadecimal, text, XML or JSON format. Select one of these formats or check the **Text only** check box to easily toggle between text and the other modes.

To view the entire message, click the **Full Msg** button. A prompt appears confirming this action.

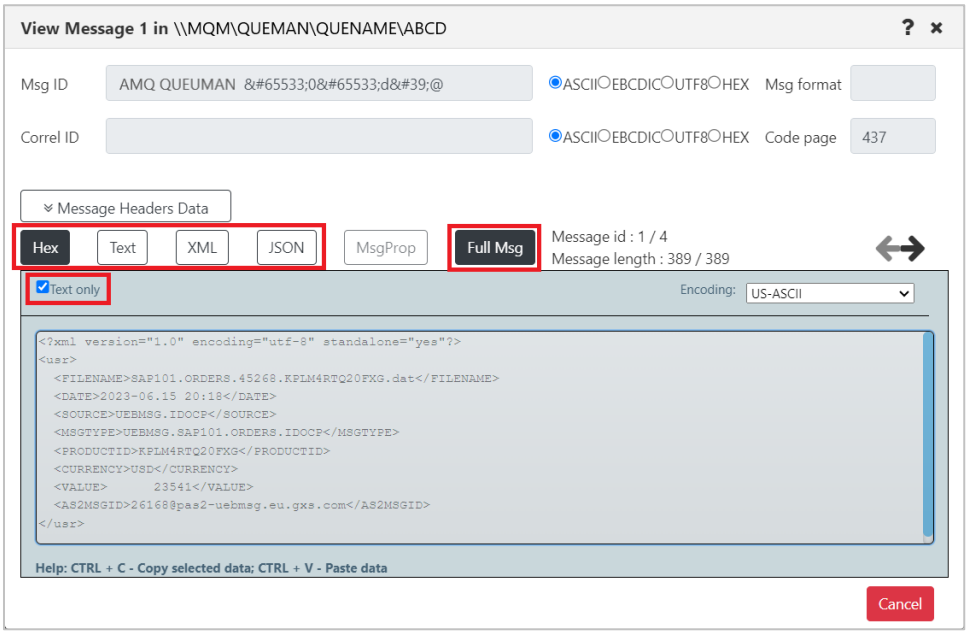

Figure 4.3.4.3-F. Hex or Text Message Mode / Full Message

The message encoding type can be changed. This is selected from the **Encoding** drop-down list. The UTF-8 encoding format (CCSID [coded character set identifier] 1208) is available for selection. Supported actions include viewing messages and editing messages, loading messages from a file, and putting messages to a queue.

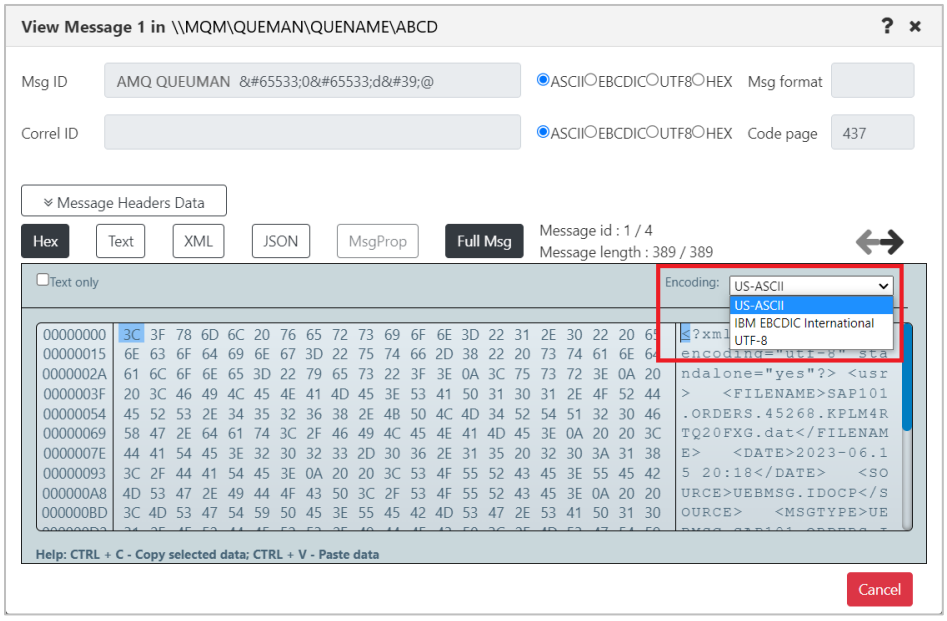

Figure 4.3.4.3-G. Message Encoding

To switch between decimal and hexadecimal mode for the address of the first byte, click anywhere in the address field.

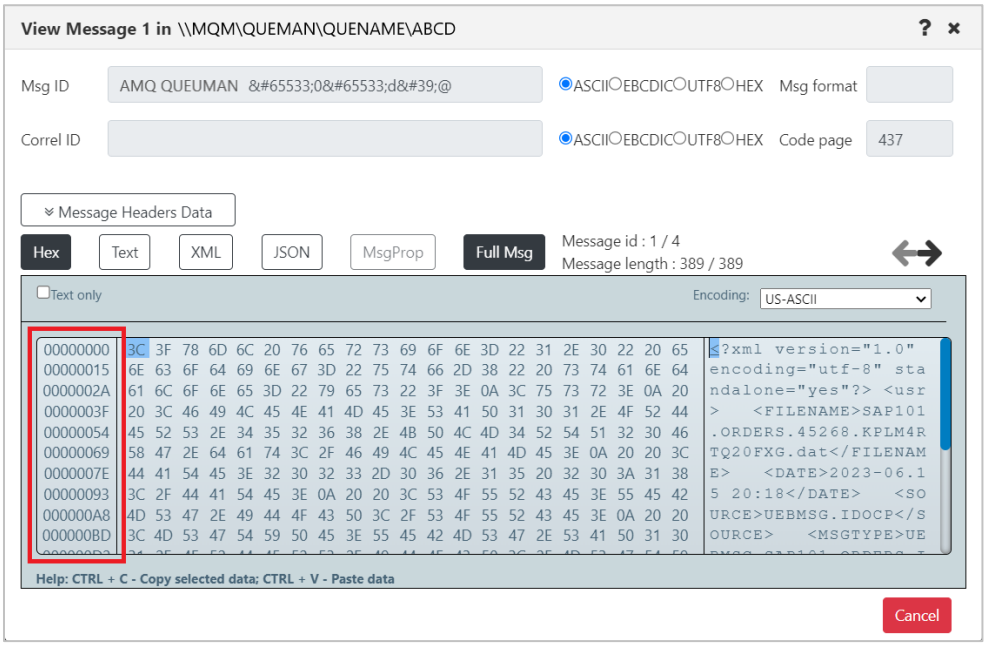

Figure 4.3.4.3-H. Address of First Byte

Message Action Menu

The following pop-up menu appears when a single message is selected.

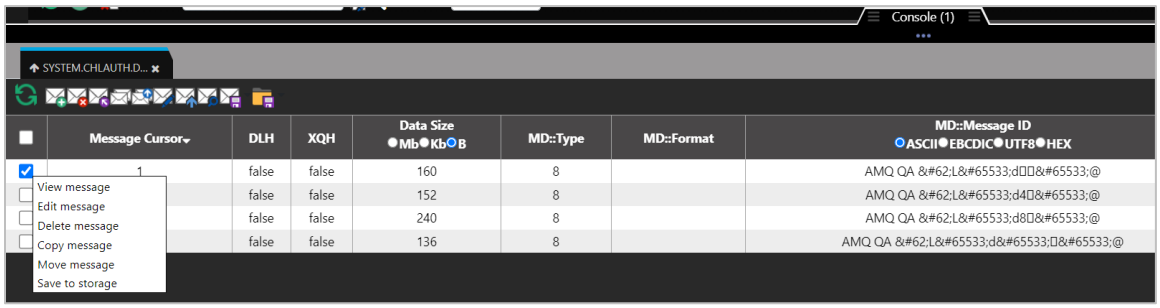

Figure 4.3.4.3-I. Message Action Menu

If multiple or all messages are selected, the following pop-up menu appears. To select all messages, click the **Select all** button located on the left side of the viewlet. Click the same button, now titled **Deselect all**, to unselect all messages.

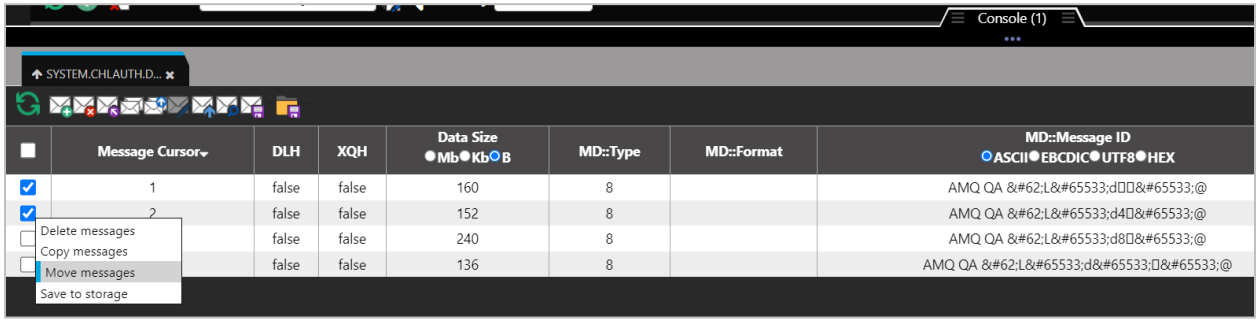

Figure 4.3.4.3-J. Action Menu for Multiple Messages

NOTE

The message action menu and viewlet toolbar options may differ due to the queue type. Please see *Table 4.3.4.3-A* for more information on the available options of each messages queue type.

Load More Messages / Navigate to a Page

To load additional messages, use the **Prev** and **Next** buttons located at the bottom of the viewlet or type a page number within the **Page** field.

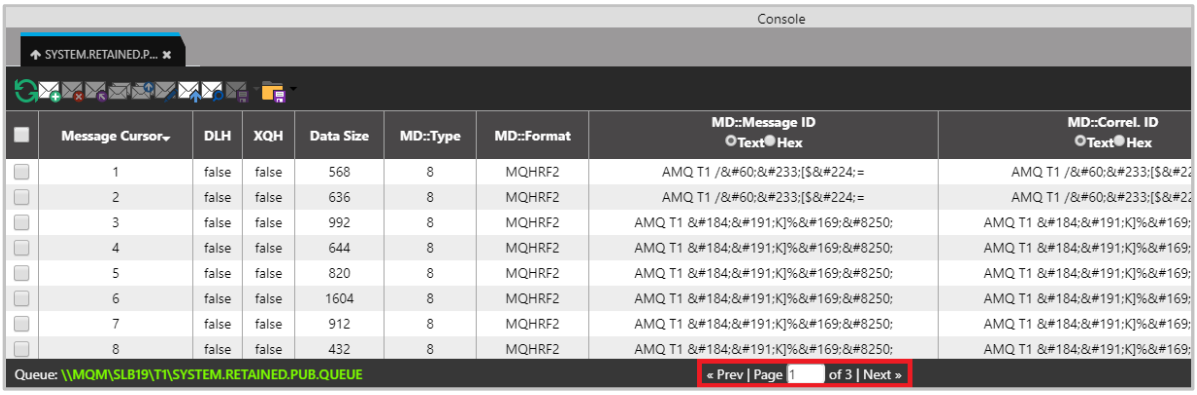

Figure 4.3.4.3-K. Load More Messages / Navigate to a Page

4.3.4.3.1 Put New

The *Put New* window is displayed when the **Put New** icon is selected from the *Message* viewlet (*Figure 4.3.4.3-A*) or **Messages** > **Put New** is selected from the queue's pop-up menu options (*Figure 4.3.4-A*). It is used to create new messages and put them into one or more destination queues.

To control the properties of messages that are created during the Put New or Load from File processes, see Message Commands Tab.

See *Table 4.3.4.3.1-A* for an explanation of options on the **General** tab.

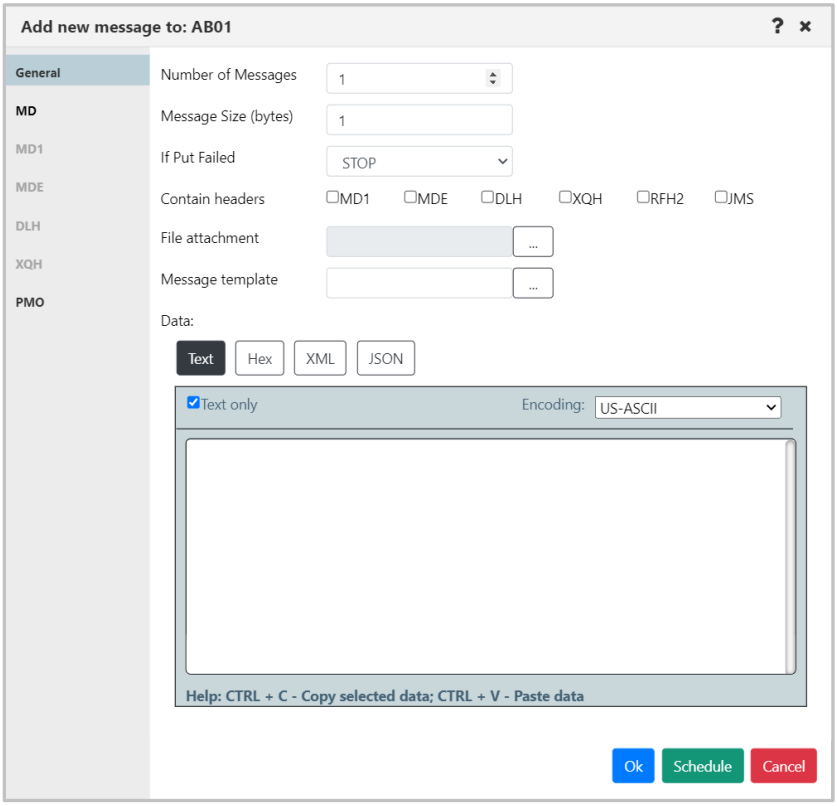

Figure 4.3.4.3.1-A. Put New Window

TIP

To copy or paste data, select the data, then use quick keyboard functions CTRL + C or CTRL + V, respectively.

Within the **Data** section, users can check the **Text only** checkbox to display the message content as text, or leave off to view message content as code. Also, the message encoding type can be changed. This is selected from the **Encoding** drop-down list (*Figure 4.3.4.3.1-B*).

To switch between decimal and hexadecimal mode for the address of the first byte, click anywhere in the address field. See *Address of First Byte* (*Figure 4.3.4.3-H*) for an example.

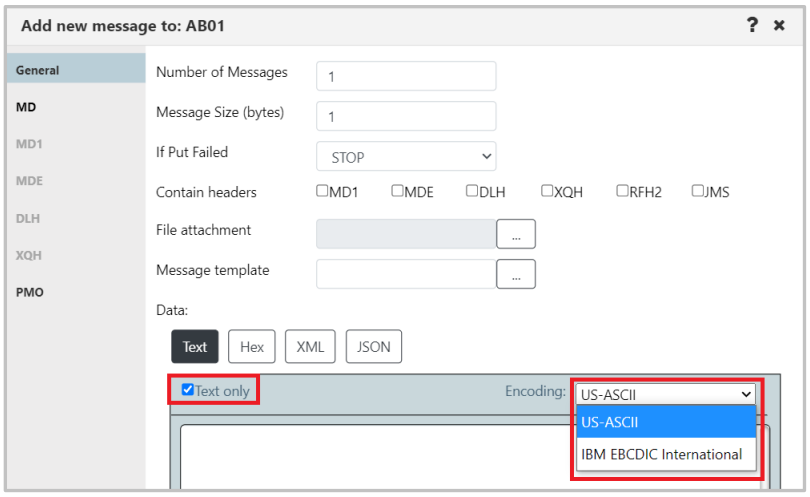

Figure 4.3.4.3.1-B. Put New Window – Encoding on General Tab

Table 4.3.4.3.1-A. Put New Message		
Control	**Description**	**States and Conditions**
Number of Messages	Enter the number of messages to put into a queue.	Always enabled.
Message Size (bytes)	Displays the size of the message text being entered or created in the Data field.	
If Put Failed	Select the action that should be taken if Put command fails.	
Contains headers	The header(s) in the message. Select MD1, MDE, DLH, XQH, RFH2, JMS, or a combination of these. Please note that DLH and XQH cannot be selected together, and RFH2 and JMS cannot be selected together.	
File attachment	Enter the path of the file to attach to the message.	
File attachment button	Displays the *Open File* dialog box to select the file to attach to this message.	
Message template	(Available in a future version)	
Message template button	(Available in a future version)	
RFH2 headers	Enter raw RFH2 header data.	Enabled only if RFH2 checkbox is selected.
JMS headers	Enter raw RFH2 header data. Your entry automatically includes <usr></usr> tags.	Enabled only if JMS checkbox is selected.

Table 4.3.4.3.1-A. Put New Message		
Control	**Description**	**States and Conditions**
MD	Displays the *Message Descriptor Properties* window *(Figure 4.3.4.3.1-C)* where the user can edit the MD header of the message.	Enabled only if MD1 checkbox is *not* selected.
MD1	Displays the *Message Descriptor Properties* window *(Figure 4.3.4.3.1-C)* where the user can edit the MD1 header of the message.	Enabled only if MD1 checkbox is selected.
MDE	Displays the *Message Descriptor Extension* window *(Figure 4.3.4.3.1-H)* where the user can edit the MDE header of the message.	Enabled only if MDE checkbox is selected.
DLH	Displays the *Dead Letter Queue Header* window *(Figure 4.3.4.3.1-I) where* the user can edit the DLH header of the message.	Enabled only if DLH checkbox is selected.
XQH	Displays the *Transmission Queue Header* window *(Figure 4.3.4.3.1-J)* where the user can edit the XQH header of the message.	Enabled only if XQH checkbox is selected.
PMO	Displays the *Message Put Options* window *(Figure 4.3.4.3.1-N)* where the user can set put message options.	Always enabled.

Message Descriptor Properties

The **MD** and **MD1** tabs are used to view/edit MD and MD1 message headers.

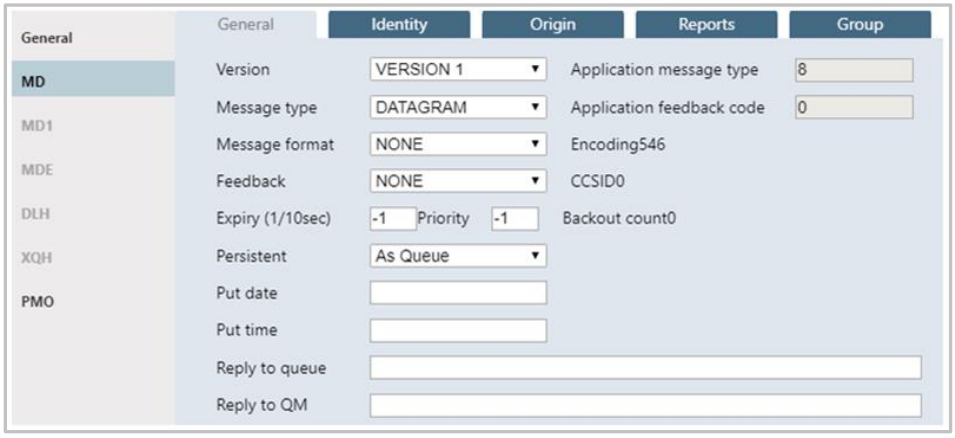

Figure 4.3.4.3.1-C. Message Descriptor Properties – General

Table 4.3.4.3.1-B. Message Descriptor Properties – General		
Control	**Description**	**States and Conditions**
Version	Select MD version from the list.	Always enabled.

Table 4.3.4.3.1-B. Message Descriptor Properties – General		
Application message type	Input application message type.	Editable only if **APPLICATION** message type is selected from the **Message Type** drop-down menu.
Message type	Select message type from the list.	Always enabled.
Application feedback code	Input application feedback code.	Editable only if **APPLICATION** feedback code is selected from the Feedback drop-down menu.
Message format	Select message format from the list. If either the RFH2 or the JMS option is selected on the General tab, then the **MQHRF2** list item is automatically selected in the **Message format** list on the **Message Descriptor Properties** tab. If either option is later unselected, the **Message format** is reset to its previous value.	Always enabled.
Encoding	Provides message data encoding.	Read only.
Feedback	Select message feedback code from the list.	Always enabled.
CCSID	Provides message coded character set identifier.	Read only.
Expiry	Input message expiry.	Always enabled.
Priority	Input message priority.	
Backout count	Provides backout counter.	Read only.
Persistent	Set message persistence.	Always enabled.
Put date	Provides date when message was put.	Always enabled.
Put time	Provides time when message was put.	
Reply to queue	Input name of a message queue to which the reply or report message should be sent.	
Reply to QM	Input name of the queue manager to which the reply or report message should be sent.	

Below are MDS **Identity** tab properties.

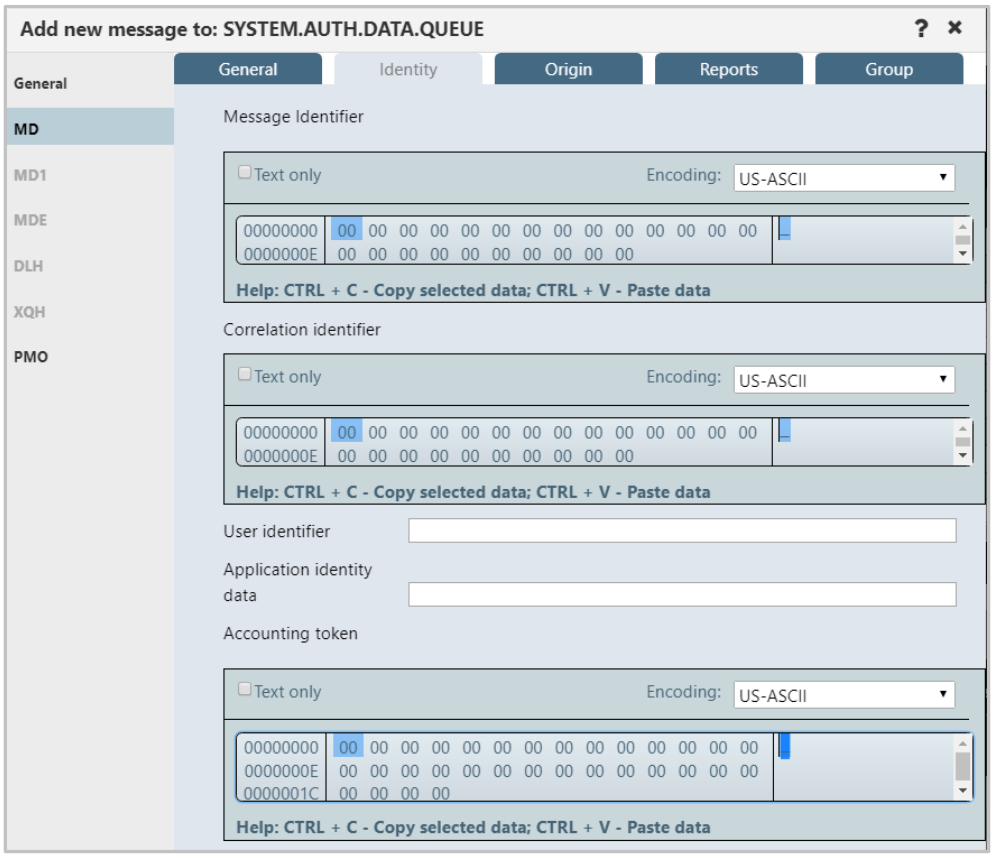

Figure 4.3.4.3.1-D. Message Descriptor Properties – Identity

Table 4.3.4.3.1-C. Message Descriptor Properties – Identity

Control	Description	States and Conditions
Message identifier	Edit message identifier.	Always enabled.
Correlation identifier	Edit message correlation identifier.	
User identifier	Enter user identifier.	
Application identity data	Enter application identity data.	
Accounting token	Edit message accounting token.	

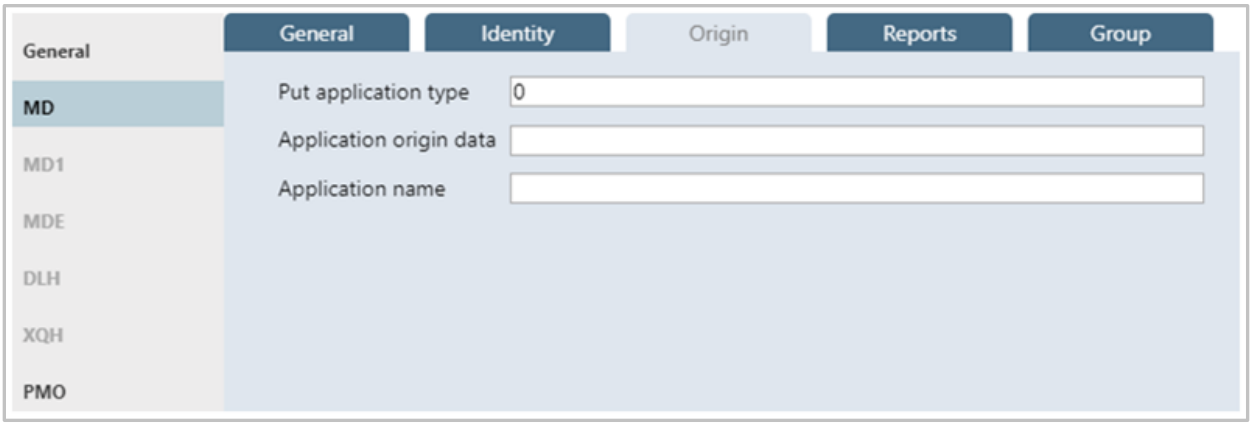

Figure 4.3.4.3.1-E. Message Descriptor Properties – Origin

Table 4.3.4.3.1-D. Message Descriptor Properties – Origin		
Control	**Description**	**States and Conditions**
Put application type	Input put application type.	Always enabled.
Application origin data	Input application origin data.	
Application name	Input put application name.	

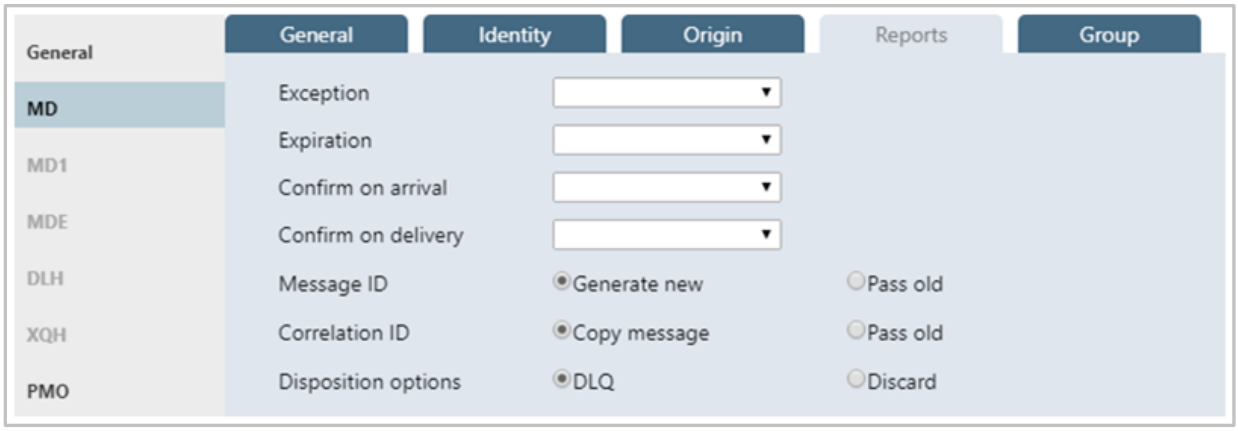

Figure 4.3.4.3.1-F. Message Descriptor Properties – Reports

Table 4.3.4.3.1-E. Message Descriptor Properties – Reports		
Control	**Description**	**States and Conditions**
Exception	Select an exception report message type from the list.	Always enabled.
Expiration	Select an expiration report message type from the list.	
Confirm on arrival	Select confirm on arrival report message type from the list.	

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Table 4.3.4.3.1-E. Message Descriptor Properties – Reports		
Control	**Description**	**States and Conditions**
Confirm on delivery	Select confirm on delivery report message type from the list.	
Message ID	Specify how the Message ID of the report message (or the reply message) is to be set.	
Correlation ID	Specify how the Correlation ID of the report message (or the reply message) is to be set.	
Disposition options	Specify message disposition type when a message cannot be delivered to its destination queue.	

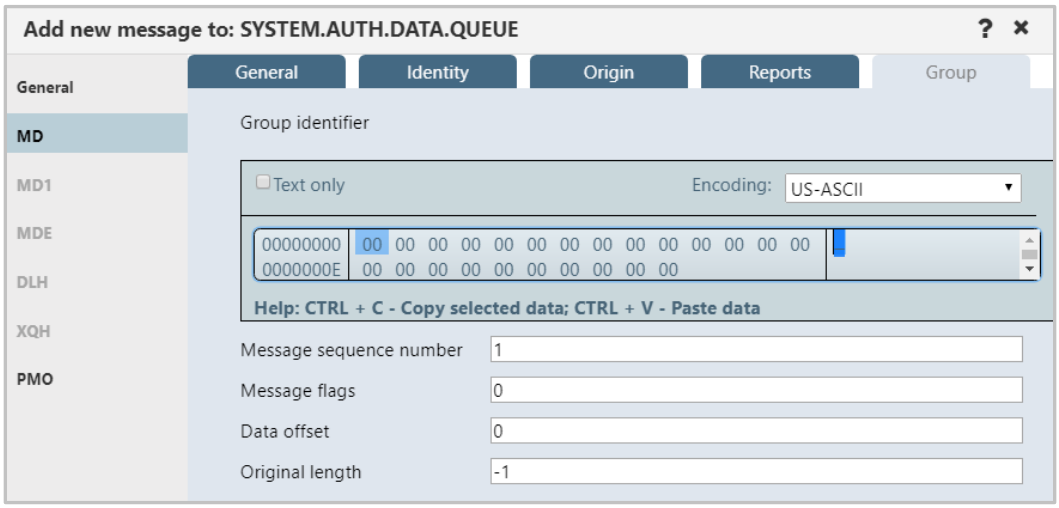


Figure 4.3.4.3.1-G. Message Descriptor Properties – Group

NOTE

If it is a MD1 or XQH header, then the **Group** tab is removed.

Table 4.3.4.3.1-F. Message Descriptor Properties – Group		
Control	**Description**	**States and Conditions**
Group identifier	Edit group identifier.	Always enabled.
Message sequence number	Input sequence number of the logical message within the group.	
Message flags	Input message flags.	
Data offset	Input offset of data in physical message from the start of the logical message.	
Original length	Input length of original message.	

Message Descriptor Extension Properties

The *Message Descriptor Extension Properties* window is displayed when the **MDE** button is clicked from *Put New* window (*Figure 4.3.4.3.1-A*). The *Message Descriptor Extension Properties* window is used to edit the MDE message header.

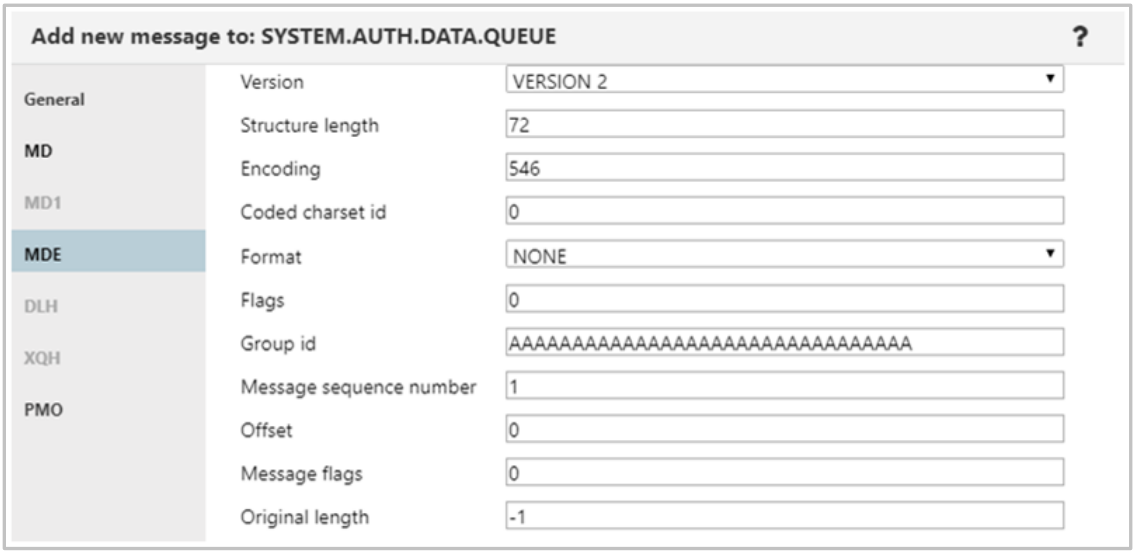


Figure 4.3.4.3.1-H. Message Descriptor Extension

Table 4.3.4.3.1-G. Message Descriptor Extension

Control	Description
Version	Select version from the list.
Structure length	Specify structure length.
Encoding	Specify message data encoding.
Coded charset id	Specify message coded character set identifier.
Format	Select message format from the list.
Flags	Specify a value for flags.
Group id	Edit group identifier.
Message sequence number	Input sequence number of logical message within group.
Offset	Input offset of data in physical message from the start of the logical message.
Message flags	Input flags that specify attributes of the message.
Original length	Input length of original message.

Dead Letter Queue Header Properties

The *Dead Letter Queue Header* window is displayed, when the **DLH** button is clicked from *Put New* window (*Figure 4.3.4.3.1-A*). The *Dead Letter Queue Header* window is used to edit the DLH message header.

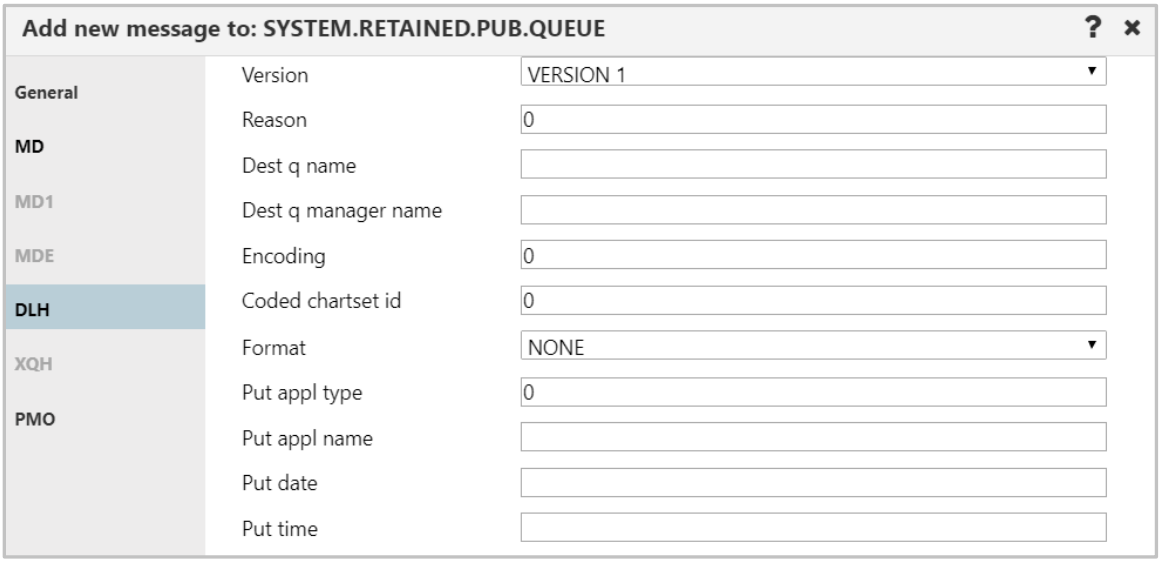


Figure 4.3.4.3.1-I. Dead Letter Queue Header

Table 4.3.4.3.1-H. Dead Letter Queue Header

Control	Description
Version	Select version from the list.
Reason	Input reason code.
Dest q name	Input name of destination queue.
Dest q manager name	Input name of destination queue manager.
Encoding	Specify message data encoding.
Coded chartset id	Specify message coded character set identifier.
Format	Select message format from the list.
Put appl type	Input put application type.
Put appl name	Input put application name.
Put date	Provides date when message was put.
Put time	Provides time when message was put.

Transmission Queue Header Properties

The *Transmission Queue Header* window is displayed, when the **XQH** button is clicked from *Put New* window (*Figure 4.3.4.3.1-A*). The *Transmission Queue Header* window is used to view/edit the XQH message header.

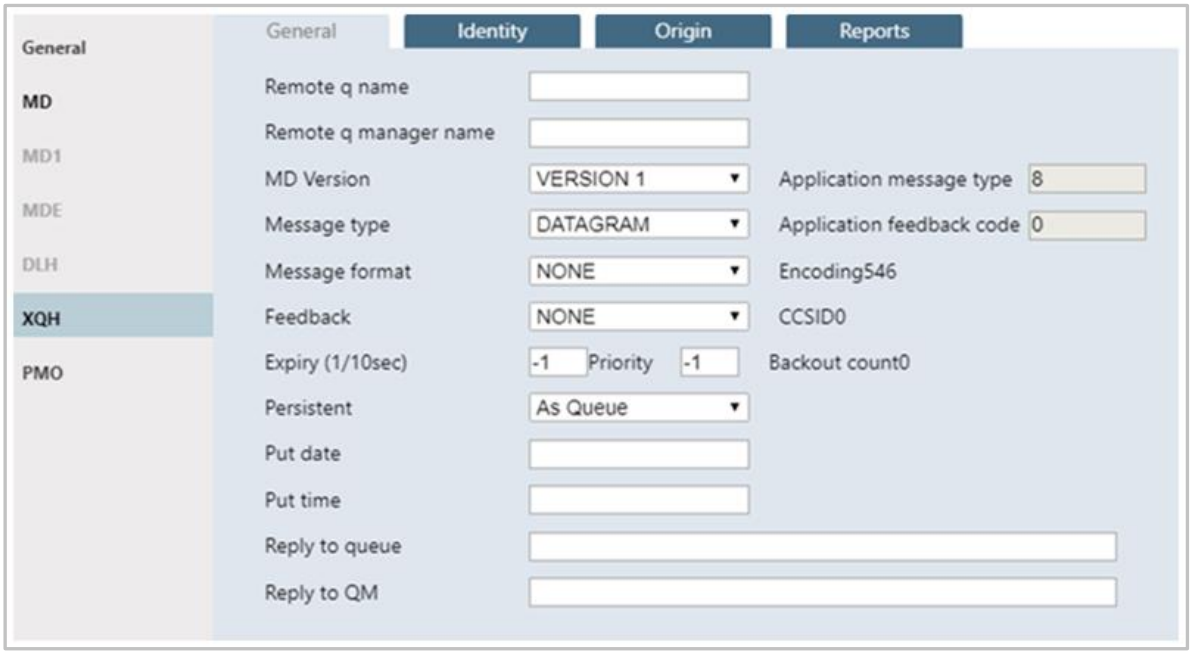


Figure 4.3.4.3.1-J. Transmission Queue Header – General

Table 4.3.4.3.1-I. Transmission Queue Header – General

Control	Description	States and Conditions
Remote q name	The name of the remote queue.	Always enabled.
Remote q manager name	The name of the remote queue manager.	
MD Version	Select the MD version from the list.	
Application message type	Input application message type.	Editable only if APPLICATION message type is selected in Message Type combo box.
Message type	Select message type from the list.	Always enabled.
Application feedback code	Input application feedback code.	Editable only if APPLICATION feedback code is selected in Feedback combo box.
Message format	Select message format from the list.	Always enabled.
Encoding	Provides message data encoding.	Read only.

Table 4.3.4.3.1-I. Transmission Queue Header – General		
Control	**Description**	**States and Conditions**
Feedback	Select message feedback code from the list.	Always enabled.
CCSID	Provides message coded character set identifier.	Read only.
Expiry (1/10sec)	Input message expiry.	Always enabled.
Priority	Input message priority.	Always enabled.
Backout count	Provides backout counter.	Read only.
Persistent	Select message persistence.	Always enabled.
Put date	Input date when message was put.	
Put time	Input time when message was put.	
Reply to queue	Input name of a message queue to which the reply or report message should be sent.	
Reply to QM	Input name of the queue manager to which the reply or report message should be sent.	

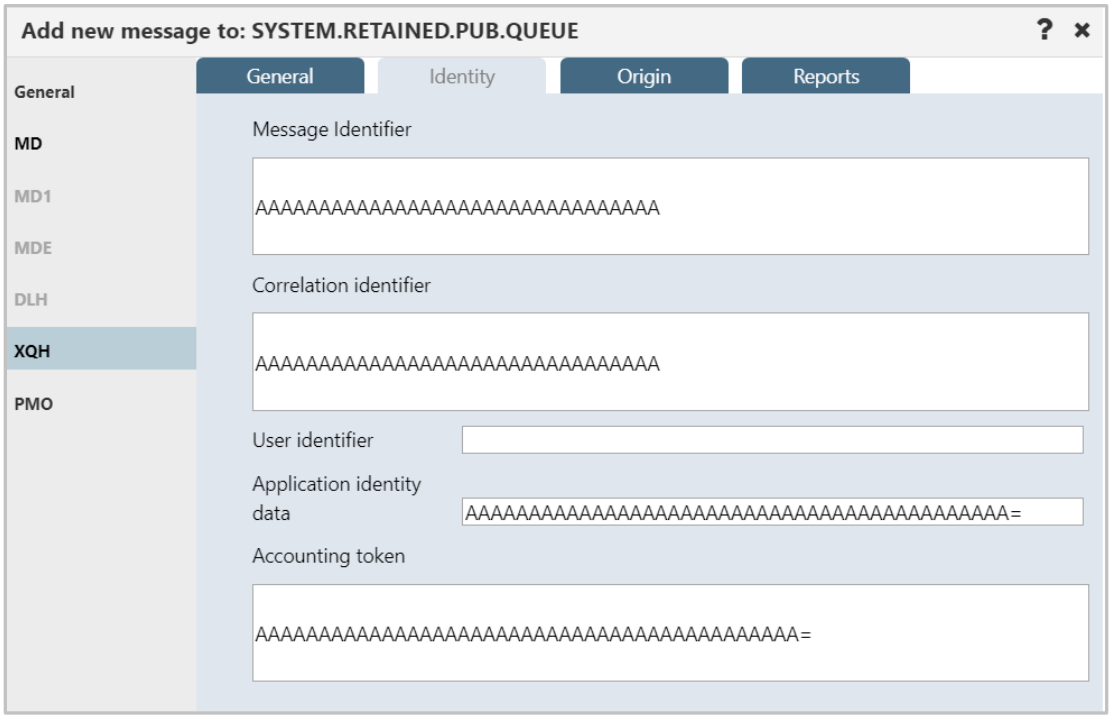


Figure 4.3.4.3.1-K. Transmission Queue Header – Identity

Table 4.3.4.3.1-J. Transmission Queue Header – Identity		
Control	**Description**	**States and Conditions**
Message identifier	Edit message identifier.	Always enabled.
Correlation identifier	Edit message correlation identifier.	
User identifier	Enter user identifier.	
Application identity data	Enter application identity data.	
Accounting token	Edit message accounting token.	

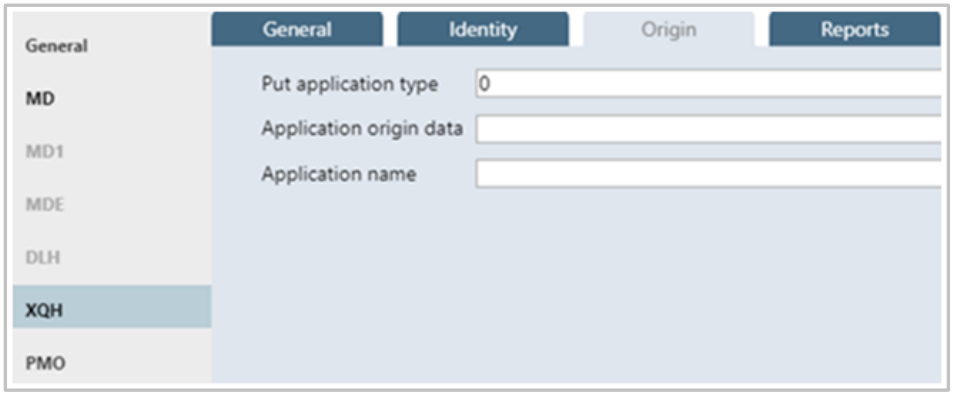


Figure 4.3.4.3.1-L. Transmission Queue Header – Origin

Table 4.3.4.3.1-K. Transmission Queue Header – Origin		
Control	**Description**	**States and Conditions**
Put application type	Input put application type.	Always enabled.
Application origin data	Input application origin data.	
Put application name	Input put application name.	

Additional options for XQH messages are available to configure.

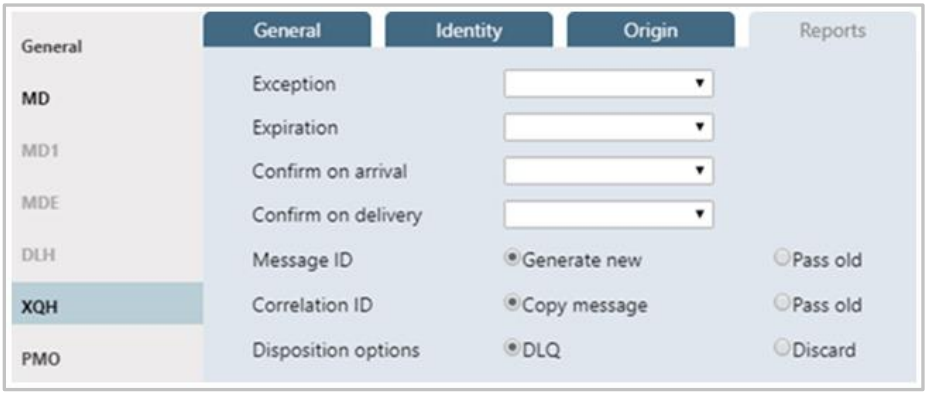


Figure 4.3.4.3.1-M. Transmission Queue Header – Reports

Table 4.3.4.3.1-L. Transmission Queue Header – Reports		
Control	**Description**	**States and Conditions**
Exception	Select an exception report message type from the list.	Always enabled.
Expiration	Select an expiration report message type from the list.	
Confirm on arrival	Select confirm-on-arrival report message type from the list.	
Confirm on delivery	Select confirm-on-delivery report message type from the list.	
Message ID	Specify how the Message ID of the report message (or the reply message) is to be set.	
Correlation ID	Specify how the Correlation ID of the report message (or the reply message) is to be set.	
Disposition options	Specify message disposition type when a message cannot be delivered to its destination queue.	

Message Put Options Properties

The *Message Put Options* window is displayed when **PMO** button on the *Put New* window (*Figure 4.3.4.3.1-A*) is clicked. The *Message Put Options* window is used to specify any options the user wants to use when putting a message onto a queue.

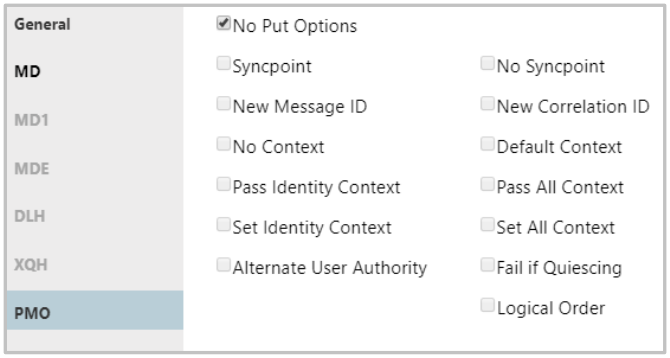


Figure 4.3.4.3.1-N. Message Put Options

Table 4.3.4.3.1-M. Message Put Options		
Control	**Description**	**States and Conditions**
No Put Options	Specifies that no options are used.	Disabled if another entry is selected.
Syncpoint	Operate within the normal unit-of-work protocols.	Enabled only when

Table 4.3.4.3.1-M. Message Put Options		
Control	**Description**	**States and Conditions**
No Syncpoint	Operate outside the normal unit-of-work protocols.	**No Put Options** is **NOT** selected.
New Message ID	Used to identify a new message identifier.	
New Correlation ID	Used to identify a new correlation identifier.	
No Context	Context field in MQMD are set to blanks, nulls, and zeros.	
Default Context	Message will have default context associated with it.	
Pass Identity Context	Passes identity context information from the original message to a new message.	
Pass All Context	Passes identity and origin context information from the original message to a new message.	
Set Identity Context	Sets identity context information from the original message to a new message.	
Set All Context	Sets identity and origin context information from the original message to a new message.	Enabled only when **No Put Options** is **NOT** selected.
Alternate User Authority	User identifier to validate authority to messages on the queue.	
Fail if Quiescing	Forces MQPUT or MQPUT1 call to fail if queue manager in quiescing state.	
Logical Order	Puts groups and segment information in logical order rather than physical order.	

4.3.4.3.2 Delete Messages

NOTE

If you have chosen to select messages by **Message Position** (on the **Message Commands** tab of the *User/Global Settings Window*), the delete icon will not be available when multiple individual messages are selected. You can still choose to delete all messages using the message(s) pop-up menu.

The *Confirm delete action* dialog box is displayed when one or more messages are selected and the **Delete** icon is selected from the *Messages* viewlet (*Figure 4.3.4.3-A*) or **Delete message(s)** is selected from the message(s) pop-up menu (*Figure 4.3.4.3-I* / *Figure 4.3.4.3-J*). It is used to delete messages from the queue. Click **Yes** to delete the selected messages or **No** to cancel.

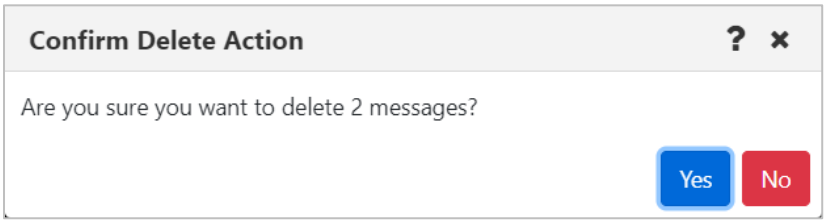


Figure 4.3.4.3.2-A. Delete Confirmation

The following window is displayed when **Messages** > **Delete All** is selected from the queue's action menu in a queues viewlet (*Figure 4.3.4-A*). If you select a criteria record, messages will only be deleted if they meet the criteria specifications (see *4.4.4.1.2, Message Commands* for more information on message criteria).

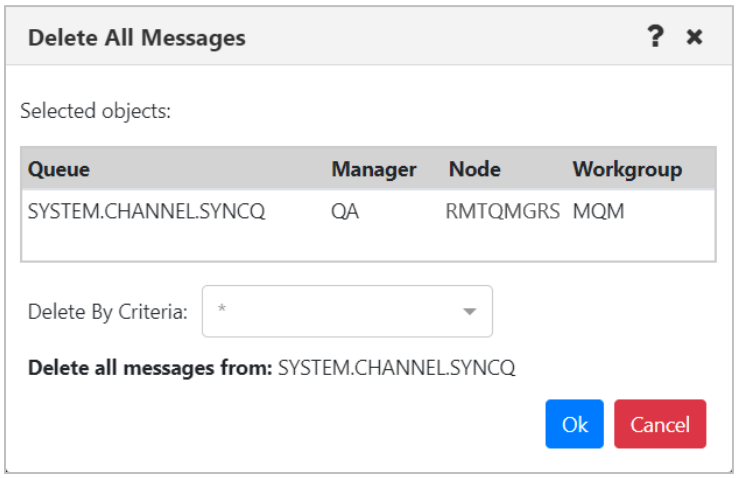


Figure 4.3.4.3.2-B. Delete All

4.3.4.3.3 Copy / Move

> NOTE
>
> If you have chosen to select messages by **Message Position** (on the **Message Commands** tab of the *User/Global Settings Window*), the copy and move icons will not be available when multiple individual messages are selected. You can still choose to copy or move *all* messages using the message(s) pop-up menu.

The *Copy messages* or *Move messages* windows are displayed when one or more messages are selected and the **Copy message/Move message** icons / are selected from the *Messages* viewlet, (*Figure 4.3.4.3-A*) or **Copy message(s)/Move message(s)** is selected from the message(s) pop-up menu (*Figure 4.3.4.3-I* / *Figure 4.3.4.3-J*). Messages can be copied/moved into all queues available in the **Queue name** list.

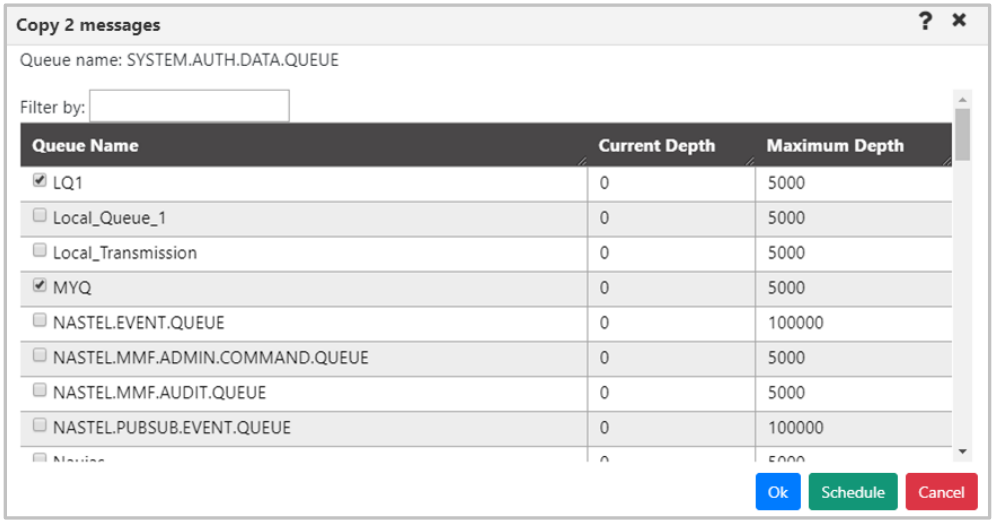


Figure 4.3.4.3.3-A. Copy Messages

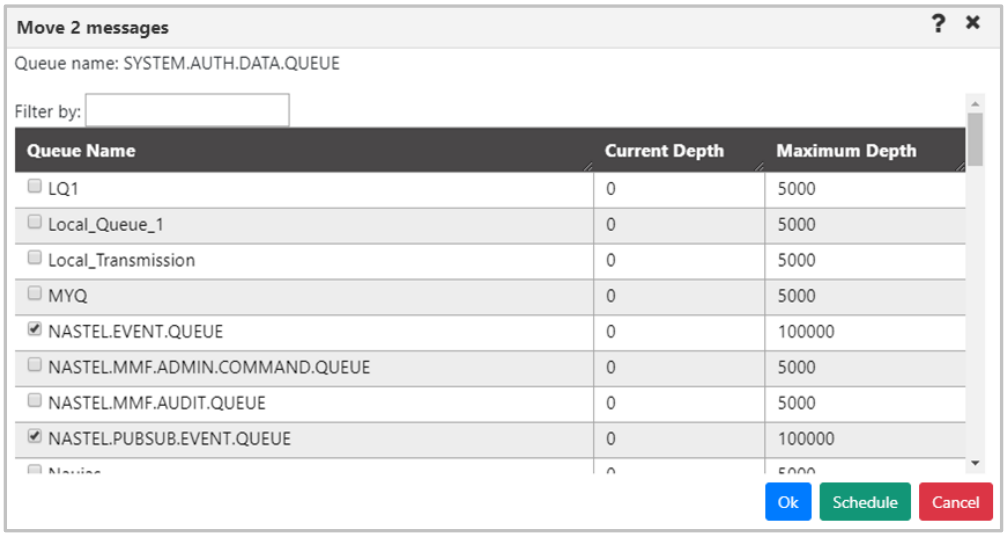
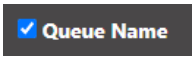


Figure 4.3.4.3.3-B. Move Messages

The following windows appear when **Messages** > **Copy All** or **Move All** is selected from the queue's action menu in a queues viewlet (*Figure 4.3.4-A*). If you select a message criteria record, messages will only be copied or moved if they meet the criteria specifications (see *Message Commands* for more information on message criteria).

The checkbox in the Queue Name column header  selects all visible queues (clearing the checkbox clears the selection). If a filter has been applied to the list before the checkbox is selected, then only items in the filtered list are selected.

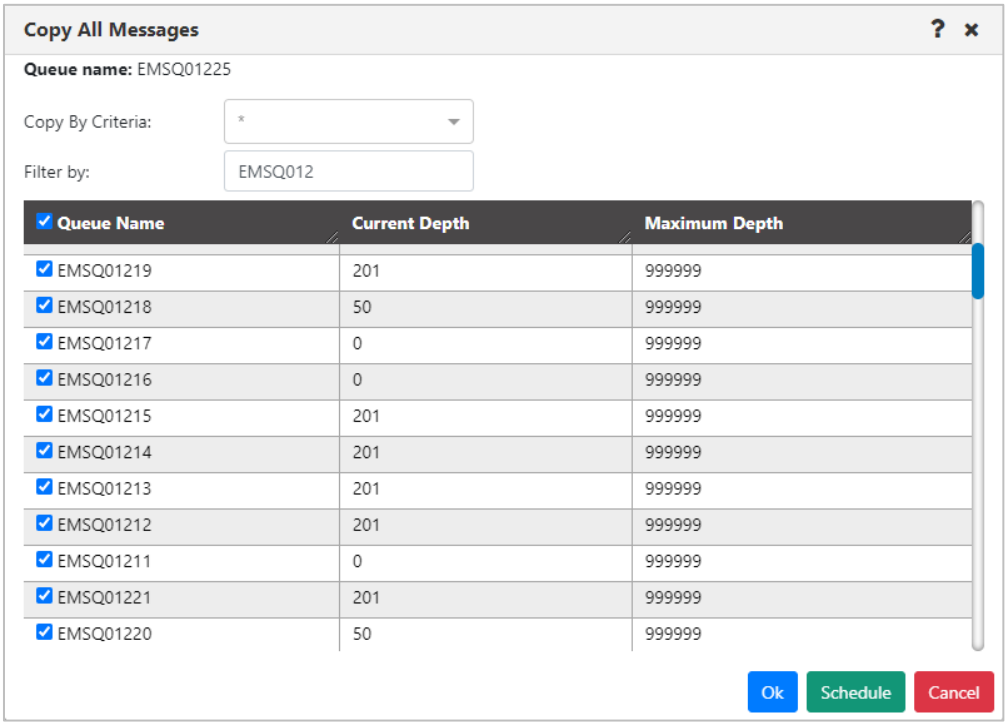


Figure 4.3.4.3.3-C. Copy All Messages

When the filter is removed, the selection is retained:

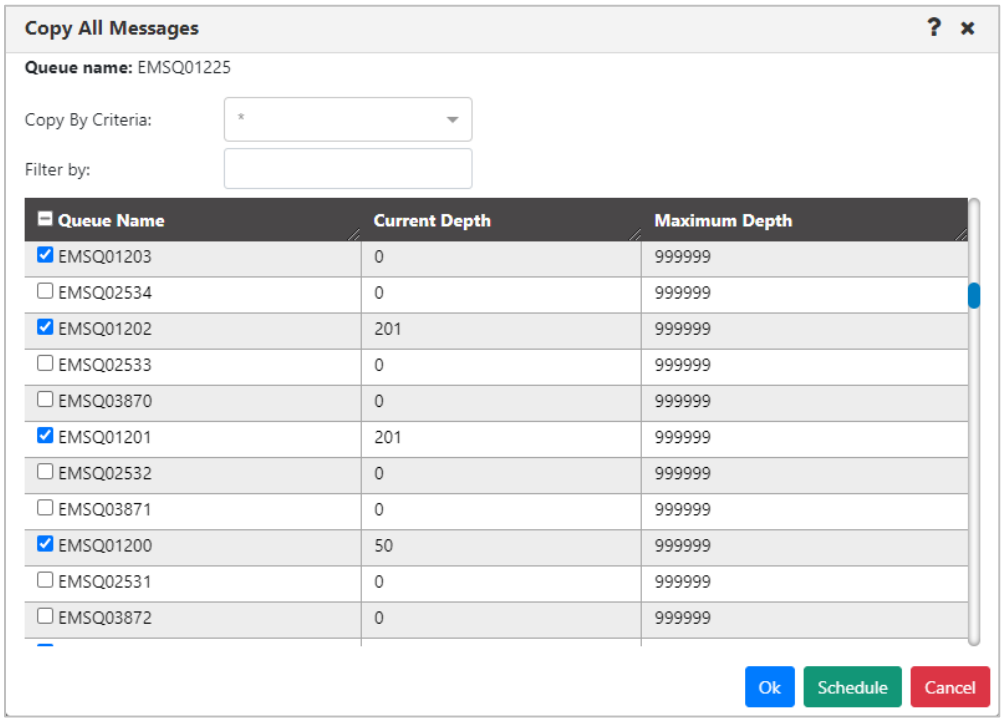


Figure 4.3.4.3.3-D. Copy All Messages

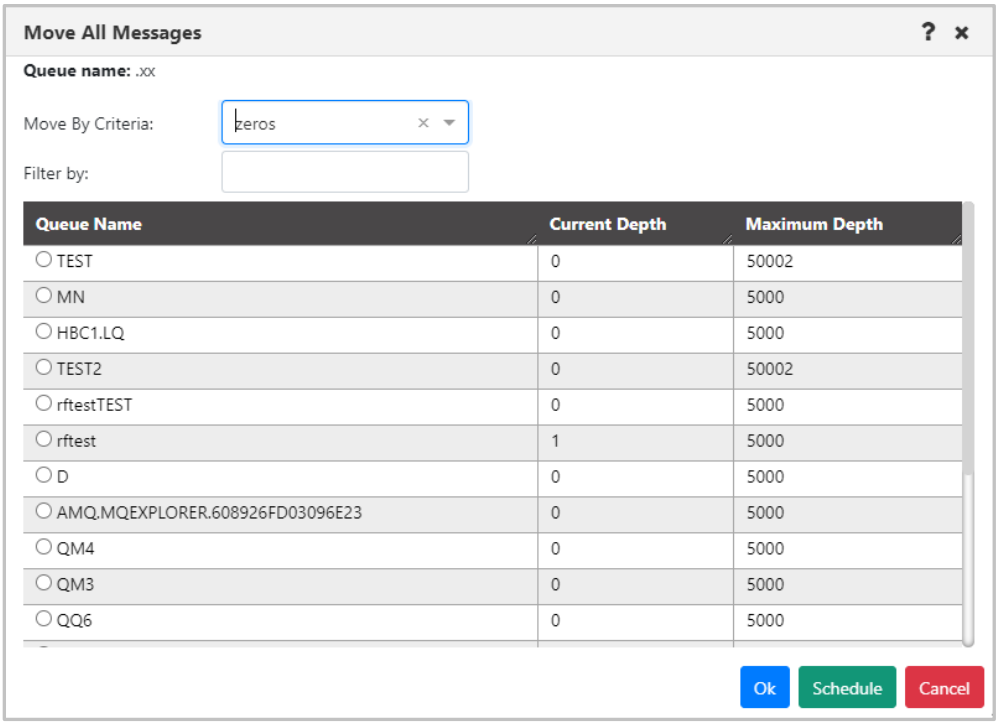


Figure 4.3.4.3.3-E. Move All Messages

4.3.4.3.4 Edit

The *Edit message* window is displayed when **Edit** is selected from the message's pop-up menu (*Figure 4.3.4.3-I*) or by clicking the **Edit** icon on the *Messages* viewlet (*Figure 4.3.4.3-A*). It is used to edit message information and data. For more information about edit options, please see *Put New* (*Section 4.3.4.3.1*).

Please note that EMS and alias queue messages cannot be edited.

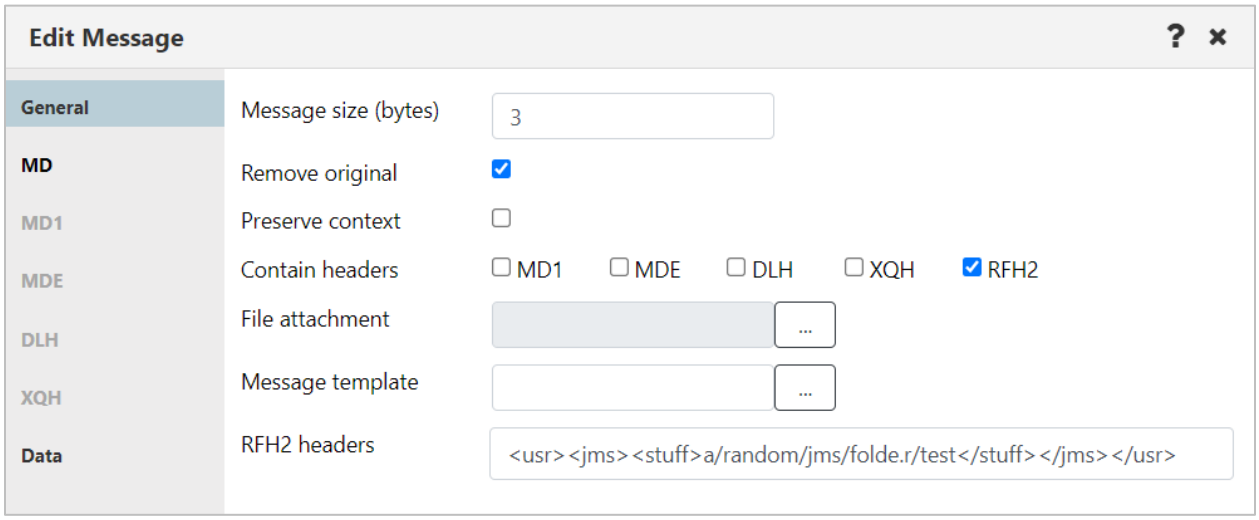


Figure 4.3.4.3.4-A. Edit Message

Table 4.3.4.3.4-A. Edit Message		
Control	**Description**	**States and Conditions**
Message size (bytes)	Displays size of message without headers.	Always enabled.
Remove original	If checked, removes all original message headers when submitted.	
Preserve context	If checked, preserves message context.	
Contains headers	Selects which header(s) will be available in the message.	
MD button	Displays *Message Descriptor Properties* window where user can view/edit MD header of message *(Figure 4.3.4.3.1-C)*.	Enabled only if MD1 checkbox is *not* selected.
MD1 button	Displays *Message Descriptor Properties* window where user can view/edit MD1 header of message *(Figure 4.3.4.3.1-C)*.	Enabled only if MD1 checkbox is selected.
MDE button	Displays *Message Descriptor Extension* window where user can edit MDE header of message *(Figure 4.3.4.3.1-H)*.	Enabled only if MDE checkbox is selected.
DLH button	Displays *Dead Letter Queue Header* window where user can view/edit DLH header of message *(Figure 4.3.4.3.1-I)*.	Enabled only if DLH checkbox is selected.
XQH button	Displays *Transmission Queue Header* window where user can view/edit XQH header of message *(Figure 4.3.4.3.1-J)*.	Enabled only if XQH checkbox is selected.
File attachment	Input file name to attach to this message.	Always enabled.
Message template	(Available in future release)	
RFH2 headers	Edit raw RFH2 or JMS header data.	Enabled only if RFH2 checkbox is selected. (Also allows you to edit messages that were created using the JMS checkbox.)
Data button	Displays *Message Data* window where user can view/edit message data (*Figure 4.3.4.3.4-B*).	Always enabled.

The *Message Text Data* window is displayed when the **Data** button is clicked on the *Edit Message* window (*Figure 4.3.4.3.4-A*). It is used to view/edit the message data. **Text only** is the default option for displaying message text data.

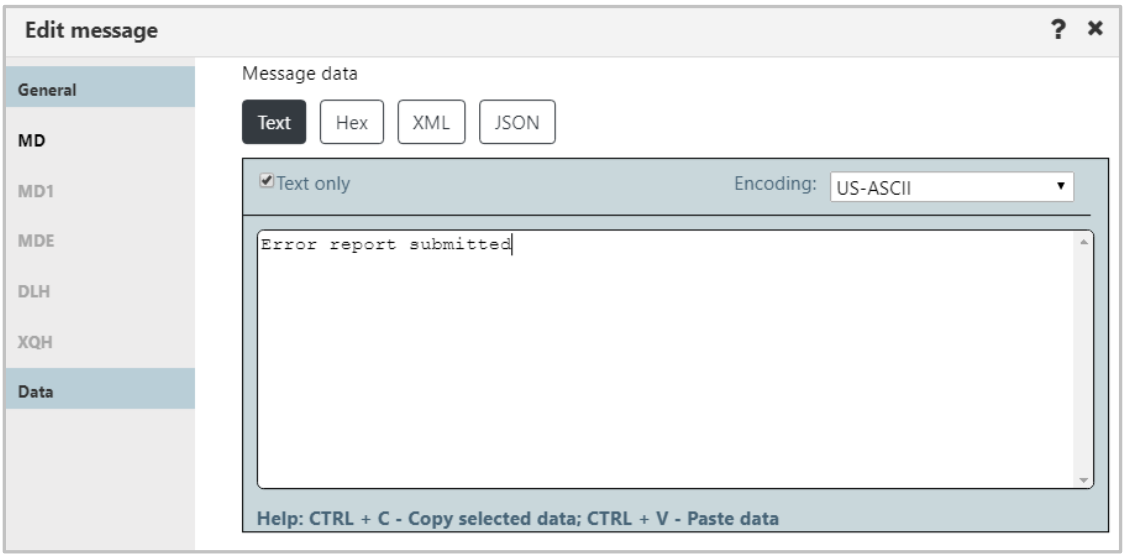


Figure 4.3.4.3.4-B. Message Text Data

4.3.4.3.5 Load Messages from a File or Shared Storage

You can choose to load messages from one of several sources. The load procedure will vary depending on the source you choose.

4.3.4.3.5.1 Messages from .mmf files, .txt files, or files created by the IBM dmpmqmsg utility

Load single or multiple messages from .mmf files, .txt files, or files created by the IBM dmpmqmsg utility. Select **Load from File** from the *Messages* viewlet (*Figure 4.3.4.3-A*) or **Load from File** from the Queue Viewlet Messages menu options (*Figure 4.3.4-A*). The *Command settings* dialog box for loading messages is displayed. Make file format and encoding selections before proceeding.

Choose the file format you're loading from. Choices are as follows:

- **Text/binary.** Choose this option for plain text format.
- **MMF.** The MMF option is meshIQ's Message Management File format. Please be aware that when this file type is selected, extra data, such as headers, will be saved.
- **Dmpmqmsg.** This option indicates a character-encoded binary file that was produced by the IBM dmpmqmsg utility, which saves messages from a queue into a file.

Use the list on the right to choose between US-ASCII and IBM EBCDIC International encoding. The encoding method in the list will be reflected in the Message Headers Data. If you select the Force Encoding checkbox, not only the message headers, but the message encoding type (in the Encoding list) and message data itself will also reflect your selection.

Click **Yes** to load a file.

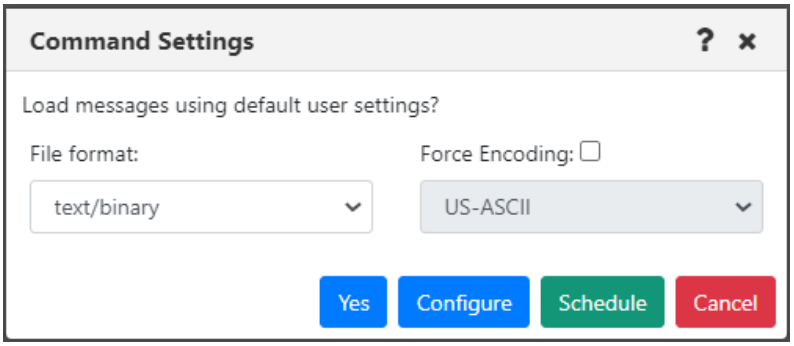


Figure 4.3.4.3.5-A. Load from File Command Settings

Clicking **Configure** will open the *Load Message* settings window (section *4.4.4.1.3*), where you can specify settings for the new messages, such as the delimiter used.

If a file is loaded containing more messages than the queue's maximum depth, an error message similar to the following will be displayed:

Figure 4.3.4.3.5-B. Max Depth Load Error

4.3.4.3.5.2 Load messages from Shared Storage

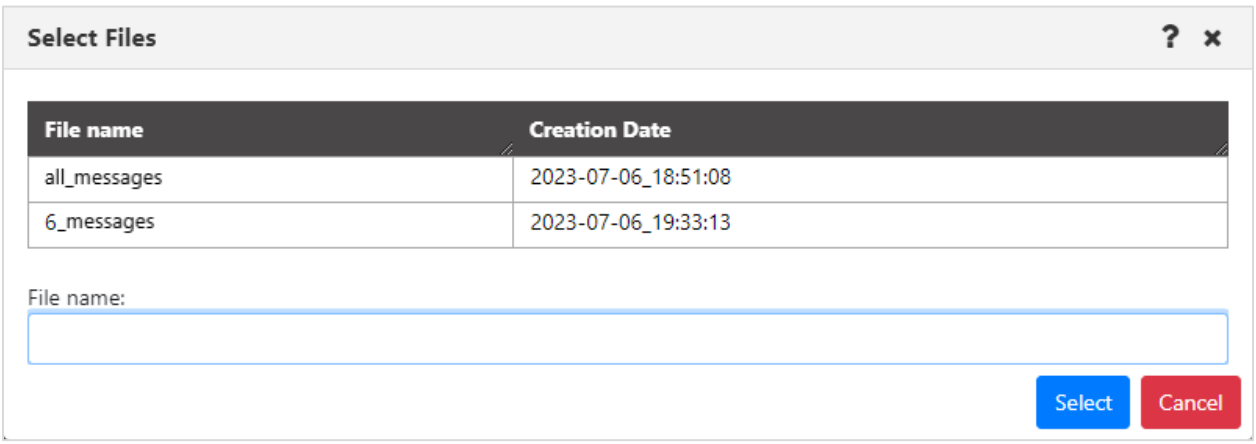
NOTE

The ability to save or export files to shared storage requires that you enter a valid path in the Enterprise Manager MQM Properties dialog's MMF Shared Storage tab, in the Directory to be used for MMF Shared Storage field. This option is for IBM MQ messages only.

Choose one of two methods for loading messages from storage:

- Select the queue into which you want to load messages. On the action menu, select **Messages > Load from Shared Storage**.
- While browsing messages, select the Load from button, then select **Load from Shared Storage**.

The Select Files dialog includes all message files. Choose a file by clicking it.



4.3.4.3.6 Export All Messages

NOTE

The ability to save or export files to shared storage requires that you enter a valid path in the Enterprise Manager MQM Properties dialog's MMF Shared Storage tab, in the Directory to be used for MMF Shared Storage field. This option is for IBM MQ messages only.

To export all of a queue's messages, select **Messages > Export All Messages** > **.MMF**, **.TXT**, or **To Shared Storage** from the queue's action menu options (*Figure 4.3.4-A*).

If you chose **.MMF** or **.TXT**, the *Command settings* dialog box for exporting messages appears. Click **Yes** to export the messages. Clicking **Configure** will open the *Save Messages* settings window. See *Save Messages* (*section 4.4.4.1.4*) for more information.

If you chose **To Shared Storage**, the Write File Name dialog opens. Enter a file name. Click **OK**.

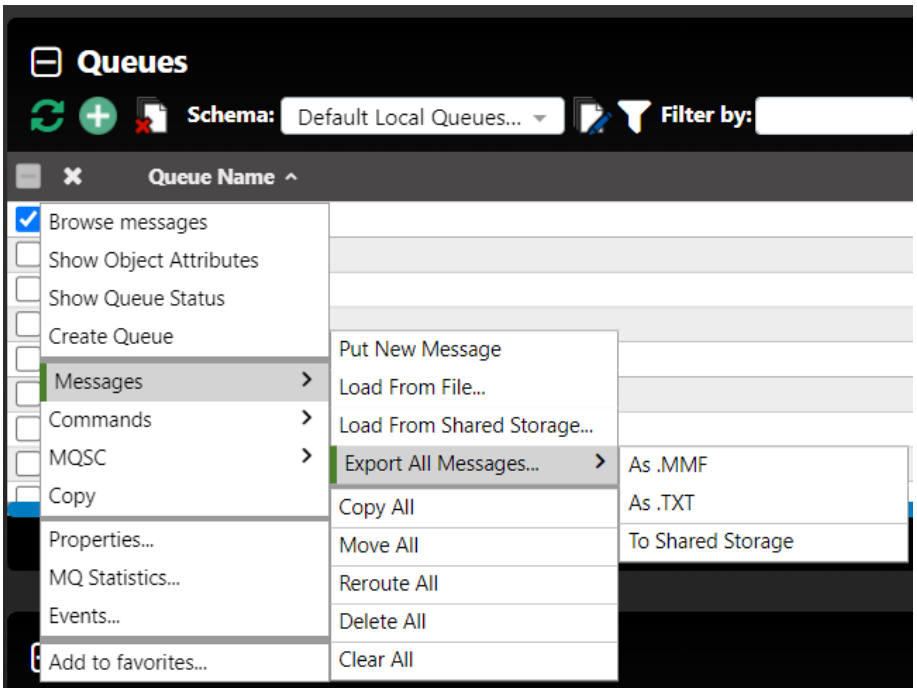


Figure 4.3.4.3.6-A. Export All Messages

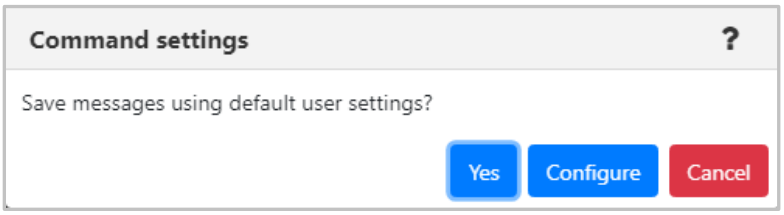


Figure 4.3.4.3.6-B. Export all Messages Command settings

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Figure 4.3.4.3.6-B. Write File Name Dialog (Shared Storage)

4.3.4.3.7 Message Rerouting

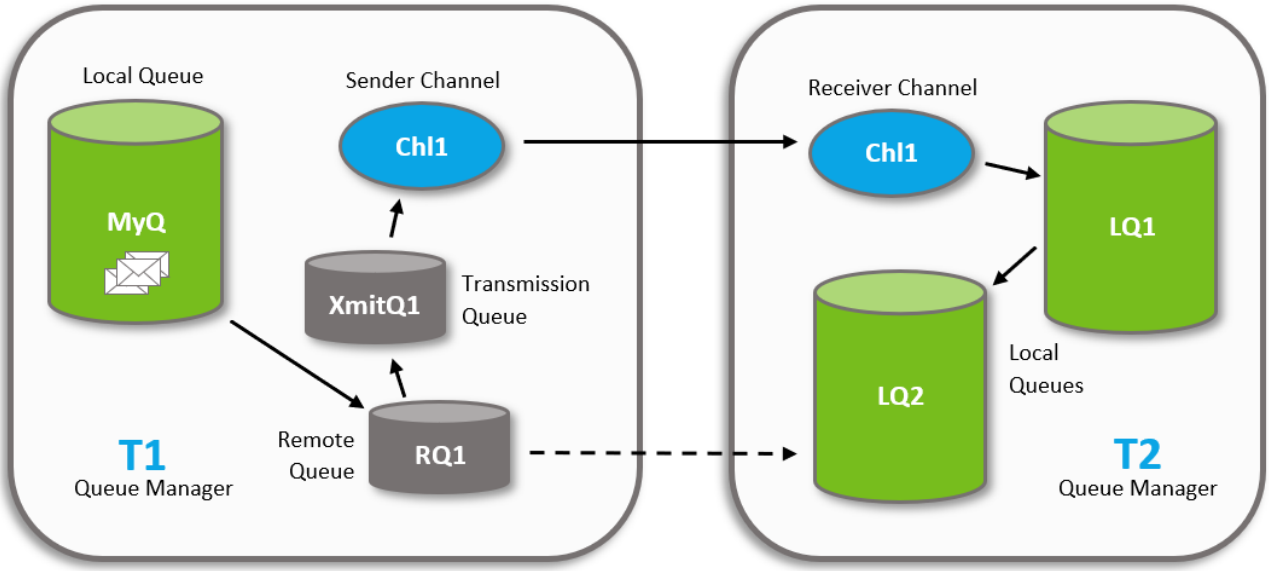

Figure 4.3.4.3.7-A. Message Rerouting Process

The reroute feature transmits messages from one queue manager to another, for example, sending messages from queue manager T1 to a local queue (LQ2) on remote queue manager T2. This feature works by dynamically altering definitions to enable the messages to be transmitted.

4.3.4.3.7.1 Rerouting Requirements

Rerouting messages requires the following:

1. **Channels:** Create a sender and receiver channel on each of the queue managers. This feature works by dynamically altering the definitions to enable the messages to be transmitted. The channels are one directional and must have the same name, for example:
   Sender Channel (on T1): Chl1
   Receiver Channel (on T2): Chl1
2. **Transmission Queue:** Create a transmission queue on the sending queue manager (T1), for example:
   Transmission Queue: XmitQ1

3. **Remote Queue:** Create a remote queue on the sending queue manager (T1). It will need to point to the local queue (LQ2) receiving the messages (located on the receiving queue manager T2). For example:
   Remote Queue: RQ1
4. **User Rights:** Users who will be rerouting messages need security rights to make definition changes to the objects listed above. These objects will need to be defined with special security rules, allowing them to be altered by users with the reroute rights.

   The Reroute button in the console panel is only active for users with the Reroute Messages right (even though all users with the Show Queue Manager Attributes right can see it).

   The set of rights required to perform the reroute messages action itself depends on the version you are using:

   - Prior to version 10.4, the following rights were required: **Change Channel**, **Change Queue**, **Move Messages**, **Start Channel**, **Stop Channel**, and **Refresh Queue** Runtime.
   - In versions 10.4.0 and later, in addition to the **Reroute Messages** right that makes the button available, you must also have the **Move Messages** right for both the queue you are moving the message from and the queue you are moving the message to. Moreover, if you are rerouting messages from one queue manager to another and channels are used, you must also have the **Start Channel**, **Stop Channel**, and **Change Channel** rights.

4.3.4.3.7.2 The Rerouting Process

Using the diagram above, the meshIQ components dynamically update the object definitions to reroute messages from MYQ on queue manager T1 to local queue LQ2 on queue manager T2 as follows:

1) Alter the remote queue (RQ1) on T1 to:
   a. Point to the target local queue (LQ2) on T2.
   b. Use T1's transmission queue (XmitQ1).
2) Alter the sending channel (Chl1) on T1 to:
   a. To point at the connection for T2.
   b. To use the transmission queue (XmitQ1).
3) Start the sending channel (Chl1).
4) Move the messages from MYQ to RQ1 on T1. This causes them to be placed on the transmission queue, picked up by the channel, transmitted to T2 and placed on LQ2.

Second Example: To move messages from MYQ to LQ1, the process is the same except RQ1 will need to point to LQ1 instead of LQ2. All other steps are the same and the same objects are used, pointing at LQ2 instead of LQ1.

Third Example: To move messages from MYQ to LQ1 on T3, the process is the same except the channel will be directed at T3 instead of T2. T3 needs a receiving channel Chl1 as well.

4.3.4.3.7.3 Reroute Configuration

> NOTE
> If you have chosen to select messages by **Message Position** (on the **Message Commands** tab of the *User/Global Settings Window*), the reroute icon will not be available when multiple individual messages are selected.

Perform the following to reroute messages:

1. Open the messages to be rerouted in the Console panel. See Messages (section *4.3.4.3*) for information on viewing a queue's messages). Select the message(s) to be rerouted and click the **Reroute** button from the Message Viewlet toolbar (see *Figure 4.3.4.3-A*). The *Reroute Messages* window opens.

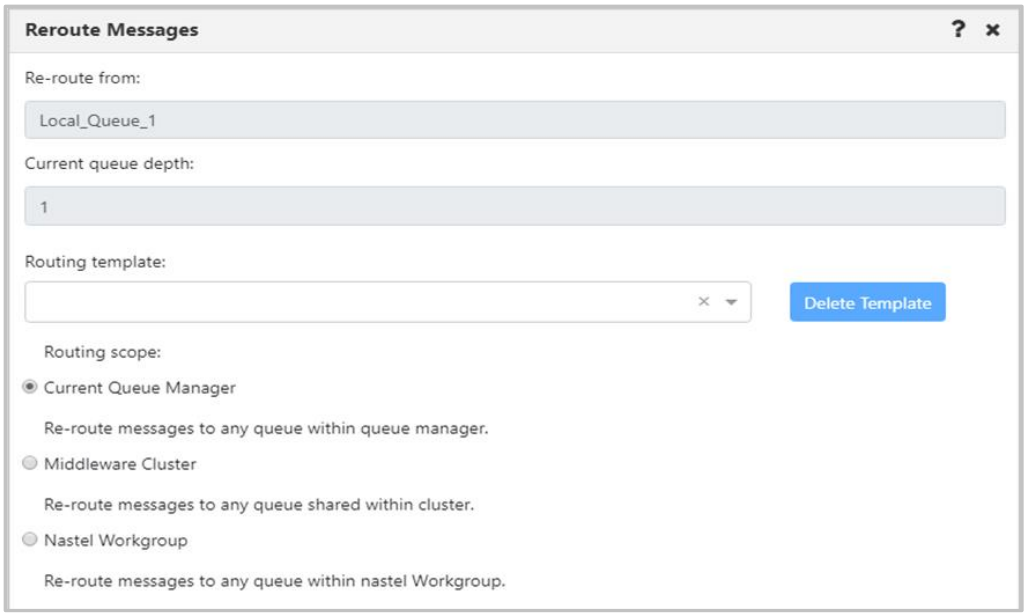

Figure 4.3.4.3.7.3-A. Reroute Messages – Routing Scope

2. The **Re-route from** and **Current queue depth** fields display the name of the messages' queue and the queue's depth. Please note that these fields are always inactive.
3. Select a **Routing template** from the drop-down list. To create a new template instead, enter a template name in the **Routing template** field and press the **Enter** key on your keyboard. To delete a template, select it and click the **Delete Template** button.
4. Select a **Routing Scope** (a description of each option appears immediately below the option name). It will be used when there is a need to reroute messages into a location not defined in message headers.

5. Click **Next** to continue configuring the reroute properties. The *Reroute Messages* window opens. Select a **Routing destination** option and click **Next.**

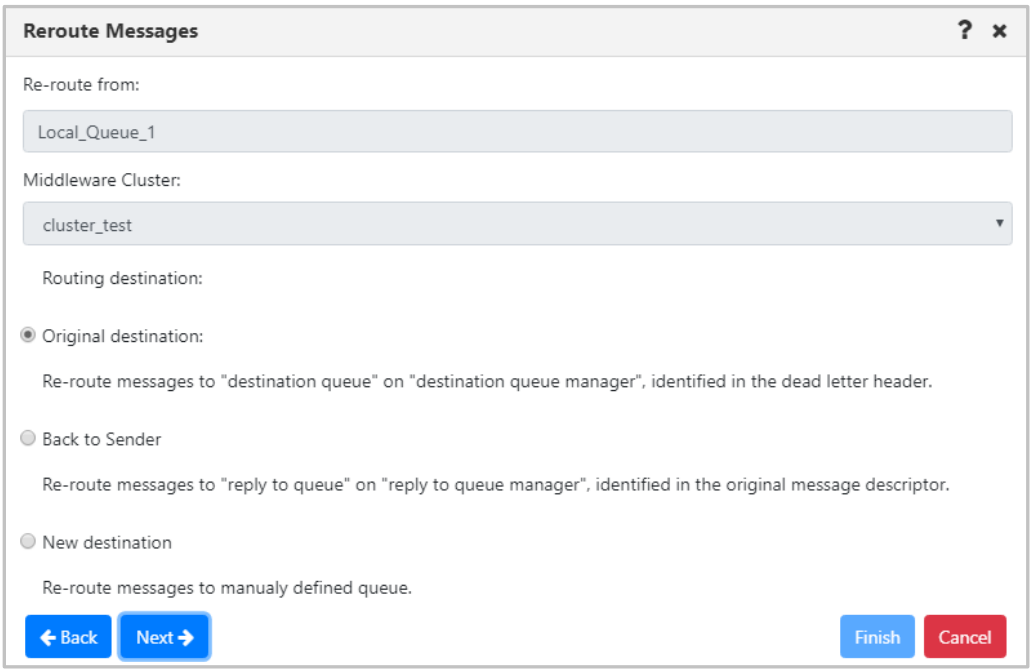

Figure 4.3.4.3.7.3-B. Reroute Messages – Routing Destination

6. If either **Original destination** or **Back to Sender** were selected for the **Routing destination**, the following window will open. By default, both transmission-queue (XQH) and dead-letter (DLH) headers are stripped from messages during rerouting

(based on the Strip message headers STRIP ALL selection). But you can choose to strip only XQH headers (STRIP XQH), only DLH headers (STRIP DLH), or neither (LEAVE ALL).

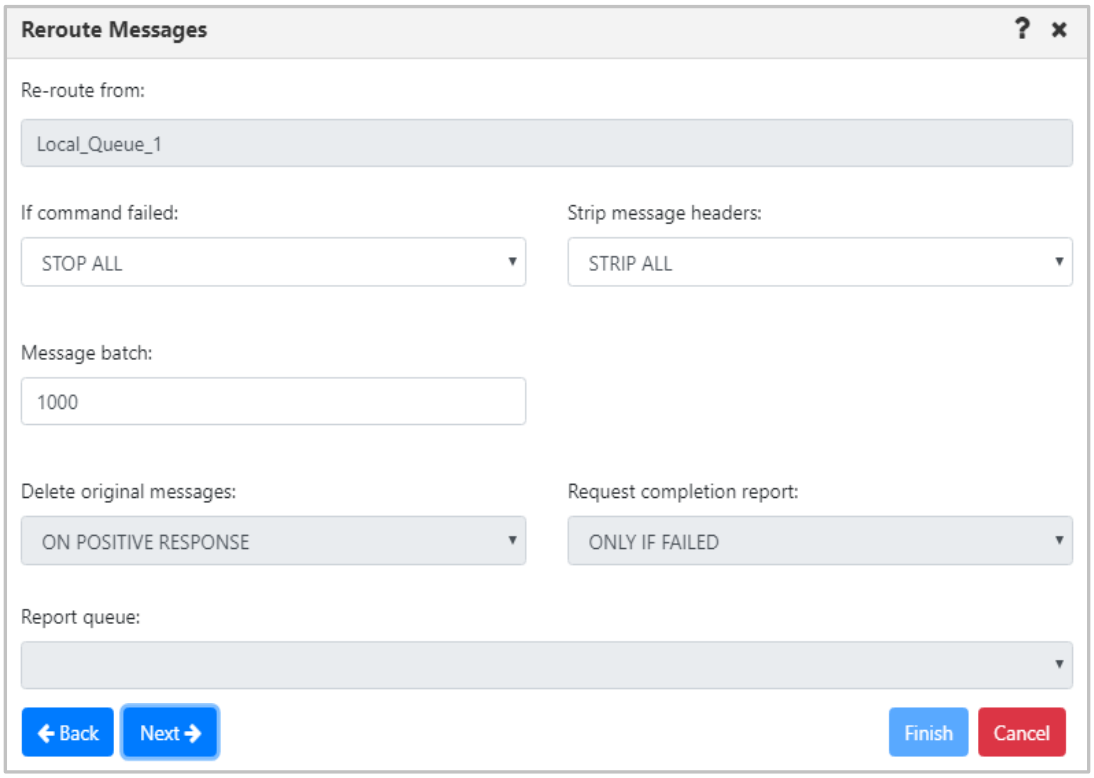

Figure 4.3.4.3.7.3-C. Reroute Messages – Additional Options

7. Click **Next**.
8. A summary of the reroute plan for the selected messages displays. If everything is correct, click **Finish**.

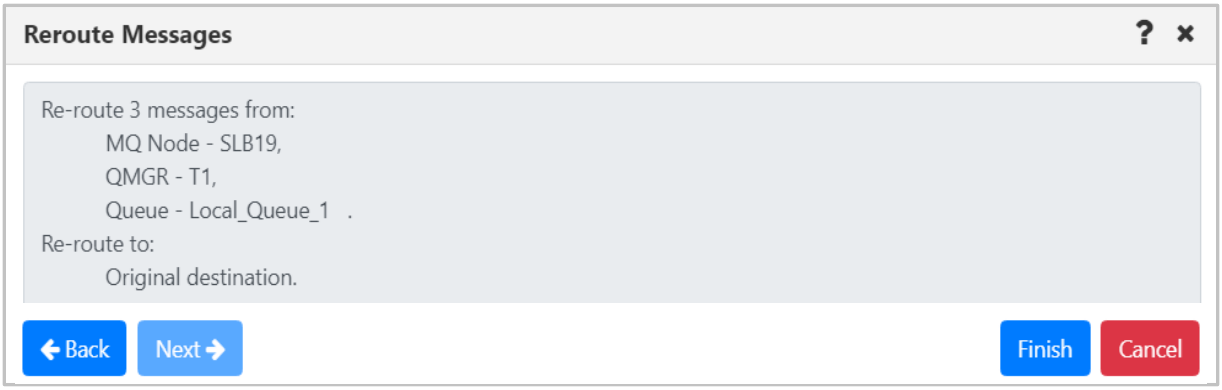

Figure 4.3.4.3.7.3-D. Reroute Messages – Summary

9. If **New destination** was selected for the **Routing destination** (*Figure 4.3.4.3.7.3-B above*, this option is used to re-route messages from one queue to another, which belong to different queue managers), a window similar to the below will open. Select a **Destination Queue name** from the drop-down list.

10. Click **Next** for additional options (*Figure 4.3.4.3.7.3-C* above). Specify the properties and click **Next** to view the reroute summary.

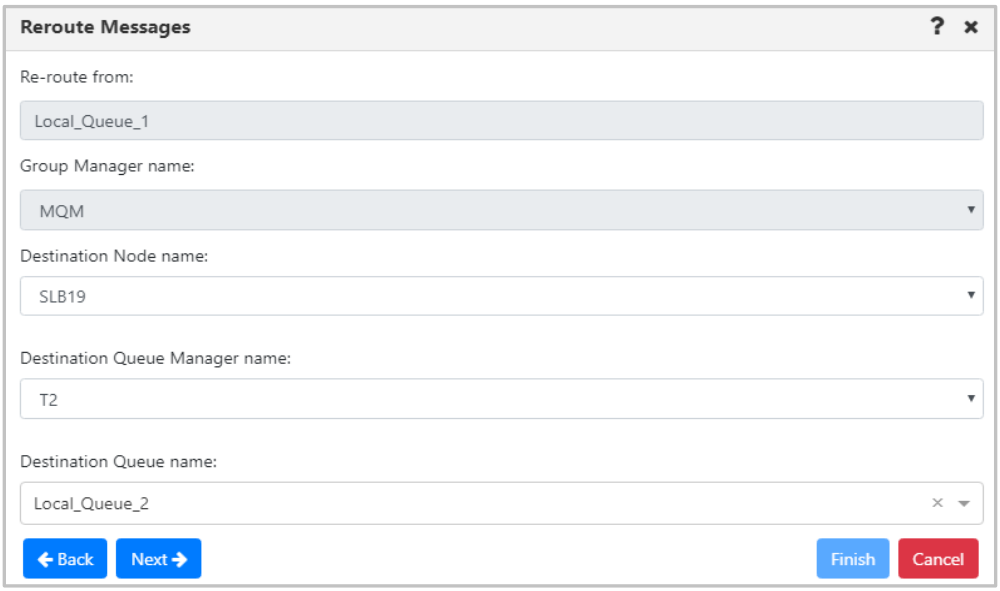

Figure 4.3.4.3.7.3-E. Reroute Messages – Set Destination

4.3.4.3.8 Retrieving Messages from an Inoperable Cluster Queue

Within a *cluster*, you can move messages from a put-inhibited queue on one queue manager to another queue of the same name on another queue manager. This functionality is only for put-inhibited queues that are shared within a cluster.

Prerequisites

- Both queue managers have joined the same cluster.
- The two queues (one on each queue manager) have the same name.
- On the properties of the two queues, the Cluster tab must indicate *Shared in a cluster.*
- The queue you are moving messages from must be "Put Inhibited" and the other must be "Put Allowed."

To see this functionality, verify that all criteria listed in the prerequisites section have been met. Then:

1. Select the checkbox for the put-inhibited queue and make sure that the **Messages** submenu includes the **Distribute to Cluster** item. This option indicates that messages put to this queue can be moved to another queue of the same name on a different queue manager. (See Figure 4.3.4.3.8-A.)
2. Click **Distribute to Cluster**.
3. A list of potential destinations is displayed, along with a confirmation message. See Figure 4.3.4.3.8-B.

4. Click **Continue**. If messages have been moved successfully, a Success message is displayed in the lower right corner of the window.
5. Wait for the queues to be moved and for the viewlet data to be refreshed, or refresh the viewlet manually. The messages will be included on the second (Put Allowed) queue. See Figure 4.3.4.3.8-C.

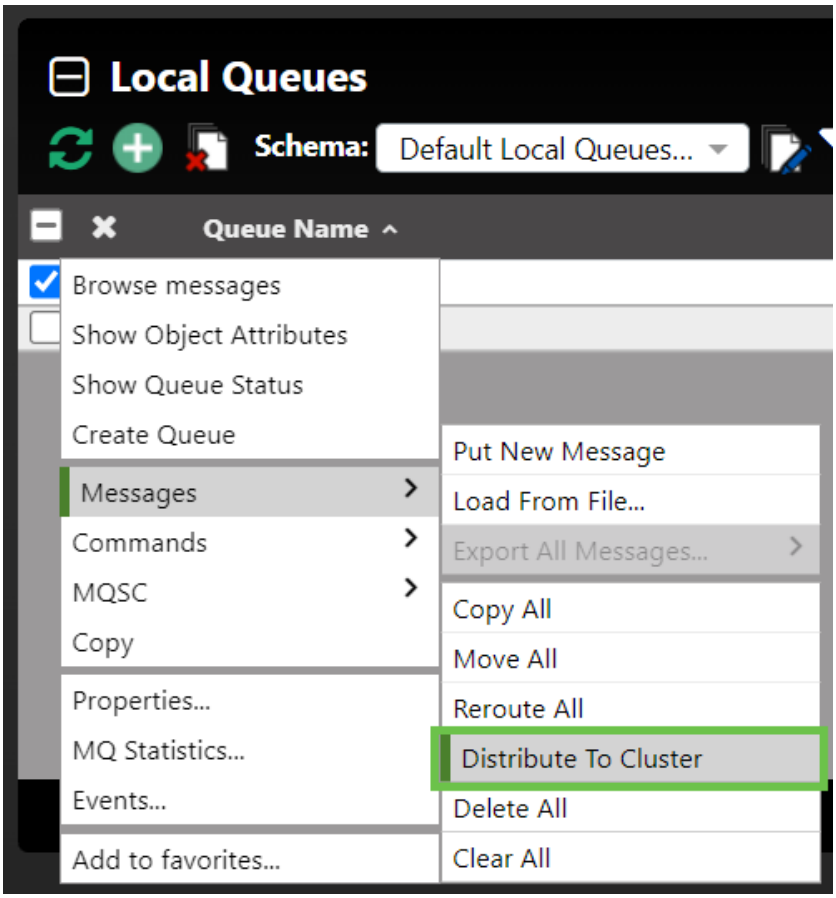

Figure 4.3.4.3.8-A. Distribute to Cluster Menu

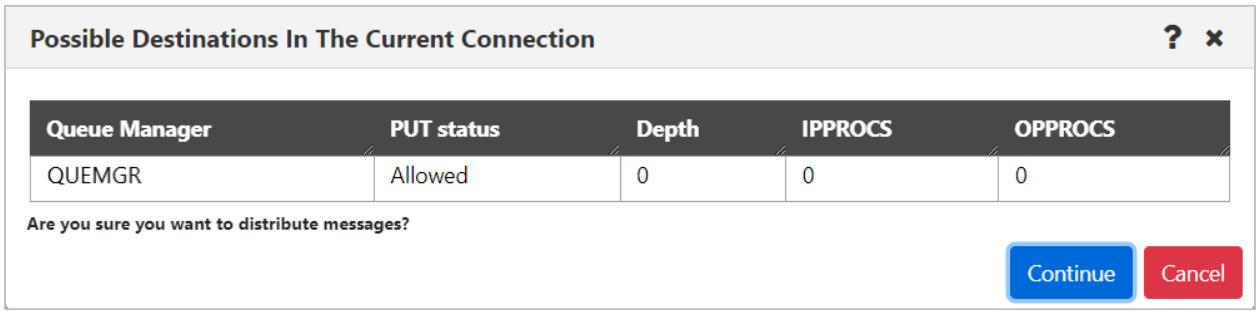

Figure 4.3.4.3.8-B. Possible Destinations

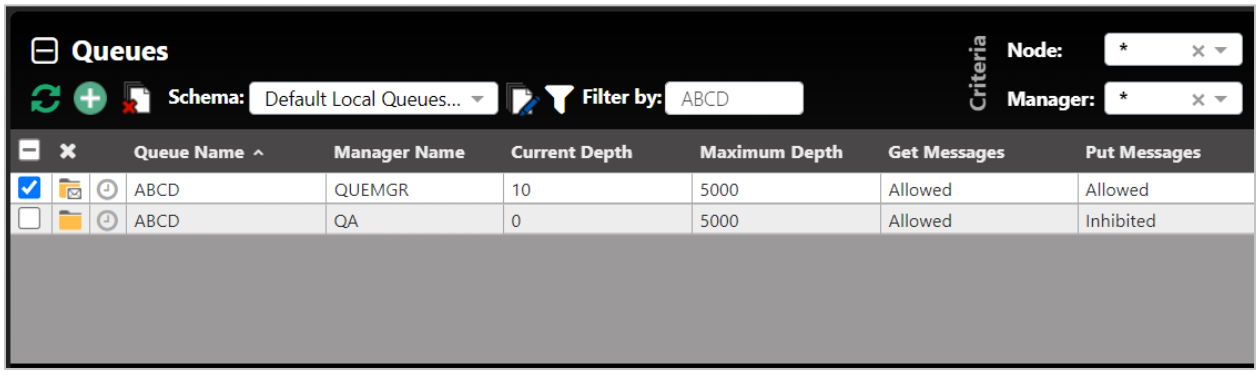

Figure 4.3.4.3.8-C. Messages Moved Successfully

4.3.4.4 Commands

The Commands submenu is accessed from the queue's pop-up menu. **Copy As**, **Delete Queue** and **Force Update** are the options available.

Copy As

The **Copy As** option creates a new object based on the definition of the currently selected object. When clicked from the queue's **Commands** menu options (*Figure 4.3.4-A*), the *Copy viewlet object* dialog box opens.

1. Enter a name and description
2. Click **Ok** to copy an object.

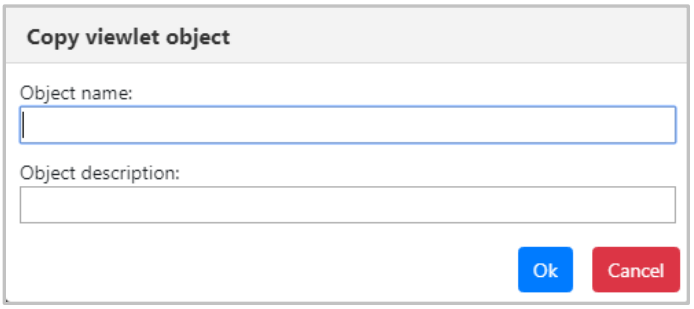

Figure 4.3.4.4-A. Copy Viewlet Object

Delete Queue

The **Delete Queue** option allows users to delete the queue. When selected from the queue's **Commands** menu options (*Figure 4.3.4-A*), the below dialog box appears.

Please note that there are no delete options for EMS queues. All EMS queues and their messages will be deleted.

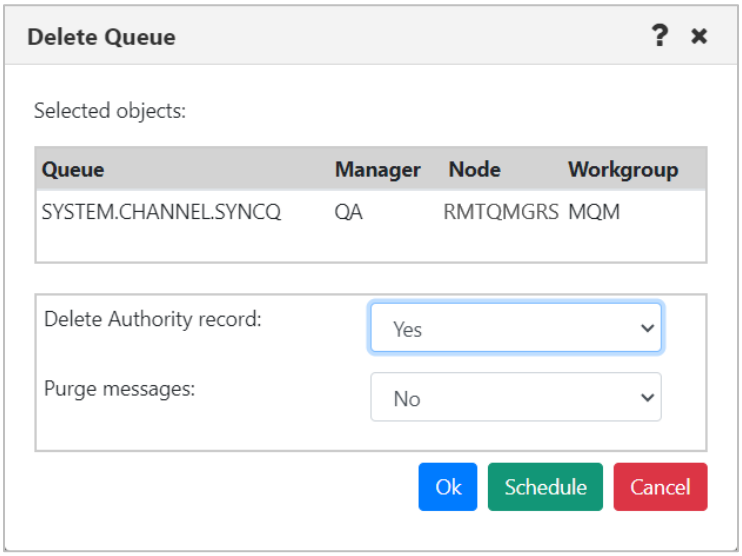

Figure 4.3.4.4-B. Delete Queue

Specify if you would like the authority record deleted. When a queue contains messages, select **Yes** from the **Purge messages** option to delete both the queue and the messages it contains. If the queue contains messages and **No** is selected, an error notification similar to the below screenshot will appear. The **Description** button can be clicked for more details.

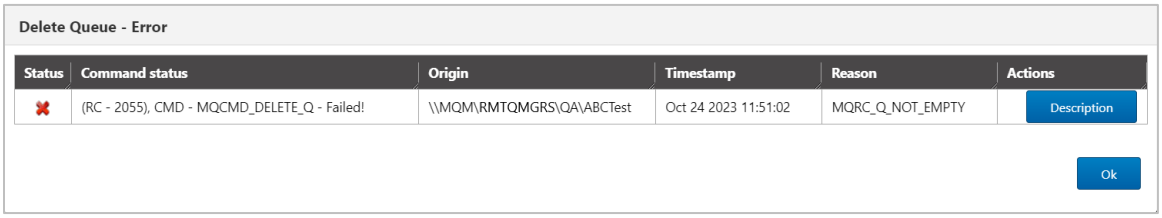

Figure 4.3.4.4-C. Delete Queue – Error

Force Update

The data in the WGS is cached and only periodically updated. Selecting the **Force Update** option will trigger the WGS to retrieve the most recent copy of the data. Select no more than 20 items to minimize impact on the WGS.

Allow or Inhibit Get and Put Messages

The ability to change the Get Messages and Put Messages attributes for a queue using the object menu requires the **Change Queue Extended** right in the security application.

The menu actions that are available depend on the queue type.

Queue Type:	Available Actions:
Local Queues and Alias Queues	Inhibit/Allow Get and Put
Remote Queue	Inhibit/Allow Put If Get is *Inhibited*, you cannot browse the queue. If Put is *Inhibited*, you cannot perform message-related operations.
Model Queues	Allow Get or Put There is no option to inhibit Put or Get from the Commands menu; instead, this can be done from properties.

The Get and Put Messages columns indicate the current state, or mode, of each queue when it comes to get and put message operations:

- If Get Messages is *Allowed* for a queue, then messages are allowed to be gotten from the queue. If Get Messages is *Inhibited*, then messages are prevented from being gotten from the queue.
- If Put Messages is Allowed for a queue, then messages are allowed to be put on the queue. If Put Messages is Inhibited, then messages are prevented from being put on the queue.

You can change these attributes for a single queue or multiple queues.

When you select a single queue, options shown are to change the current mode: for a queue with Get Messages *Allowed*, the menu option is **Inhibit Get**. For a queue with Get Messages *Inhibited*, the menu option is **Allow Get**.

When you select more than one queue, options shown are based on the current mode of the first queue that you select. The action applies to all selected queues.

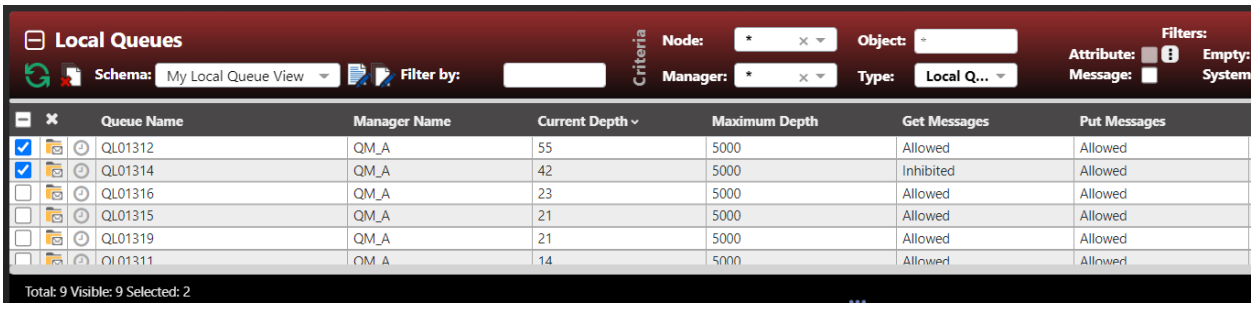

Figure 4.3.4.4-D Message Queue Before Inhibit Put

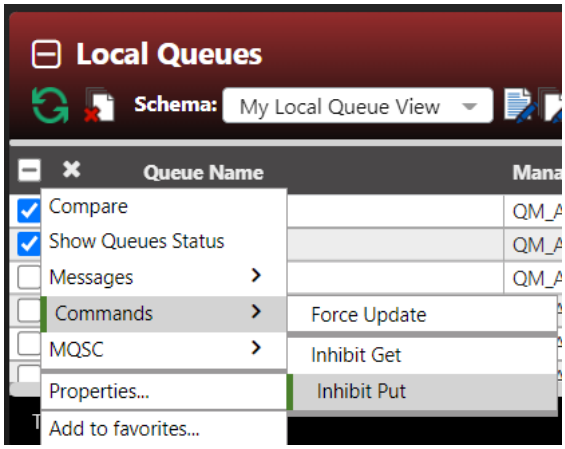

Figure 4.3.4.4-E Inhibit Put Command

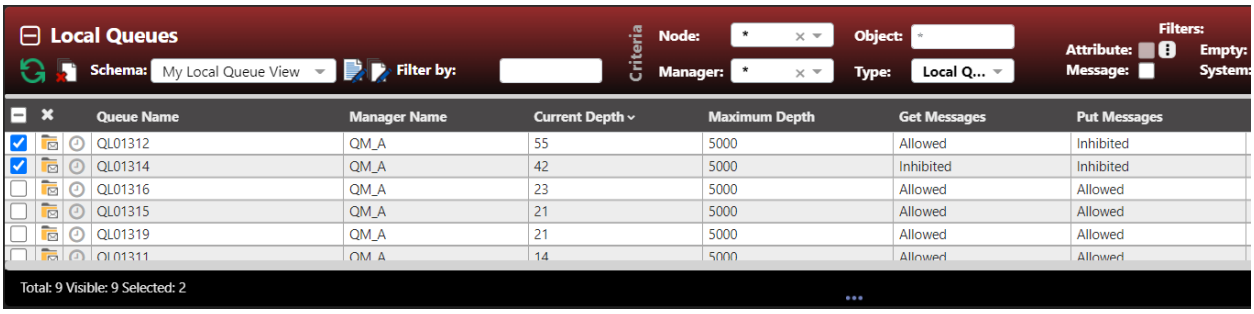

Figure 4.3.4.4-F Inhibit Put Results

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4.3.5 Channels

A channel viewlet displays all related information to channels. The icons represent the status of the channels:

- Active Channel:
- Inactive Channel:
- Changing State:
- Stopped Channel:

A pop-up menu appears when a channel's check box is checked. See *Appendix C* for an explanation of these options. Clicking on a channel name will open the *Attribute* viewlet (*section 4.3.5.1*). Clicking on a channel status will open the **<*channel_name*> Status** viewlet (*section 4.3.5.2)*.

NOTE

Your pop-up menu options may differ according to your user permissions, which are managed by an admin.

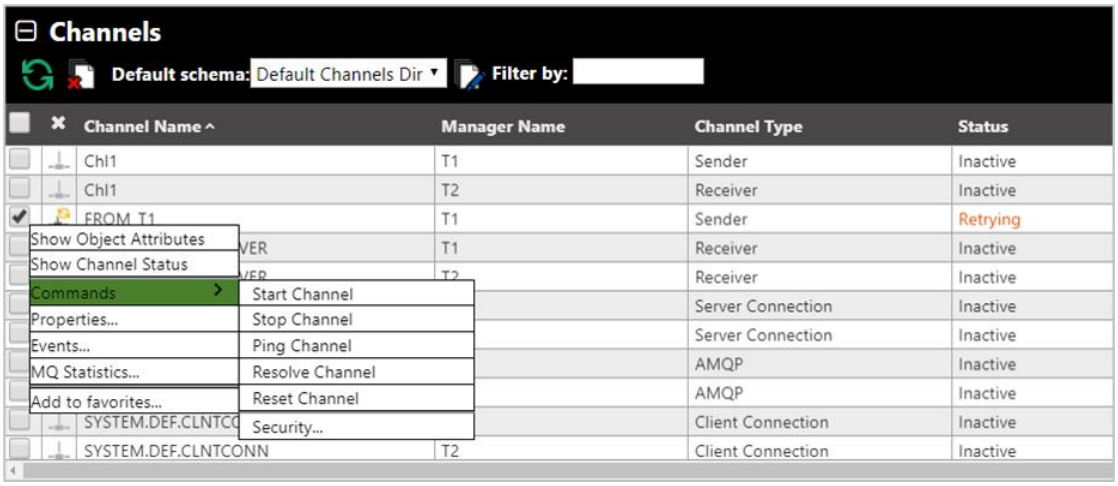


Figure 4.3.5-A. Channel Pop-up Menu

TIP

If your *Channel* viewlet is empty, check if the **Show inactive channels** option is selected in the **User Settings** window **>** ***User Settings*** tab **(***see User Settings Tab***).**

4.3.5.1 Channel Attributes

Selecting **Show Object Attributes** from the channel's pop-up menu (*Figure 4.3.5-A*) will display the channel's *Attributes* viewlet.

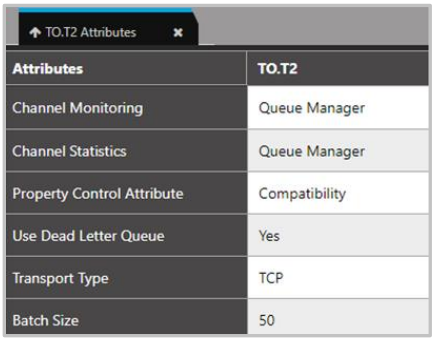


Figure 4.3.5.1-A. Channel Attributes

4.3.5.2 Channel Status

Selecting **Show Channel Status** from the channel's pop-up menu (*Figure 4.3.5-A*) or clicking the channel status within the **Status** column of the viewlet will display the *Status* viewlet of the channel. The following statuses are signified with specific colors: running (green), retrying (orange) and stopped (red).

The columns displayed in this viewlet can be customized by clicking the **Table** icon .

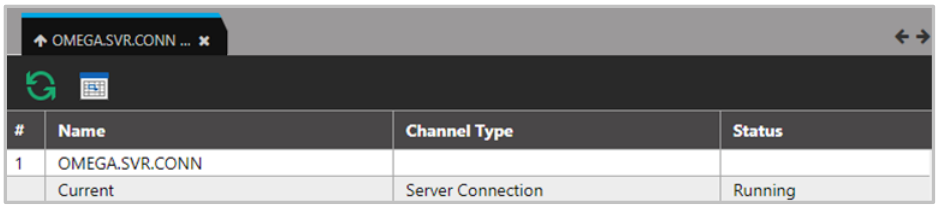


Figure 4.3.5.2-A. Channel Status

Table 4.3.5.2-A. Channel Status

Status	Description
Inactive	Channel is not active.
Binding	Channel is negotiating with the partner.
Starting	Channel is waiting to become active.
Running	Channel is transferring or waiting for messages.
Stopping	Channel is in process of stopping.
Retrying	Channel is reattempting to establish connection.
Stopped	Channel is stopped.
Requesting	Requester channel is requesting connection.

Table 4.3.5.2-A. Channel Status	
Status	**Description**
Paused	Channel is paused.
Disconnected	Channel is disconnected.
Initializing	Channel is initializing.
Switching	Channel is switching transmission queues.

4.3.5.3 Channel Commands

The **Commands** submenu accessed from the channel's action menu (*Figure 4.3.5-A*) gives the option to start, stop, ping, resolve or reset channels. These options can differ depending on the channel type.

Start Channel

After selecting **Start Channel**, the *Start Channel* window opens. Within the **Channel Disposition** section, you can specify to include **Private**, **Shared** or **Shared-Linked** channel dispositions. Check the box and select the desired option from the drop-down menu. You can also specify the **Command scope** if needed. For more information on these options, please see the IBM online documentation: *https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.ref.adm.doc/q088420_.htm*

Click **Ok** to start the channel, or click **Schedule** to create a task to start the channel at a specified time (see Scheduling). The **Schedule** button will not appear if your WGS is not configured for scheduling.

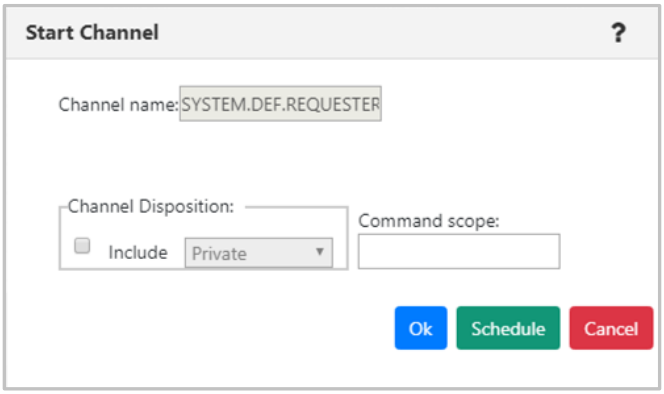


Figure 4.3.5.3-A. *Start Channel Dialog Window*

After selecting **Start Channel** the status will appear as **Initializing** or **Retrying** with the changing state icon .

Stop Channel

After selecting **Stop Channel**, the *Stop Channel* dialog box appears. The stop options are selected on this screen.

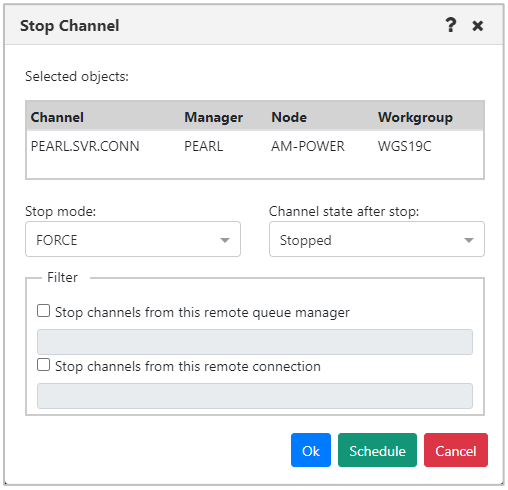


Figure 4.3.5.3-B. Stop Channel

When you stop a specific channel instance, the two checkboxes (Stop channels from this remote queue manager and Stop channels from this remote connection) are selected, and the queue manager and remote connection are filled in if they exist, since they are necessary to identify the particular channel instance.

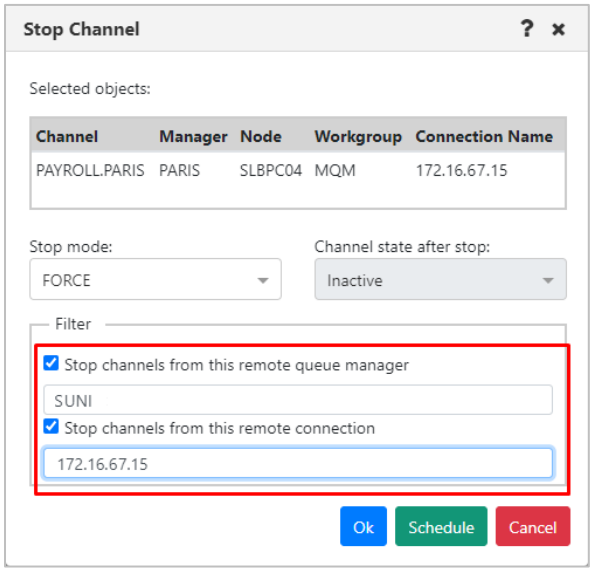


Figure 4.3.5.3-C. Stop Channel (with Remote Queue Manager and Connection)

Ping Channel

After selecting **Ping Channel**, the *Ping Channel* dialog box appears.

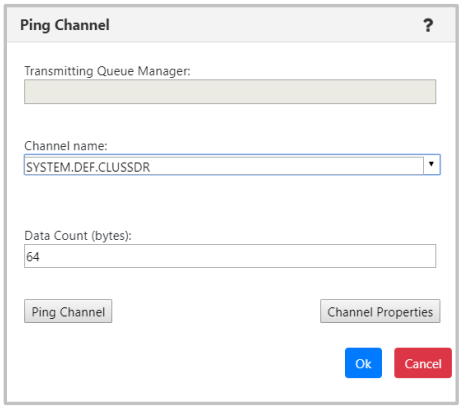


Figure 4.3.5.3-C. Ping Channel

Resolve Channel

After selecting **Resolve Channel** (only Sender or Cluster Sender channels have this option available in their *Commands* menu), the *Resolve Channel* dialog window appears. Use this option when the link fails during the confirmation period and the connection cannot be reestablished.

The following buttons appear at the bottom of the dialog window. The **Commit** and **Backout** buttons are only available when the channel is in INDOUBT state. This means that the channel's sending end does not know if messages were received.

- **Commit**: The in-doubt messages will be deleted from the transmission queue.
- **Backout:** The in-doubt messages are returned to the transmission queue.
- **Channel Properties**: Update the channel's properties. See *section* 4.3.5.4, Channel Properties, for more information.

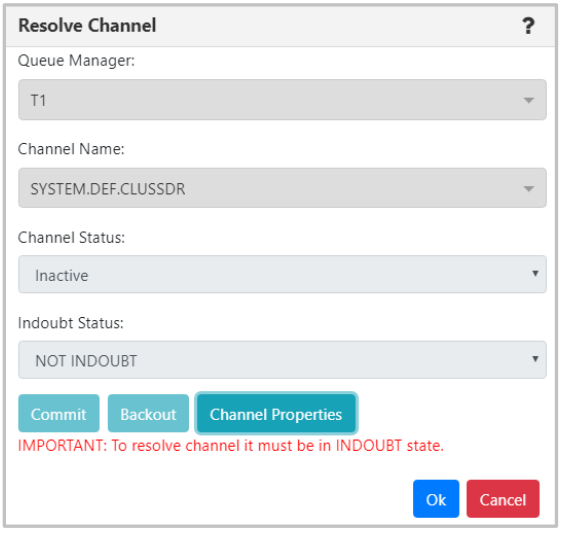


Figure 4.3.5.3-D. Resolve Channel

Click **Ok** when finished.

Reset Channel

Select **Reset Channel** to reset the message sequence number for an IBM MQ channel. The *Reset Channel* dialog window appears. Optionally, a sequence number can be specified within the **Message Sequence number** field to be used when the channel is started.

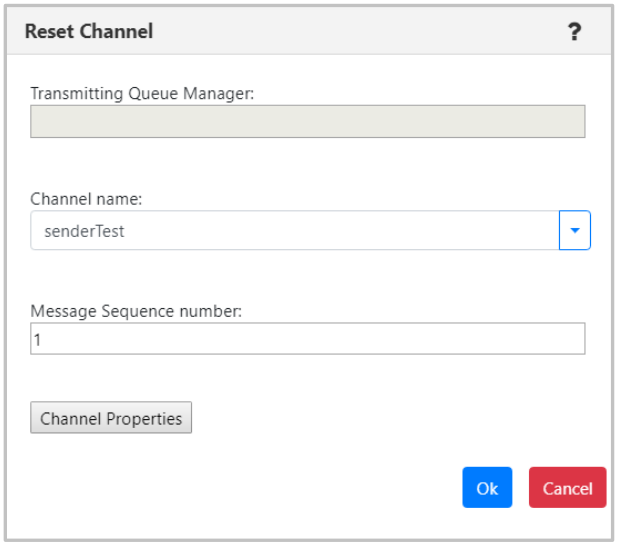


Figure 4.3.5.3-E. Reset Channel

4.3.5.4 Channel Properties

Clicking **Properties** from the channel's action menu (*Figure 4.3.5-A*) will open the channel's *Properties* window.

For more information on the properties of channels, please go to the IBM Knowledge Center:

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.explorer.doc/e_properties_channels.htm

See *Custom Attributes* for information on adding custom attributes to a channel (done on the **Custom Attributes** tab).

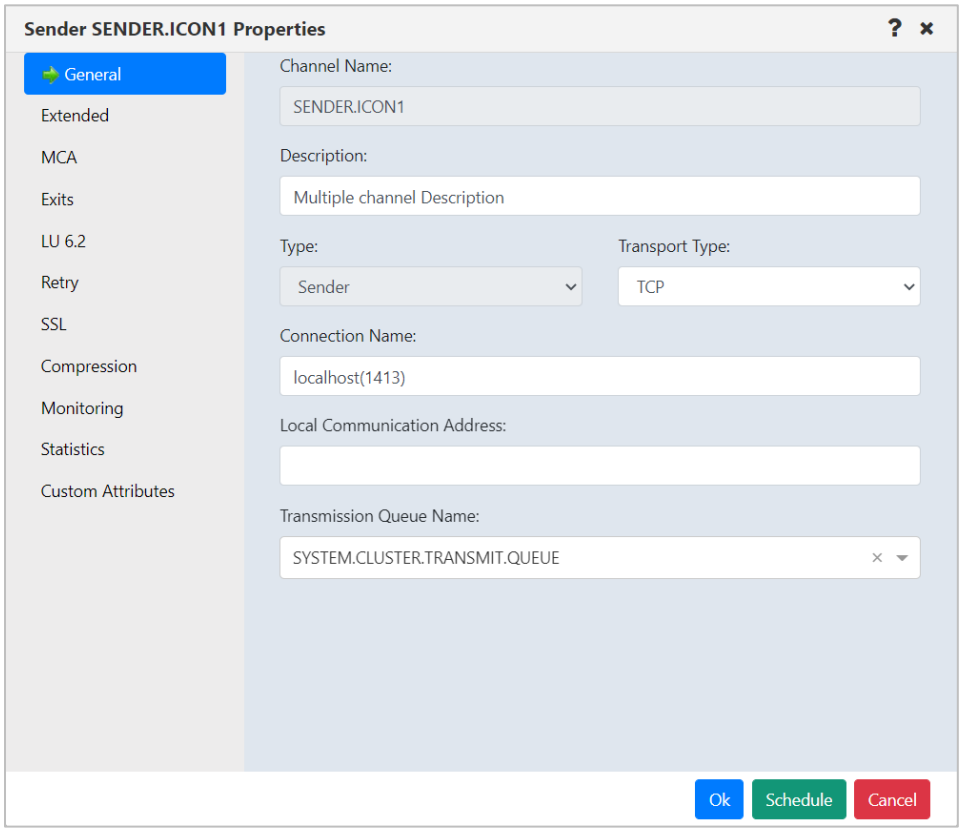


Figure 4.3.5.4-A. Channel Properties

4.3.5.5 Channel Events

Clicking **Events** from a channel's action menu (*Figure 4.3.5-A*) will display the *Events* viewlet of the channel.

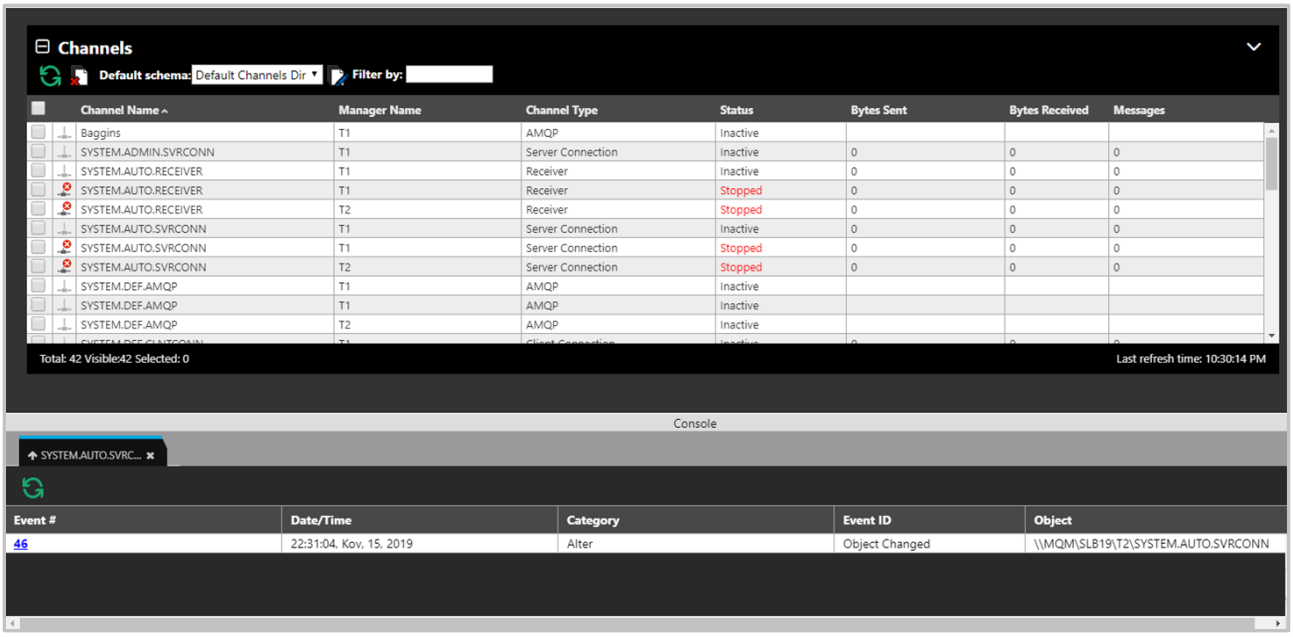


Figure 4.3.5.5-A. Channel Events Viewlet

Clicking a blue event number will open the *Event details* window for the event. There are three tabs: **General** (*Figure 4.3.5.5-B*), **Diagnostic** (*Figure 4.3.5.5-C*) and **Detail** (*Figure 4.3.5.5-D*).

On the **Detail** tab, an attribute can be selected to restore the attribute's previous properties. Select the attribute to revert and click **Rollback Selected Changes** (*Figure 4.3.5.5-D*).

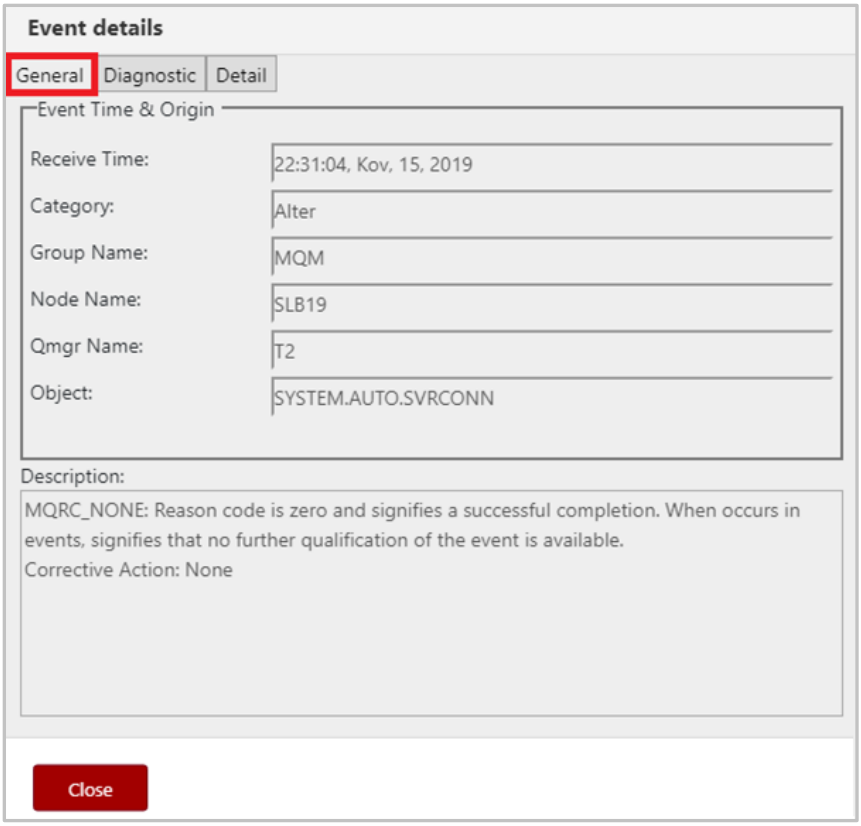


Figure 4.3.5.5-B. Event Details – General Tab

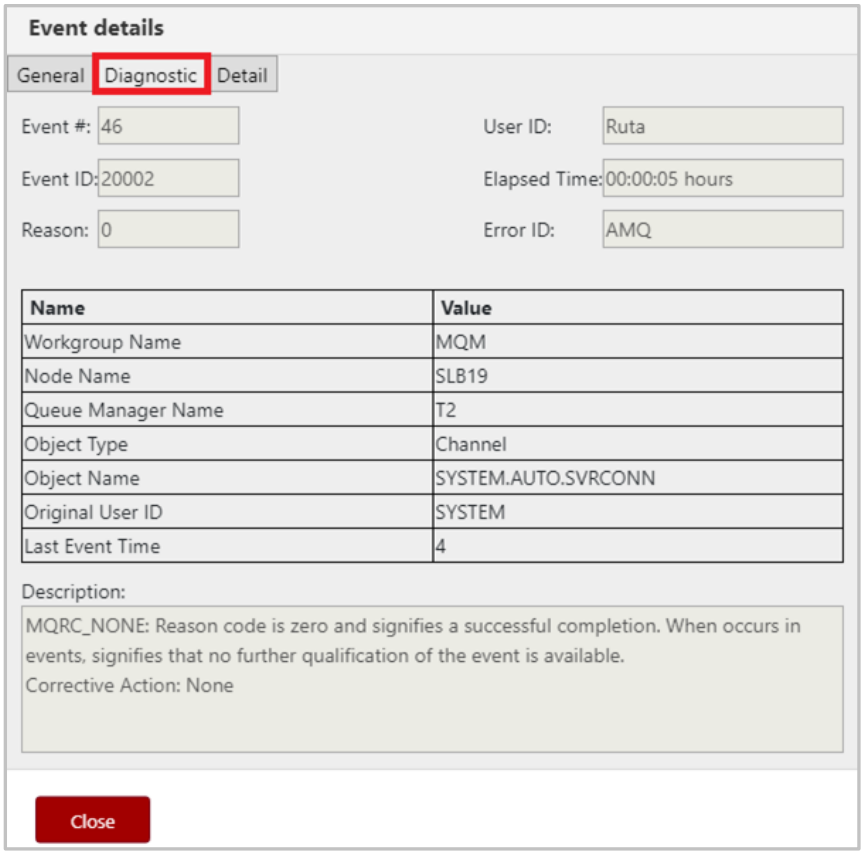


Figure 4.3.5.5-C. Event Details – Diagnostic Tab

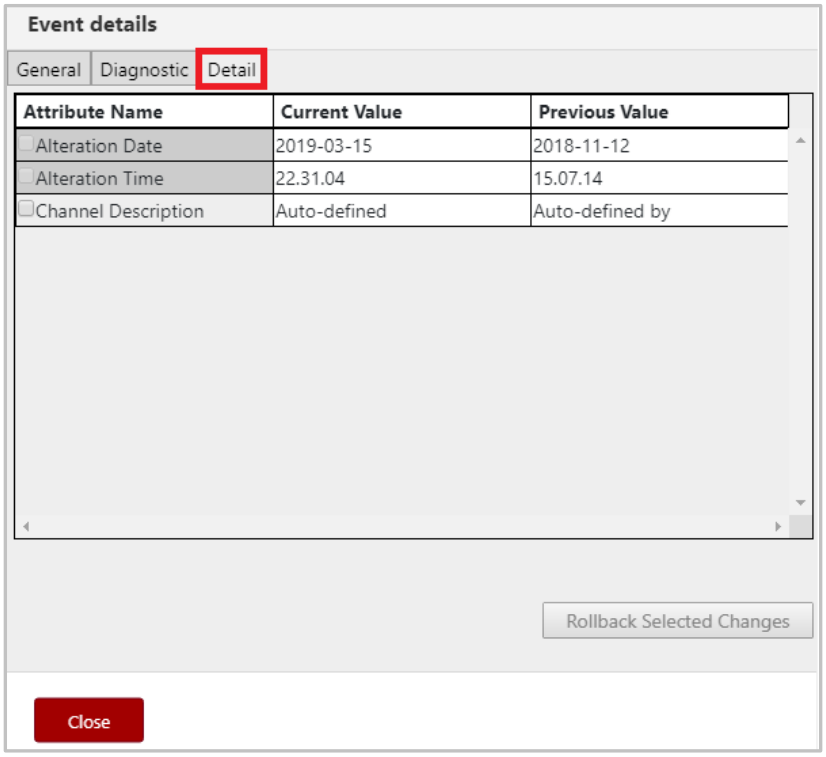


Figure 4.3.5.5-D. Event Details – Detail Tab

4.3.5.6 Add Channel to Favorites

Channels can be added to a *Favorites* viewlet. For more information on adding a favorites viewlet, please see *Create a New Viewlet for Favorite Objects*.

4.3.6 Comparing Objects

Objects can be compared within a viewlet. To compare objects, either select all objects (by clicking on the Select All check box) or select multiple objects. Click **Compare** on the pop-up menu. A compare table appears in the *Console* panel at the bottom of the screen.

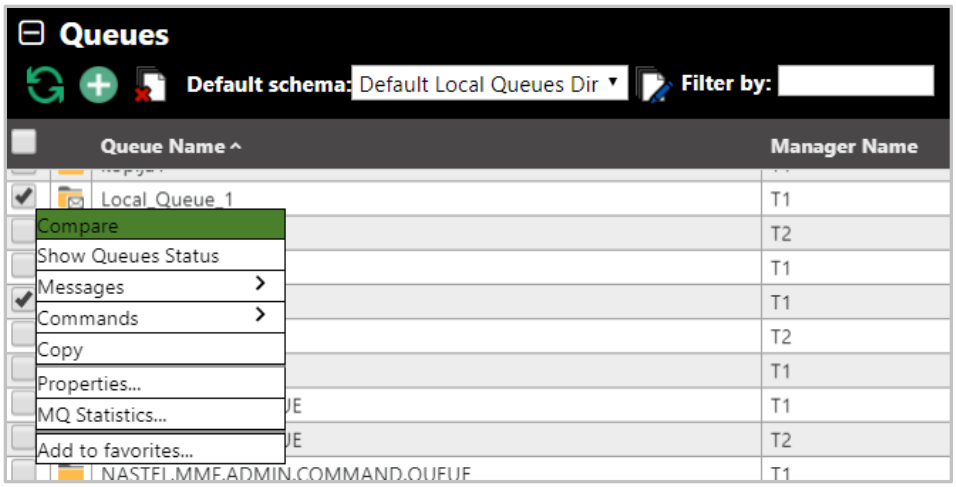
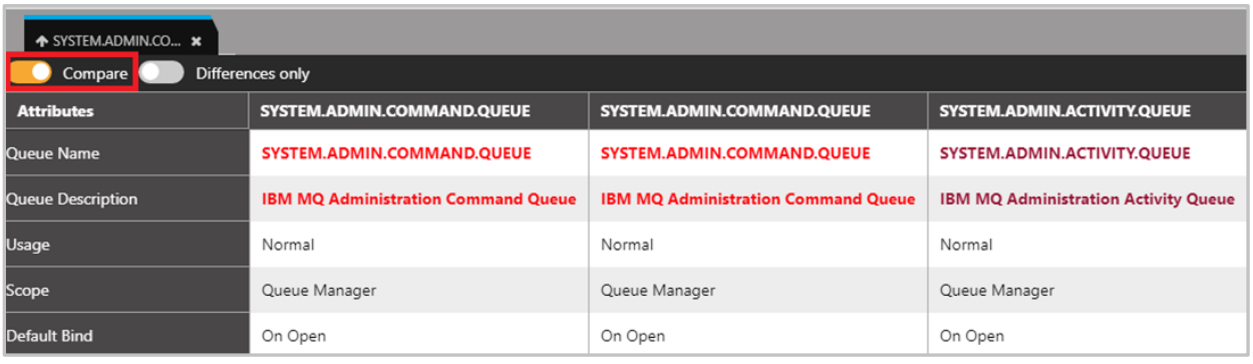


Figure 4.3.6-A. Compare Option

NOTE

When comparing channels, only channels of the same type can be compared; the **Compare** option will only appear when the **Channel Type** is the same for all selected channels.

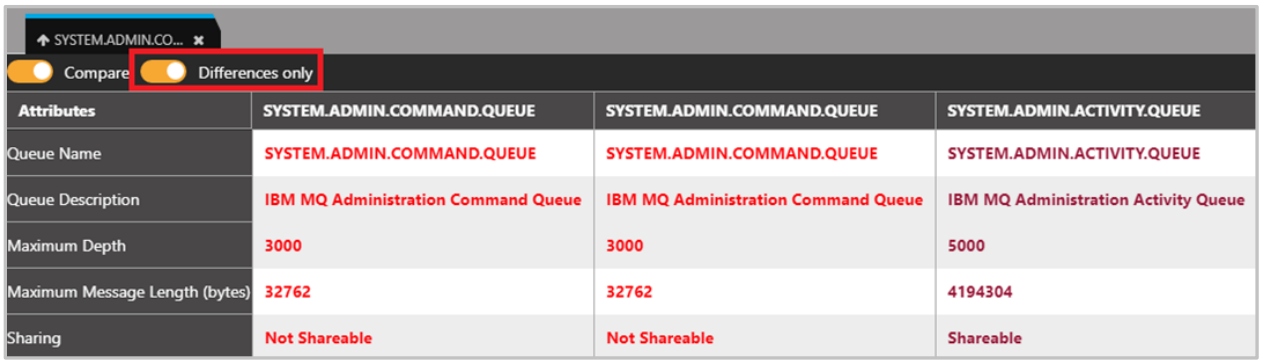
Within the comparison table, matching values will appear in the same color. If an attribute is identical for all objects, they will appear in black. This feature is controlled by the **Compare** option (*Figure 4.3.6-B*).



Attributes	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.ACTIVITY.QUEUE
Queue Name	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.ACTIVITY.QUEUE
Queue Description	IBM MQ Administration Command Queue	IBM MQ Administration Command Queue	IBM MQ Administration Activity Queue
Usage	Normal	Normal	Normal
Scope	Queue Manager	Queue Manager	Queue Manager
Default Bind	On Open	On Open	On Open

Figure 4.3.6-B. Compare Option

To only view objects with differences, turn on the **Differences Only** option (*Figure 4.3.6-C*).



Attributes	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.ACTIVITY.QUEUE
Queue Name	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.COMMAND.QUEUE	SYSTEM.ADMIN.ACTIVITY.QUEUE
Queue Description	IBM MQ Administration Command Queue	IBM MQ Administration Command Queue	IBM MQ Administration Activity Queue
Maximum Depth	3000	3000	5000
Maximum Message Length (bytes)	32762	32762	4194304
Sharing	Not Shareable	Not Shareable	Shareable

Figure 4.3.6-C. Differences Only Option

4.3.7 Customizing Viewlets

The way a viewlet is displayed can be changed by using schemas, sorting, and filtering. Viewlets can also be customized by changing the width of the columns. Hover over the column headers until you see a double arrow, then click and drag to increase or decrease the column width.

4.3.7.1 Schemas

Schemas control how a viewlet is displayed; the attribute columns and the order in which they appear are controlled by the schema currently in effect. Each viewlet type has a default schema, but you can create your own custom schema to specify the attributes you want to view and their order.

By default, the **Manager Name** column appears as the second column in most of the viewlets even though it does not appear in the Available attributes list (*Figure 4.3.7.1-C*). To remove the **Manager Name** column, uncheck the **Show Manager for default schemas** option in *User Settings* (section *4.4.4.1*).

To change a viewlet's display, select a schema from the **Default schema** drop-down list. All available schemas will appear in this list.

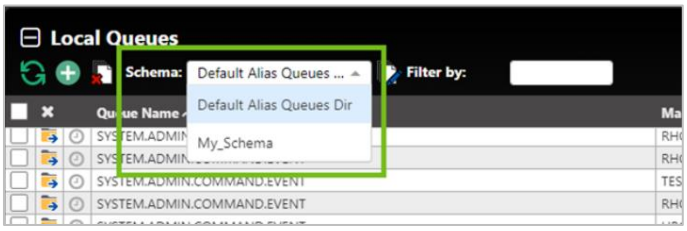


Figure 4.3.7.1-A. Default Schema

To create a schema, click the **Manage Viewlet Schemas** button.

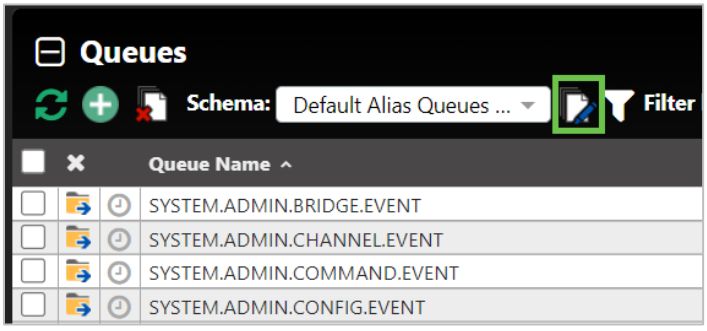


Figure 4.3.7.1-B. Manage Viewlet Schemas Button

The *Manage Schemas* window appears. Click **Add** to add a new schema. You can also copy an existing schema by clicking the **Copy As** button.

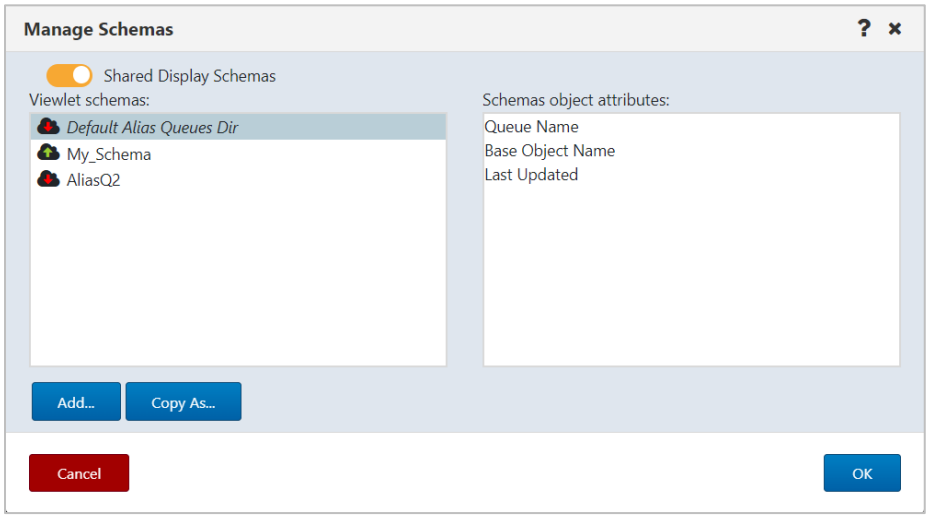


Figure 4.3.7.1-C. Manage Schemas – Adding a New Schema

The *Edit Schema* window opens.

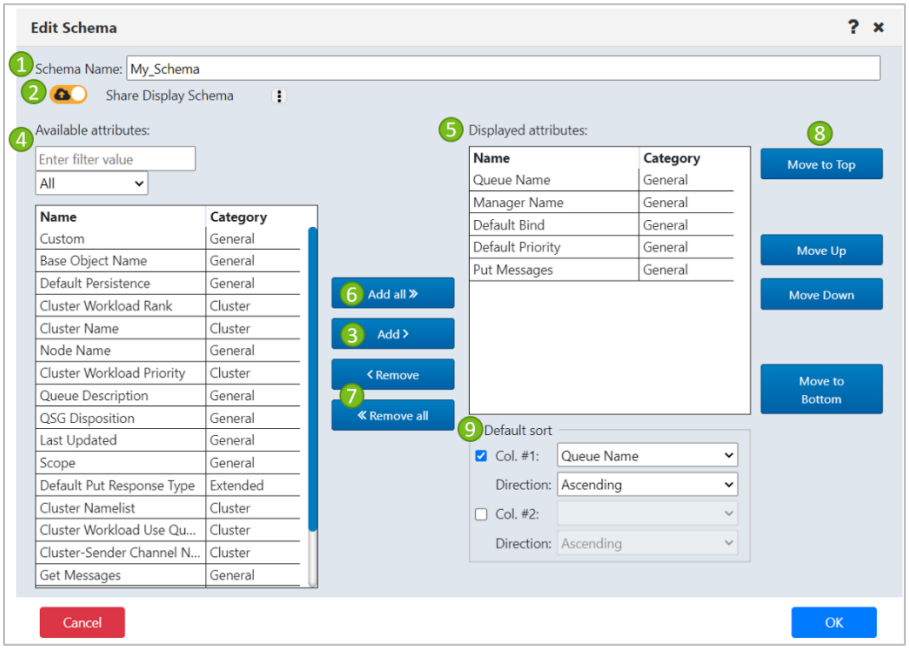


Figure 4.3.7.1-D. Edit Schema

Add a name for the new schema in the field provided (1). Using the **Add all** (6) and **Add** (3) buttons, select attributes from the **Available attributes** table (4) on the left side of the screen. They will now appear in the **Displayed attributes** table (5) on the right side of the screen. Easily find attributes in the **Available attributes** table by using the filter (4) immediately above the table.

To remove attributes from the **Displayed attributes** table, use the **Remove** and **Remove all** buttons (7).

The order the attributes appear within the **Displayed attributes** table is the order in which the attributes will appear in the viewlet. To change this order, select an attribute and use the **Move to Top**, **Move Up**, **Move Down** and **Move to Bottom** buttons (8).

The manner in which the viewlet's data will be sorted is specified within the **Default sort** section at the bottom right of the screen (9). Enable the **Col #1** checkbox and select the attribute to sort by. Select **Ascending** or **Descending** from the **Direction** drop-down list. To sort by a secondary column, perform the same steps for the **Col. #2** checkbox.

Click **OK** to add the new schema.

The schema will now appear on the *Manage Schemas* window. On this screen, users can add, copy, edit or delete existing schemas.

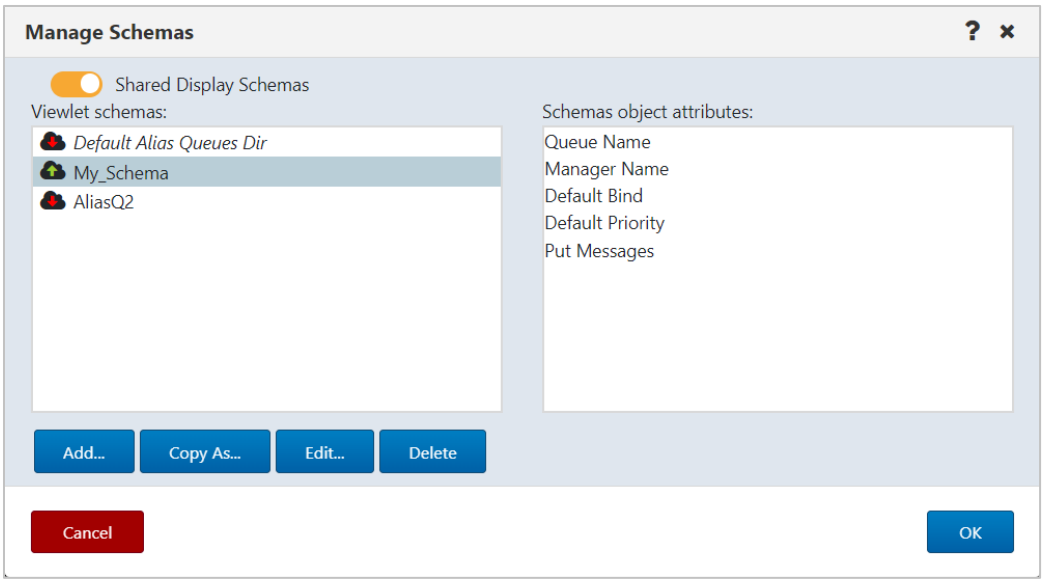


Figure 4.3.7.1-E. Manage Schemas

The **Edit Schema** button now appears allowing you to edit your new schema.

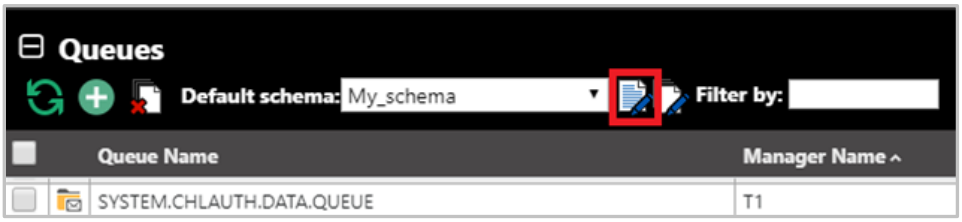


Figure 4.3.7.1-F. Edit Schema Button

To customize messages viewlets, create a new schema or apply an existing one by clicking the **Manage viewlets schemas** or **Edit current schema** button as described above.

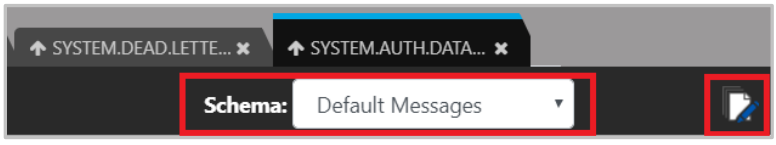


Figure 4.3.7.1-G. Schemas for Messages Viewlet

When you click the **Edit current Schema** button, the *Edit Schema* window opens. Within the *Available Attributes* list, there are several message attributes to select from. Perform the same steps as explained above to create or edit a schema.

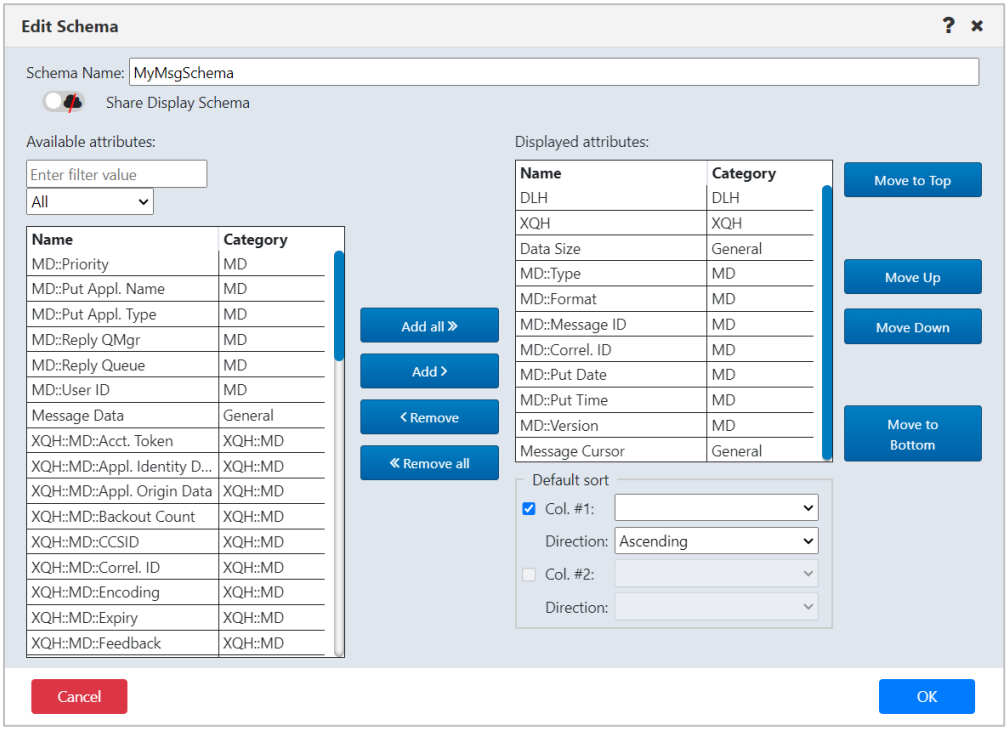
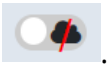
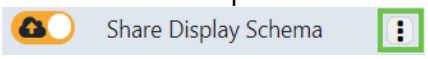


Figure 4.3.7.1-H. Edit Schema

To share a schema, turn on the **Shared Display Schema** slider (2)  . Its color changes to orange. Click the vertical ellipse icon that is now displayed next to the **Shared Display Schema** label 

.

Click the eye icon next to each group you want to share the dashboard with. The eye icon changes to green for selected groups. Hover your mouse over the vertical ellipse icon to view a list of the groups with which a schema is shared.
On the *Manage Schemas* window, look for the following icons:

Indicates a schema that has been shared with your group.

Indicates a schema that you have shared. After you edit a schema that you have shared with one or more groups, the users in those groups will have access to the updated version of the schema.

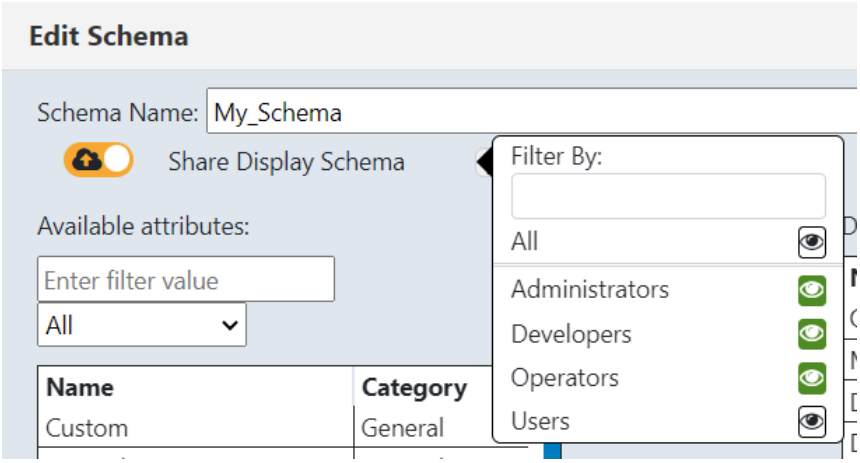


Figure 4.3.7.1-I. Share Schema

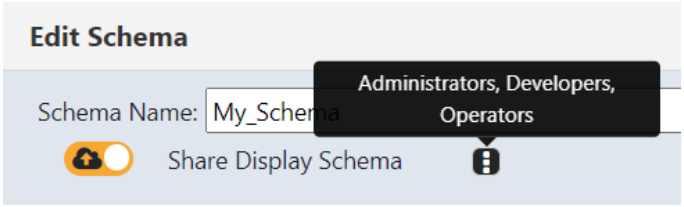


Figure 4.3.7.1-J. Shared Schema

4.3.7.2 Sorting

By default, a viewlet reflects the sort method set up in the selected schema. Click any column header to sort the data by that column. The arrow immediately to the right of the column header name indicates whether the data is sorted in ascending (up arrow ^) or descending (down arrow v) order. To go back to the viewlet's default sort method, click the **Default table sorting** button .

If the viewlet's schema includes both primary and secondary sort methods, arrows are displayed in both column headers. To change the primary and secondary sort methods:

1. Click the header of the new column that you want to use for the primary sort method.
2. Control-click (or Alt-click) the header of the column that you want to use for the secondary sort method.

After completing the steps above, if you remove the sort from one of the columns, data is sorted by the remaining column.

As stated above, to revert to the viewlet's default sort method, click the **Default table sorting** button . You can also turn off all sorting by repeatedly Control-clicking or Alt-clicking each column header that has an arrow until its arrow is removed.

NOTE

In versions prior to 10.5.0.1, sorting functionality was different from that described above.

In version 10.5.0, if a viewlet is sorted by two columns (whether based on a schema or set manually), then clicking on a third column turns off the primary sort column. If a viewlet is sorted by one column (whether based on a schema or set manually), then when you click a second column, it is used as a secondary sort method.

Before version 10.5.0, the first time you clicked a column header other than one already used for sorting, the column that was clicked would be used for the secondary sort. You could turn off the secondary sort to revert to the primary sort method.

Manager Name ^	Channel Type ^
QM_A	Cluster Receiver
QM_A	Cluster Sender
QM_A	Receiver
QM_A	Sender
QM_B	Cluster Receiver
QM_B	Cluster Sender
QM_B	Receiver
QM_B	Sender
QM_C	Cluster Receiver
QM_C	Cluster Sender
QM_C	Cluster Sender

Figure 4.3.7.2-A. Column Sorting (Primary and Secondary)

4.3.7.3 Filtering

Use the **Filter by** field to key in any string of characters to filter objects within a viewlet. The filter applies to all of the viewlet's attributes.

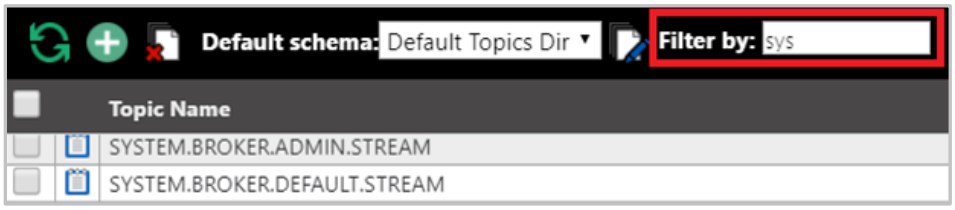


Figure 4.3.7.3-A. Filter By

4.3.7.4 Collapse / Expand Viewlets

Use the minus button ⊟ to collapse and the plus button ⊞ to expand viewlets.

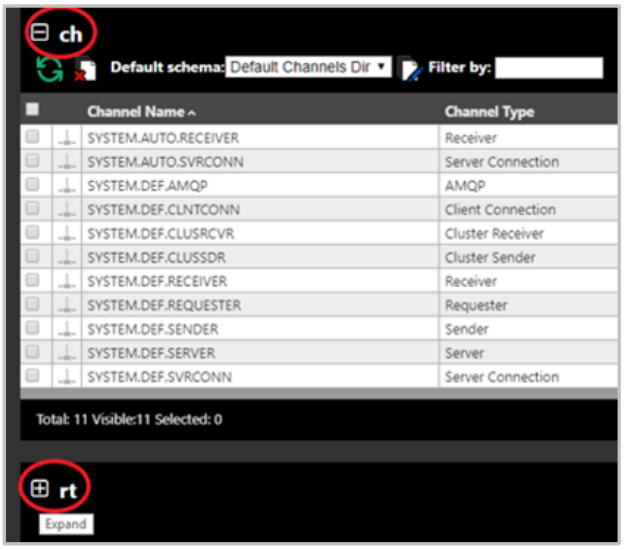


Figure 4.3.7.4-A. Collapse / Expand Viewlets

With one click you can easily expand or collapse all viewlets on your dashboard. Simply right-click on any viewlet's expand/collapse button. A menu will appear where you can select to expand or collapse all viewlets on the dashboard.

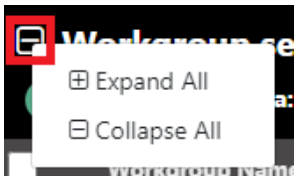
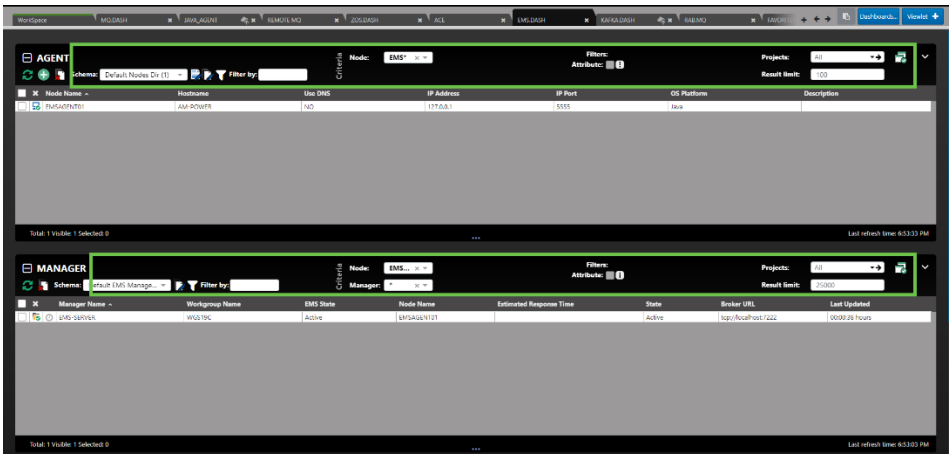


Figure 4.3.7.4-B. Collapse / Expand All Viewlets

4.3.7.5 Moving Viewlets

To move a viewlet up or down, click the top of it and drag and drop it to a new position.



4.3.7.6 Resize Viewlets

The height of viewlets can be resized. The updated size will be retained from session to session until the viewlet is resized again.

To update a viewlet's height, hover your mouse within the black bottom portion of a viewlet until your cursor changes to the resize symbol . Click and hold the mouse while dragging up to decrease or down to increase the viewlet's size.

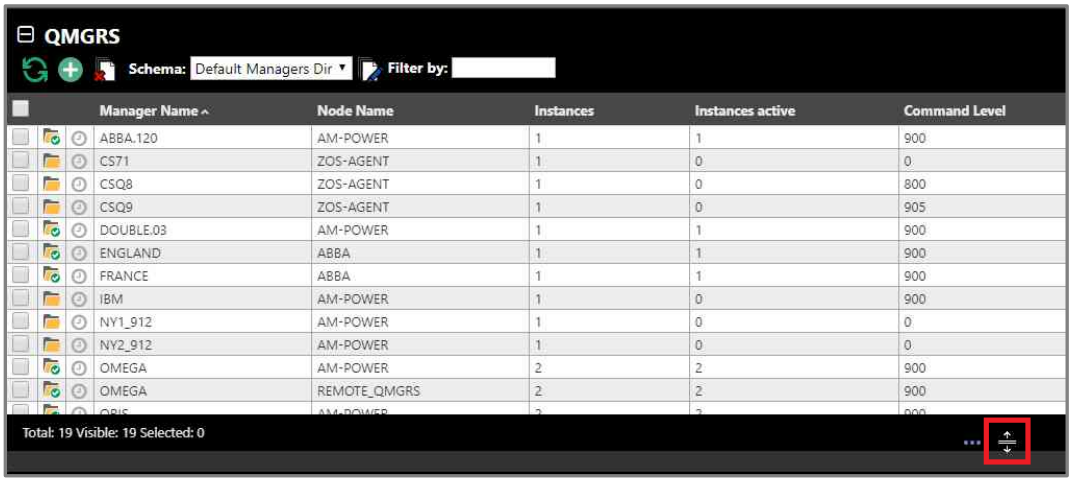


Figure 4.3.7.6-A. Resize Viewlets

4.3.8 Topology

The Topology feature allows you to view an animated graphic representation of queue relationships. The object structure and hierarchy are displayed. The below figure is an example:

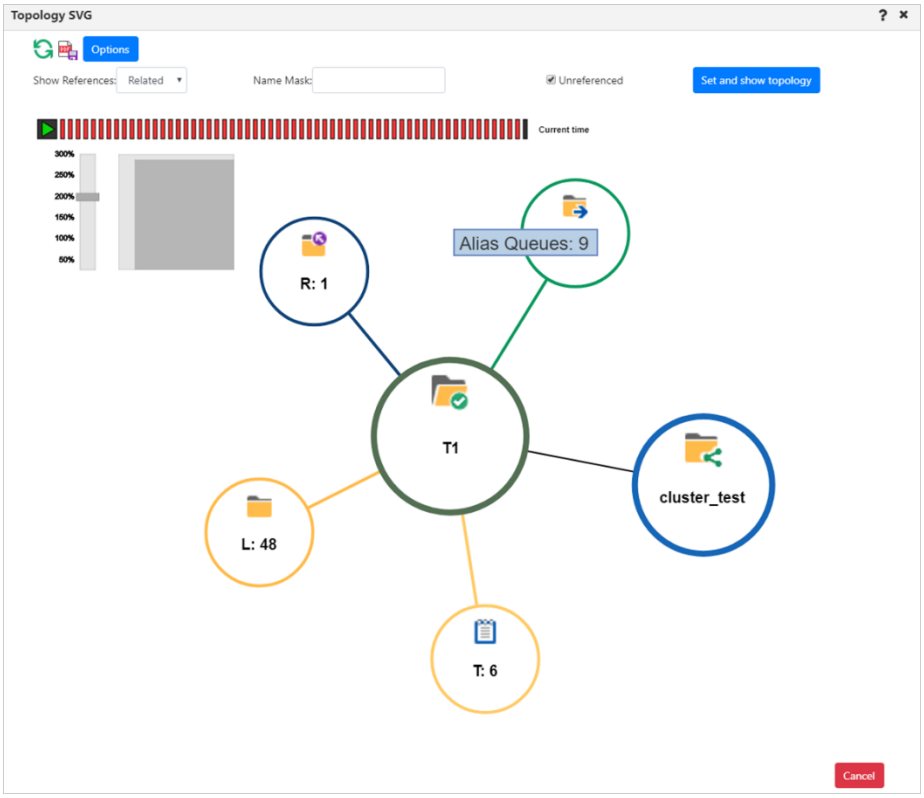


Figure 4.3.8-A. Topology Diagram

4.3.8.1 How to Display a Topology

From a queue manager or node pop-up menu (for IBM MQ, TIBCO EMS or Apache Kafka), select **Show Topology**. Please note, you can select multiple queue managers belonging to the same node.

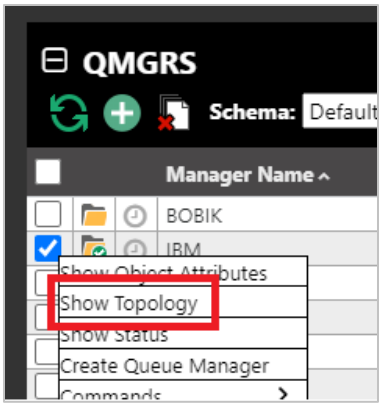


Figure 4.3.8.1-A. Show Topology

The *Topology SVG* window opens.

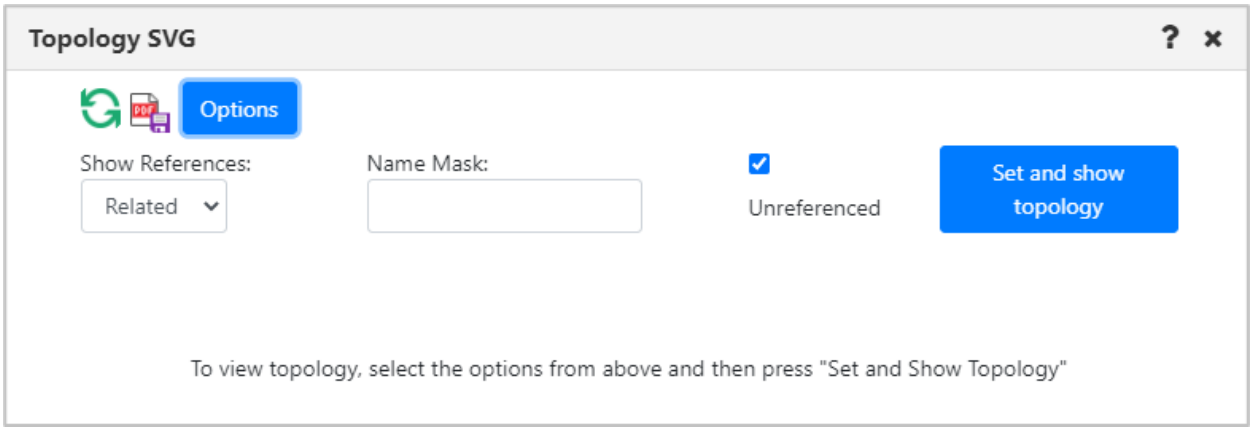


Figure 4.3.8.1-B. Show Topology

From the **Show References** drop-down, select the type of references (**Related**, **All** or **Invalid**) the topology should display.

Use the **Name Mask** field to filter the topology by the lowest hierarchical object level. The default value of this field is an asterisk "*", which means everything. You can search using the asterisk, QAB* or enter the object's exact name. In the example below **QABC** was entered within the **Name Mask** field to display this exact queue.

Use the **Unreferenced** check box to specify whether or not to display unreferenced objects.

Click the blue **Set and show topology** button after you have specified your options to display the topology diagram and animation. The objects are signified with A (alias queue), L (local queue), R (remote queue) or T (topics) and the number of queues or topics. The default configuration for topology is to show queue manager relationships, including remote queues, transmission queues, channels, and clusters. The key element is to verify setup and discover inconsistencies. For example, in the diagram below, a remote queue "aname" is actually a point to a remote queue on the local queue manager.

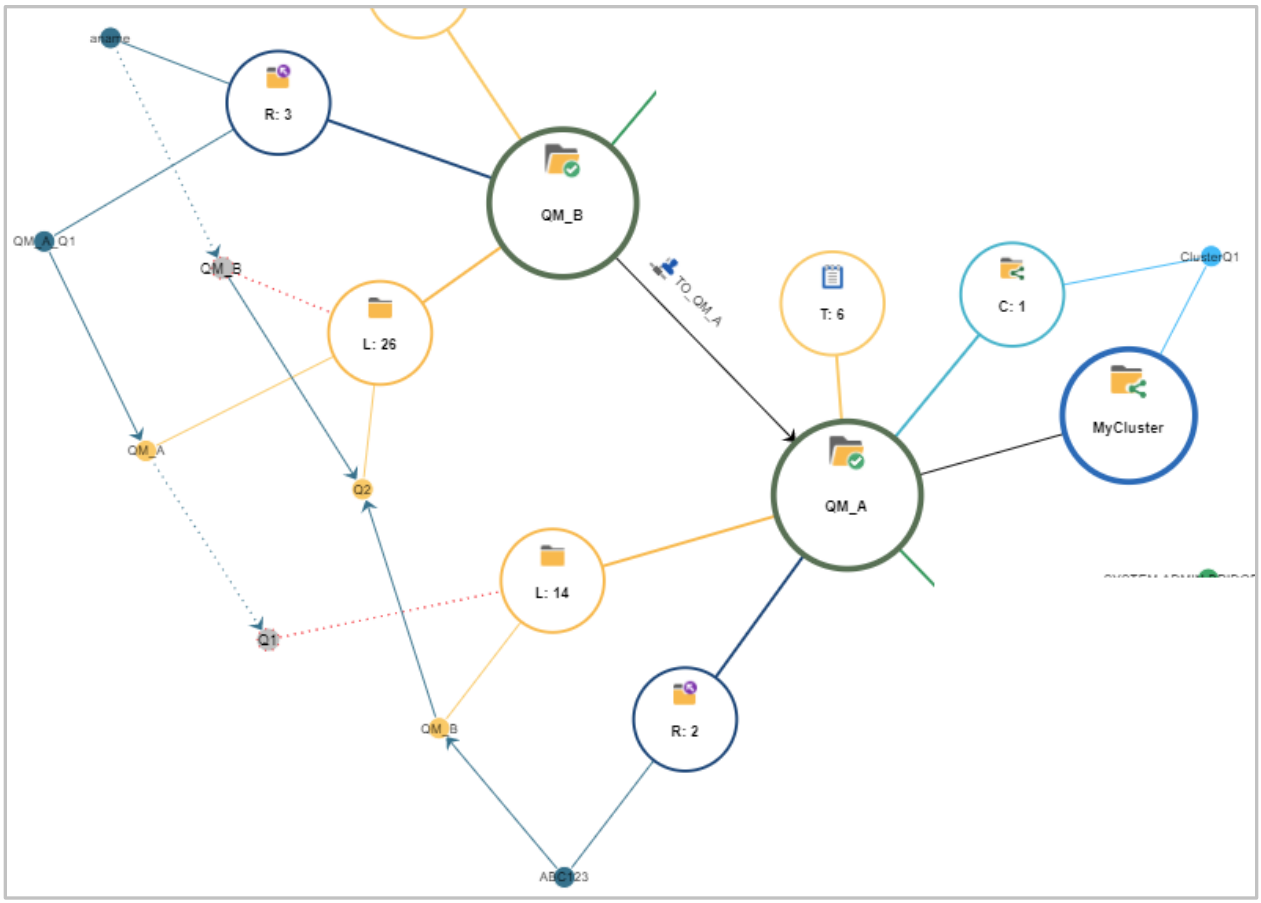


Figure 4.3.8.1-C. Customized Topology

Hover over the topology circles to view object names.

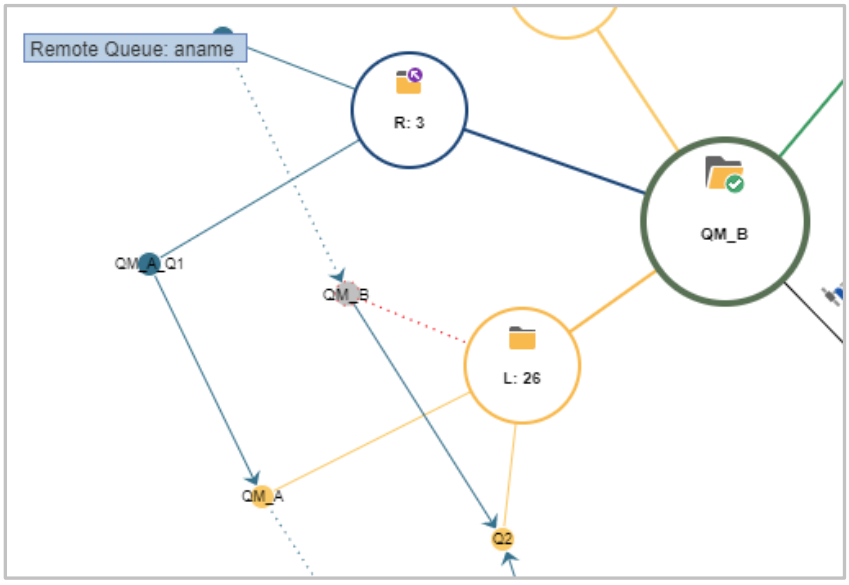


Figure 4.3.8.1-D. Display Object Names

Zoom in or out by scrolling your mouse scroll button or by dragging the size slider located on the left side of the window. Change a topology's location on the screen by clicking the topology and drag and dropping it to a new position.

Click the refresh button or Set and Show Topology to refresh the topology.

Another topology view is **All**. This includes all local queues whether they are in a relation or not. To reduce the amount of data presented, this only includes queue objects with message by default (see exception in animation below).

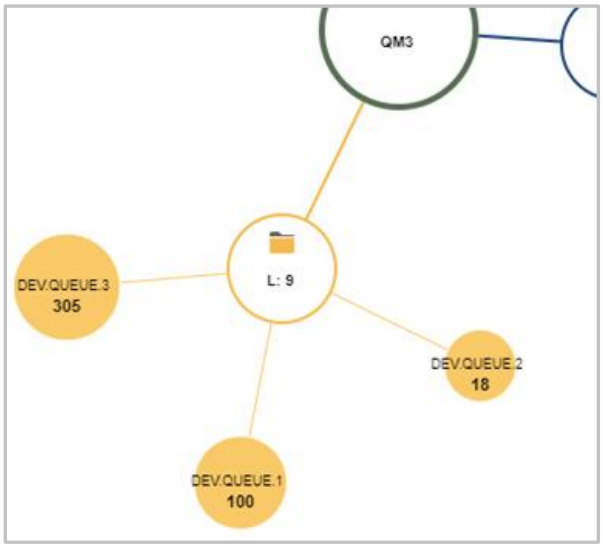


Figure 4.3.8.1-E. Show References: All

You can click the **Export Topology to PDF** button to download a PDF of the topology. The downloaded file will have the object's name for which the topology is created, time generated and reference type. The PDF page will adapt its size to the displayed data but will not exceed 9000x9000 (maximum topology size). Please note that to download a PDF file, it is not required that the topology be displayed in the current SVG window.

4.3.8.2 Diagram Options

To customize the diagram, click the **Options** button located at the top-left of the *Topology SVG* window. The *Topology animation options* window opens.

Figure 4.3.8.2-A. Options Button

The topology diagram data can be animated over a specified time range. This extracts data from the IBM MQ statistics and can take some time to complete. To activate, enable **Animate Queue Statistics**.

Use the following drop-down menu options to customize your selection:

- **Time frame:** Specify the date range for the animation. Select from **Last hour**, **Last 3 hours**, **Last 6 hours** or **Range**.
- **Animated Queue Property:** Specify what to animate. Select from **Max. queue depth**, **Puts count** (messages arrived), **Put get delta** (difference between the messages read and the messages arrived).
- **Animation Speed:** Specify the speed for the animation. Choose from **Fast (6 seconds)**, **Normal (12 seconds)** or **Slow (20 seconds)**.

Enable the **Show current queue depth** option to display queue depth values when animation is not active.

The **Maximum Topology Object Amount** field is used to determine the maximum amount of topology objects to represent. The default value is 1000. The **Maximum Topology Child Node values Amount** field is used to determine the maximum number of queues to represent in the topology. The default value is 500.

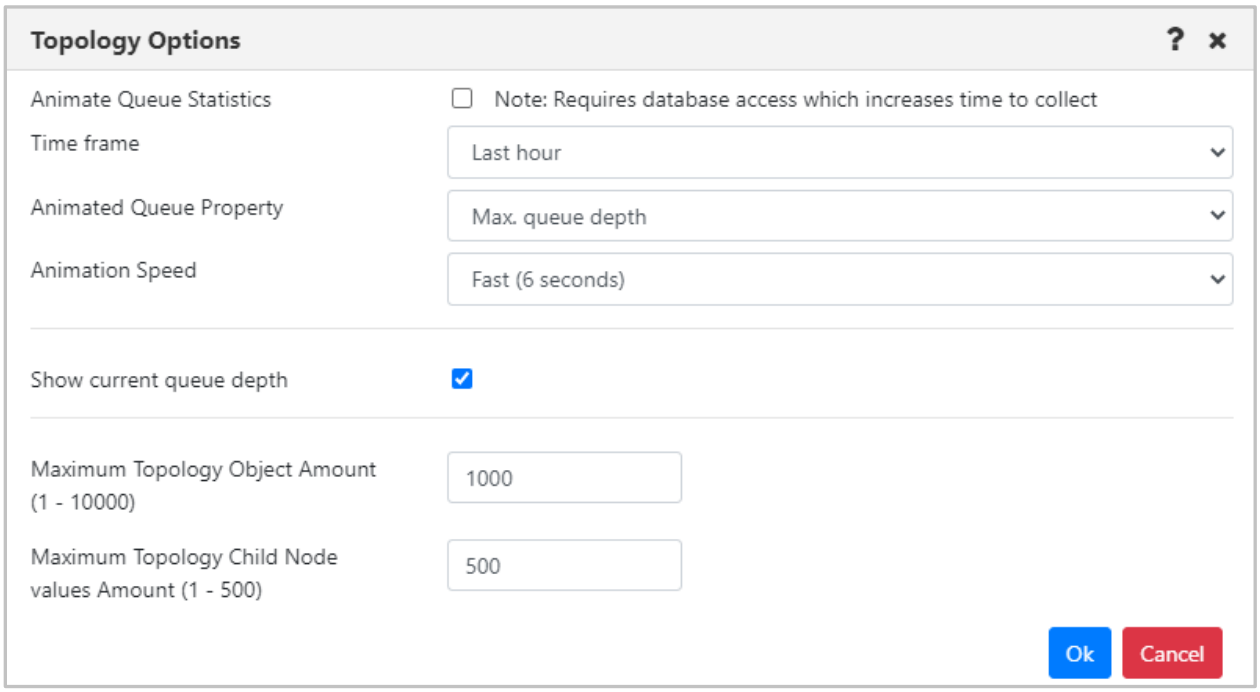


Figure 4.3.8.2-B. Topology Animation Options

Click **Ok** to save your changes. Back on the *Topology SVG* window, click the **Play** button to start the animation.

Figure 4.3.8.2-C. Start Animation

If the graph to be generated includes more objects than the specified **Maximum Topology Object Amount**, an error message will be displayed, and the graph is not generated.

If **All** is selected from the **Show References** dropdown, the topology will not represent queues if the queues amount in the queue manager exceeds the **Maximum Topology Child Node values Amount** (specified on the *Topology Options* screen). These queues are displayed in an additional view which is launched by clicking the **Additional Topology Views** button. In the new window that opens, select the manager, object, and diagram page number for which you want to view the results.

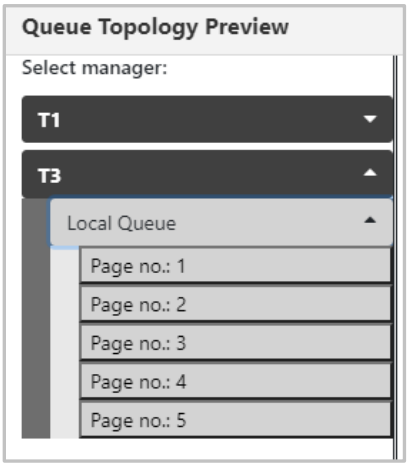


Figure 4.3.8.2-D. Queue Topology Preview

All overflowed objects will be displayed in multiple graphs (each graph will have a maximum of 100 queue objects), with each graph displayed on its own page. To navigate between the pages, use the list on the left side of the window or the arrow buttons located above the graph.

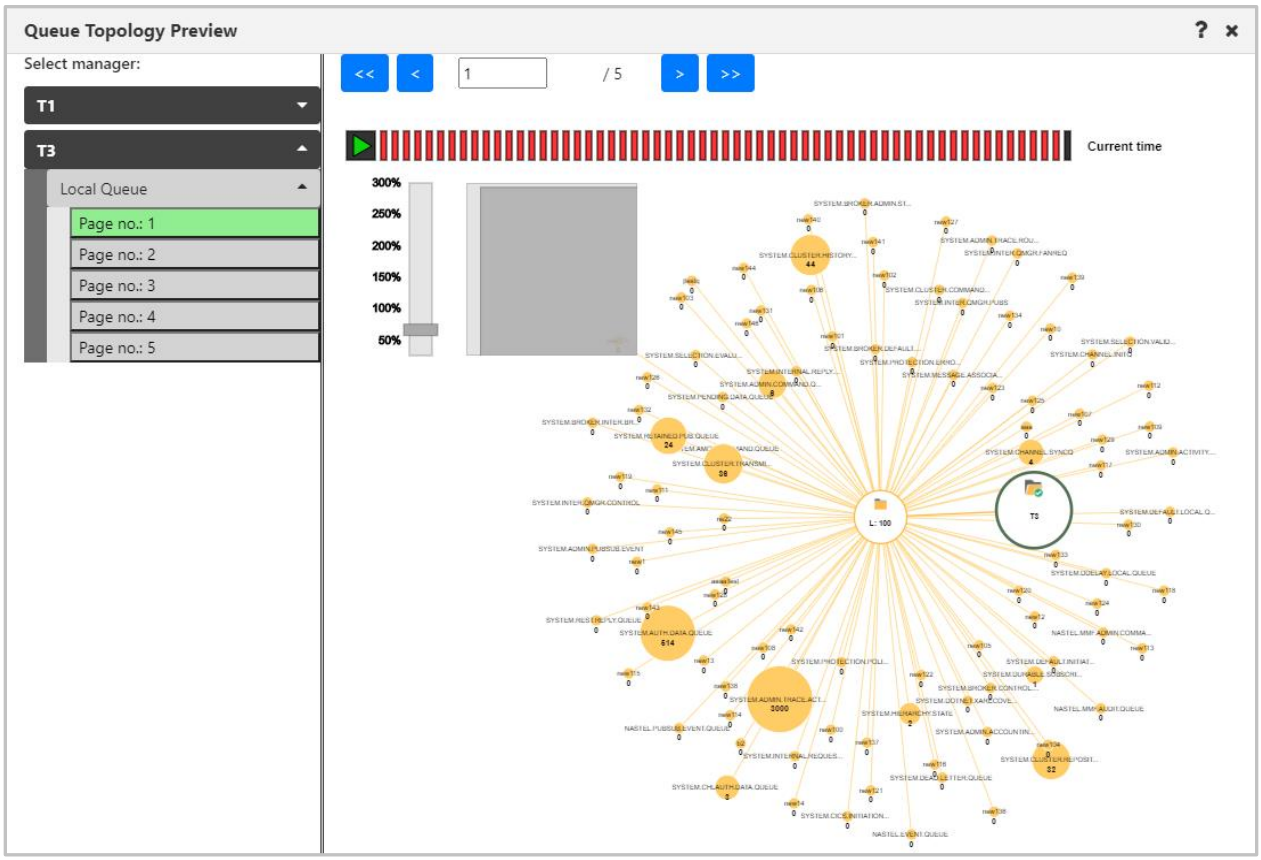


Figure 4.3.8.2-E. Graphs of Overflowed Objects

Kafka Nodes

Kafka node types can be displayed. The brokers (displayed in the orange boxes below) and topics (displayed in the red boxes below) are displayed. If **All** is selected for **Show References**, all topics are displayed as well (displayed in the blue box below).

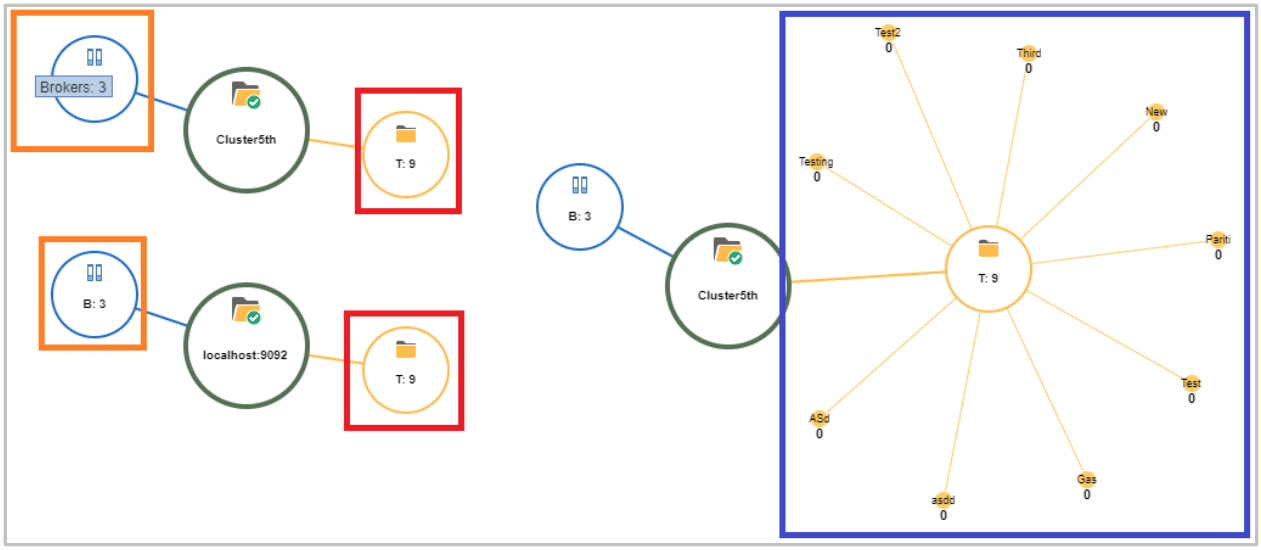


Figure 4.3.8.3-A. Kafka Nodes

4.3.9 Help Button

There is a help button located at the top right corner of various windows. Click this button to get to the *Resource Center*.

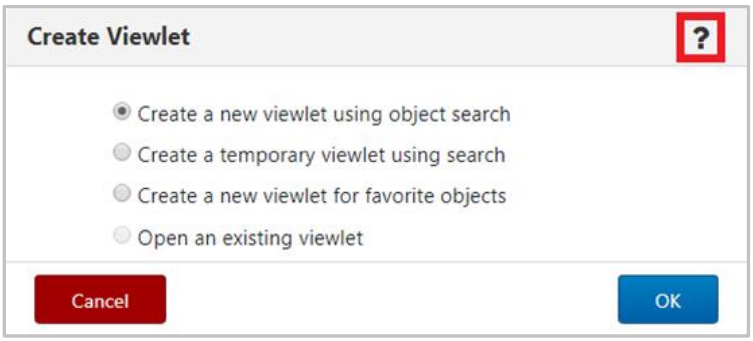


Figure 4.3.9-A. Help Option

You can also reach the *Resource Center* or other online resource defined in your system's global settings by selecting the **Help** button from the toolbar (see *Toolbar Options*).

4.3.10 MQ Statistics Viewlet

MQ statistics viewlets display all attributes of local MQ queues, channels, and queue managers. The attributes displayed in these viewlets are determined by SQL queries created by you. The SQL queries are saved as schemas for easy retrieval for future use.

4.3.10.1 Viewing an MQ Statistics Viewlet

Multiple objects can be displayed in an MQ statistics viewlet. To view statistics for object(s), select them from a queue, channel, or queue manager viewlet. Select **MQ Statistics** from the pop-up menu that appears.

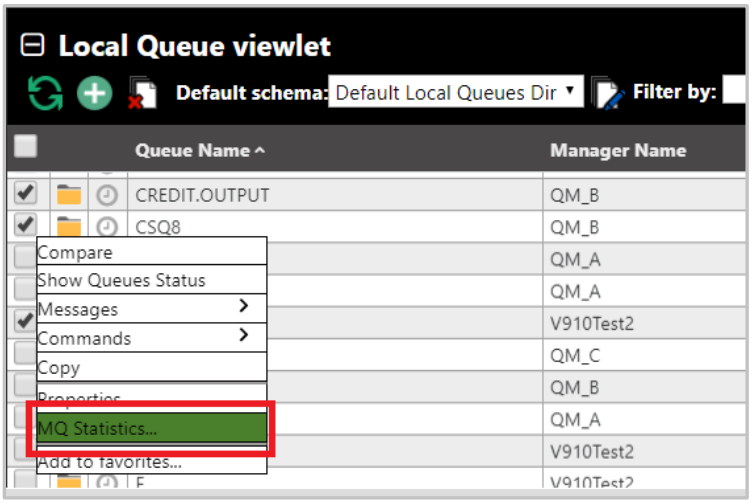


Figure 4.3.10.1-A. MQ Statistics Option on the Object's Menu

The SQL viewlet opens in the Console panel with all of the selected objects' attributes displayed. Be sure to scroll to the right to view all fields.

You can update the date range using the **Date mode** list: *Last 24 hours*, *Last 48 hours*, *Last 7 days*, Custom Days Count (enter the number of previous days), or User Date Range (select a date range). When switching back and forth between the User Date Range and the Custom Days count, the date range is updated. For example, if you view records after selecting a Custom Days Count of 14, then switch to the User Date Range, the range shows the past 14 days.

The data can be sorted by clicking the column headers. Click the **Refresh** button to confirm that viewlet is up to date. You can save the viewlet table to a CSV file by clicking the **Save Table As CSV** button.

NOTE

If you receive a message of "No data to display," check the following:

a) Confirm that there is data for the time range specified.
-or-

b) Statistical data collection may not be enabled. This is required to populate MQ Statistics viewlets. Speak to your administrator to confirm that the feature is enabled

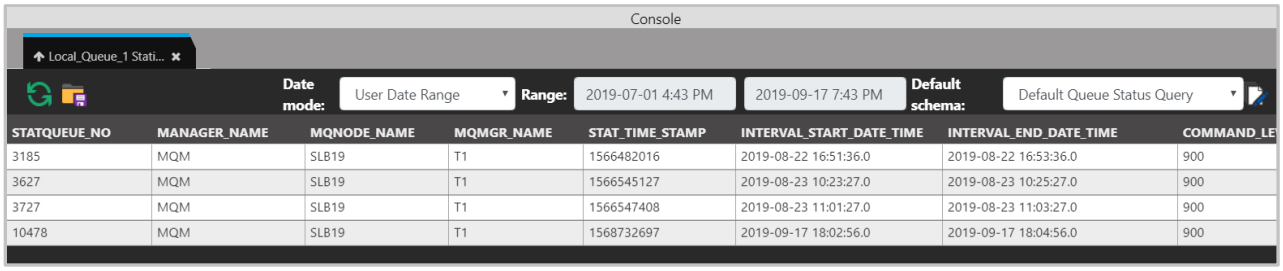


Figure 4.3.10.1-B. MQ Statistics Viewlet

4.3.10.2 Changing the Data Displayed

*The management of statistics schemas is governed by the **Manage Global Display Schemas** and **Manage Private Display Schemas** rights.*

The data displayed is controlled by the schema selected from the **Default schema** drop-down located at the top right of the viewlet. This is the schema that was selected during your previous session and will remain in effect until you select a different schema.

To change your view, select a different schema from the **Default schema** dropdown. You can also create a new schema by editing the current one (please note that you cannot edit the **Default Queue Status Query** schema) or creating a completely new schema. After selecting one of these options to edit or create a new schema, the *Manage Statistics Schemas* window opens. This is where you specify the query to determine the attributes displayed.

NOTE

When creating a new schema, it is recommended to make a copy of an existing schema and use that as a starting point (instead of overwriting an existing schema).

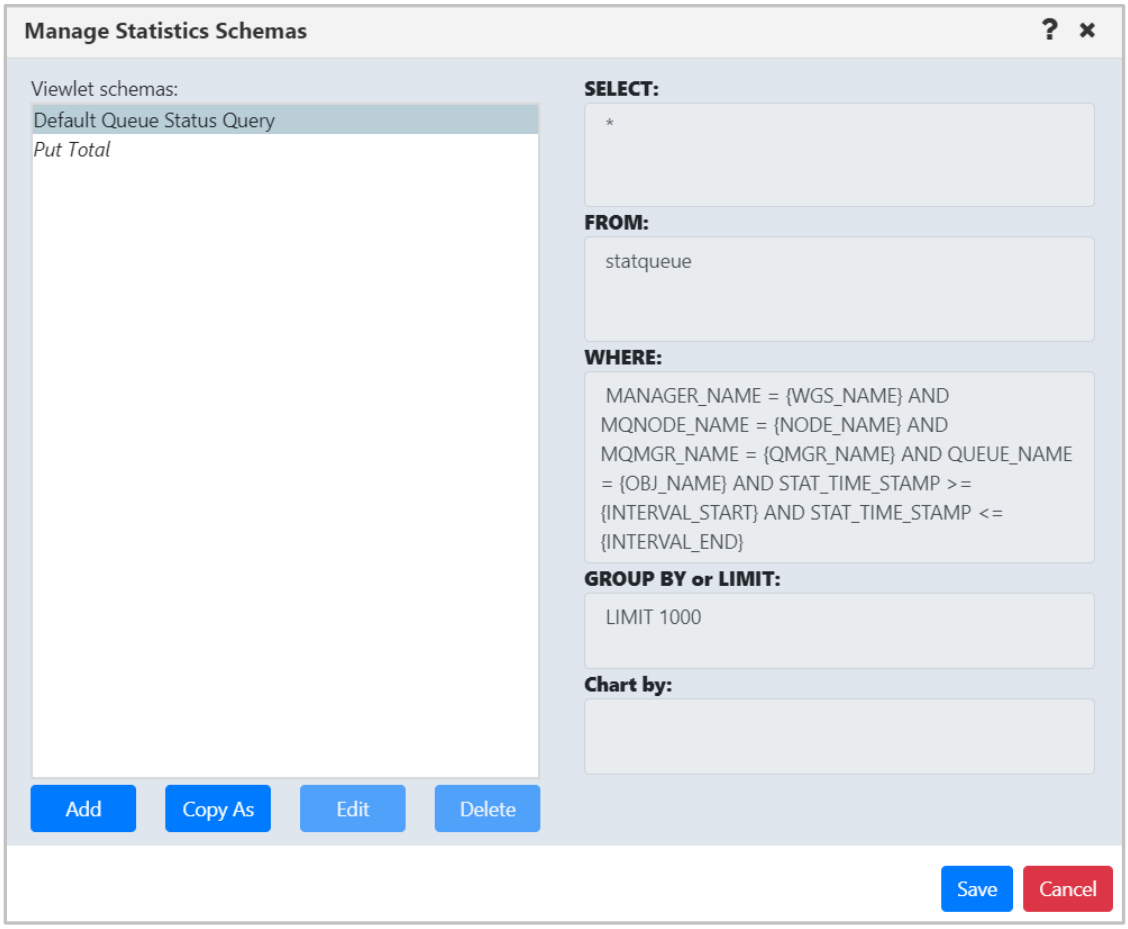


Figure 4.3.10.2-A. Manage Statistics Schemas Window

The left side of the window displays the existing schemas. Select a schema to view its query on the right side of the window. The queries will have slight differences depending on the database you utilize.

See below for an explanation of the schema fields.

- **SELECT** statement: The attributes to display in the viewlet are specified within the **SELECT** statement. The **Default Queue Status Query** schema selects all attributes. You can change this by entering all desired attributes and separating them with a comma.

TIP

You can copy and paste attribute names from viewlet column headers right into the **Select** field of the query.

The column header names within the viewlet can be customized by using "`as <ColumnTitle>`" to change the column header names**.** Attributes containing numeric values can also be added together using `+`. As seen in the below examples, the put count fields were added together and display in one column titled "TOTALPUT."

NOTE

Refer to *Appendix D* for a listing of all available statistic attributes.

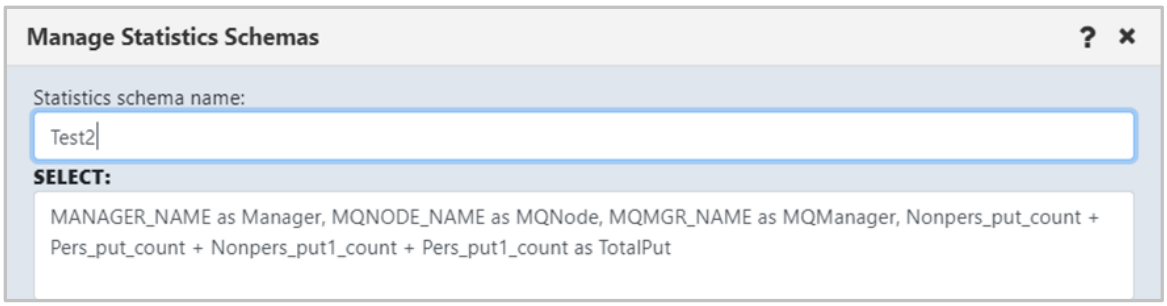


Figure 4.3.10.2-B. Adding Fields and Changing Display Names

MANAGER	MQNODE	MQMANAGER	TOTALPUT
MQM	HPENVY0113	V910Test	12
MQM	HPENVY0113	V910Test	12
MQM	HPENVY0113	V910Test	12
MQM	HPENVY0113	V910Test	12
MQM	HPENVY0113	V910Test	12

Figure 4.3.10.2-C. Using Views

- **FROM** statement**:** Defines the table name.
- **WHERE** statement**:** contains query conditions. It can have defined or dynamic parameters. Dynamic parameter values are filled automatically according to the selected object. Possible dynamic parameters:

  {WGS_NAME} – workgroup server name

  {NODE_NAME} – node name

  {QMGR_NAME} – queue manager name

  {OBJ_NAME} – object name

  {INTERVAL_START} – interval start time Unix timestamp

  {INTERVAL_END} – interval end time Unix timestamp

- **GROUP BY** or **LIMIT** statement**:** defines the sorting and/or the limiting of the column values (limit of record rows). For example, Group by MQNODE_NAME asc LIMIT 1000 (the definition depends on database vendor).
- **Chart by** field: specify a data field to display the results as a graph. See *Viewing a Statistics Graph*.

If you have no SQL experience: As you can see, the *Manage Statistics Schemas* window is very advanced and requires knowledge of SQL. Ask your administrator for assistance. They can send you queries you can copy and paste into the *Manage Statistics Schemas* window.

An even easier method is to utilize Views. Views are queried tables saved in the database created by your administrator. Multiple views can be created. The View name will need to be specified within the **FROM** statement, as seen below. The **WHERE** statement remains the same.

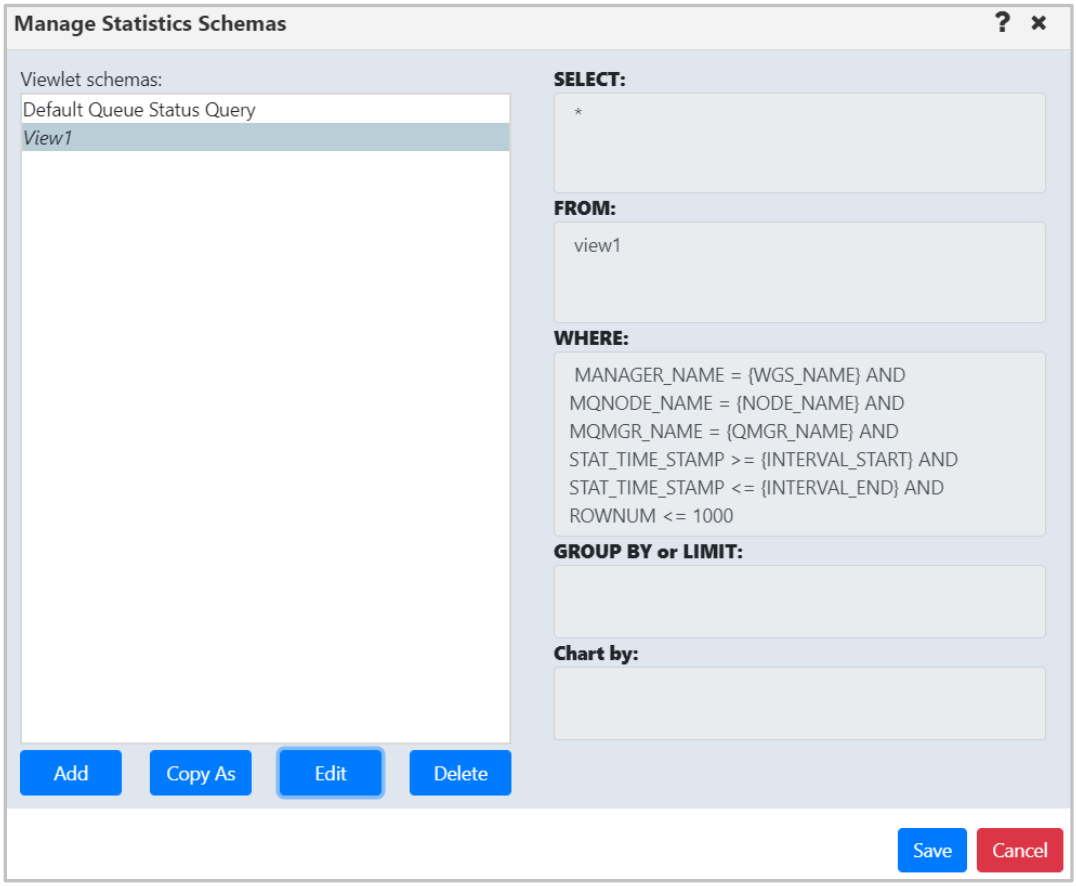


Figure 4.3.10.2-D. Using Views

4.3.10.2.1Example of MySQL Query

Two queues from different nodes (MQM/NODE1/T1/LQ1) and (MQM/NODE2/T2/LQ2) were selected. The local time specified in the statistics viewlet gets converted to a Unix timestamp:

start time (2019-08-21 10:00 AM) 1566370800,

end time (2019-08-21 11:15 PM) 1566418500

The following schema was used for the queue:

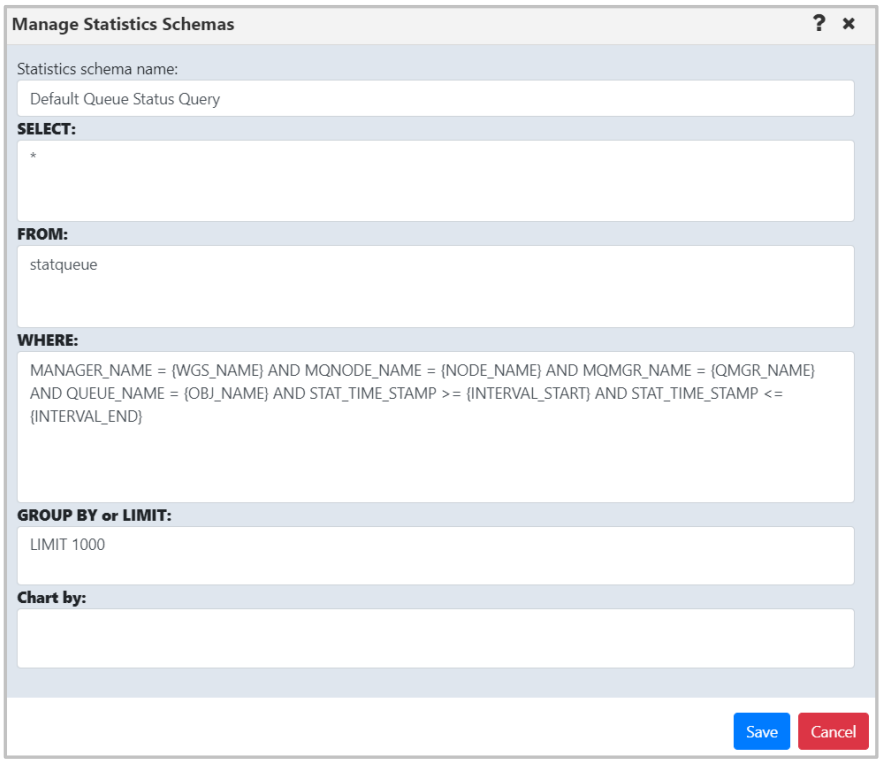


Figure 4.3.10.2-E. MySQL Query Example

Actual query:

```
SELECT * FROM statqueue WHERE
    (
        MANAGER_NAME = 'MQM' AND MQNODE_NAME = 'NODE1' AND MQMGR_NAME = 'T1'
AND QUEUE_NAME = 'LQ1' AND STAT_TIME_STAMP >= 1566370800 AND STAT_TIME_STAMP
<= 1566418500
    )
    OR
    (
        MANAGER_NAME = 'MQM' AND MQNODE_NAME = 'NODE2' AND MQMGR_NAME = 'T2'
AND QUEUE_NAME = 'LQ2' AND STAT_TIME_STAMP >= 1566370800 AND STAT_TIME_STAMP
<= 1566418500
    )
    LIMIT 1000
```

Queries are run using the 'nastel_apwmq' database.

NOTE

The schemas are very flexible and different queries can be run. This includes queries not related to MQ statistics. The syntax is dependent on your SQL database; that is. Queries for the MySQL database can be different from the Postgre database.

4.3.10.3 Viewing a Statistics Graph

Statistics viewlets can be displayed as a graph by specifying the data field within the **Chart by** field. For example, to view message backout count (messages withdrawn from a queue due to transaction problems), enter the data field name, **BACKOUT_COUNT** within **Chart by**.

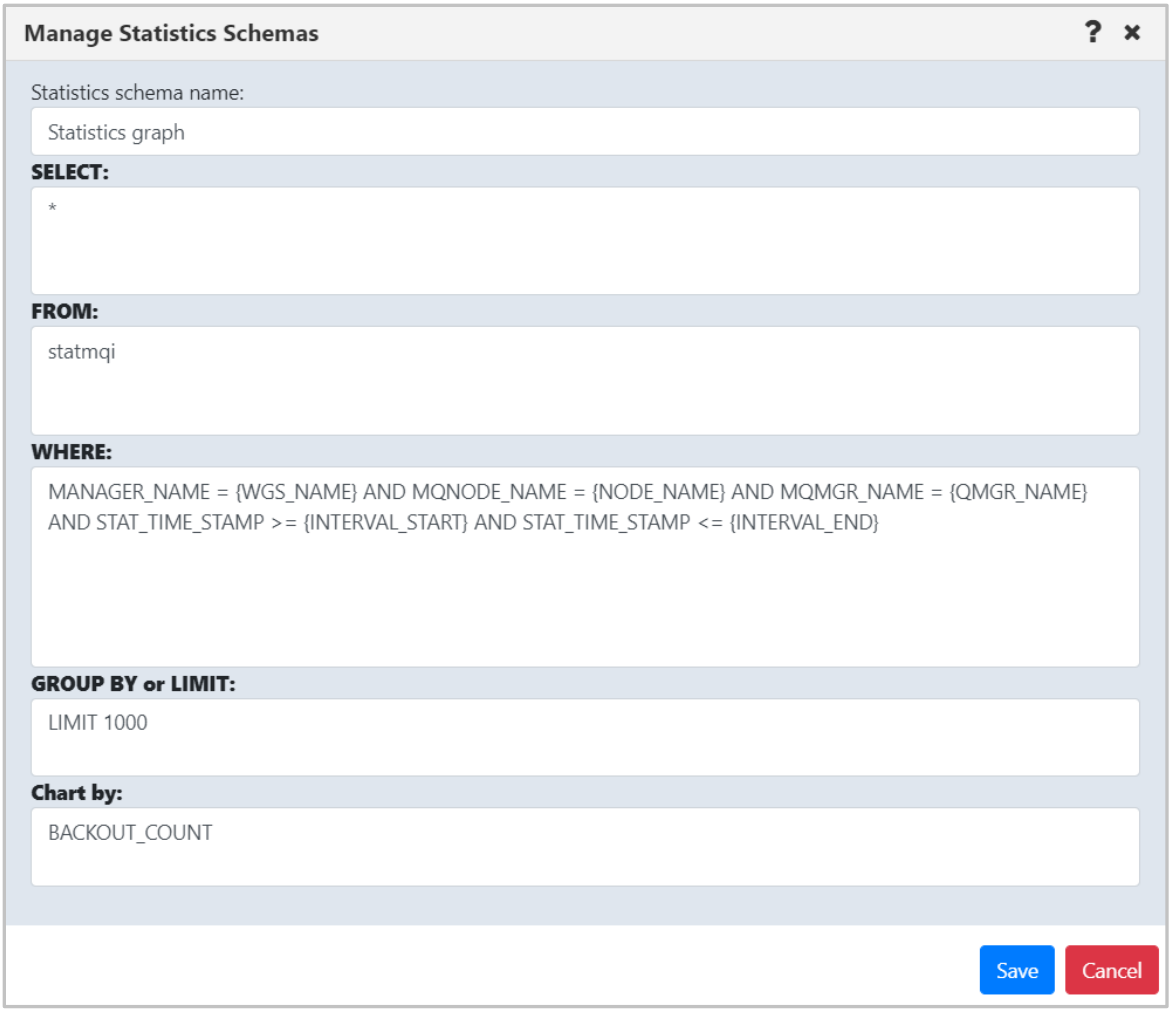


Figure 4.3.10.3-A. Specify Column

Your viewlet will now display as a graph, displaying the dynamics of the backed-out messages during the specified time period.

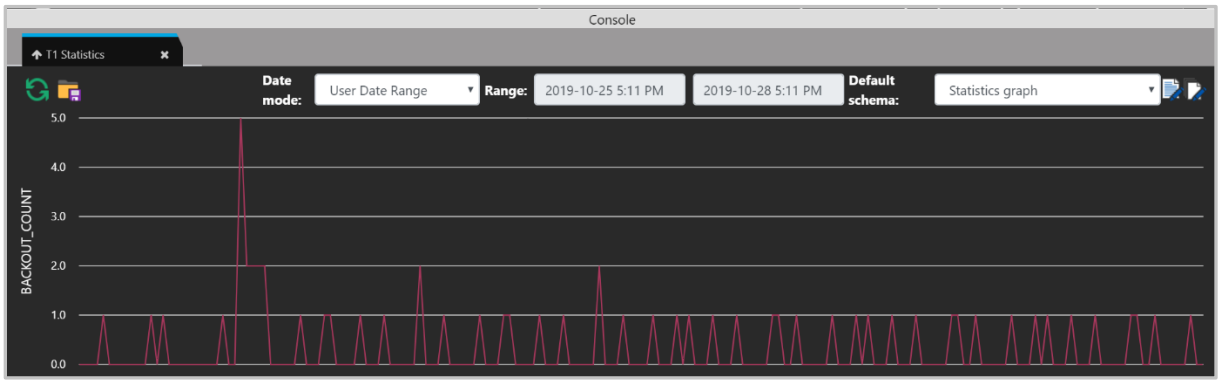


Figure 4.3.10.3-B. Statistics Graph

4.3.11 Kafka Viewlets

Manage all your Kafka instances in meshIQ Manage. You can create viewlets for Kafka nodes, clusters, brokers, topics, partitions, consumers, and connectors. You can also create viewlets for schemas, schema subjects, and schema subject versions.

4.3.11.1 Kafka Clusters

Displays the overall context of the clusters connected. This summary information is gathered from the collective brokers and services.

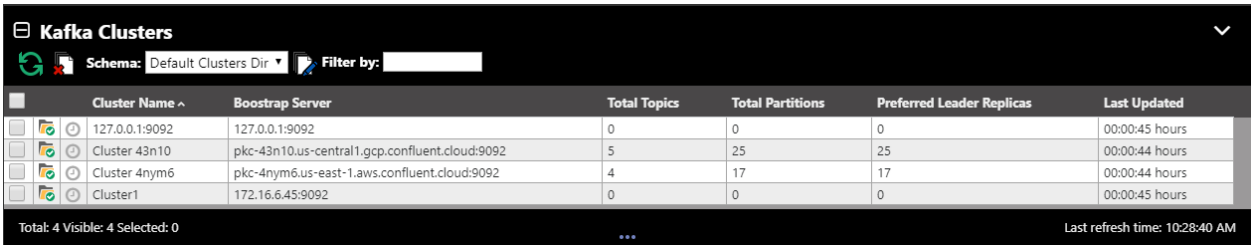


Figure 4.3.11.1-A. Kafka Clusters

4.3.11.2 Kafka Brokers

Displays Kafka brokers across clusters and operational information. Allows for control of cluster properties which can be configured.

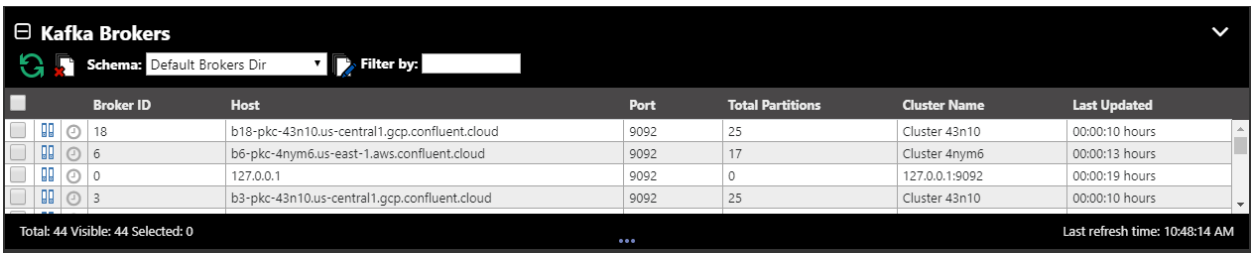


Figure 4.3.11.2-A. Kafka Brokers

4.3.11.3 Kafka Topics

Displays the topics defined across the clusters and current usage. On the fly updates, such as changing the number of partitions, are supported. Messages can be opened from this screen to view associated details.

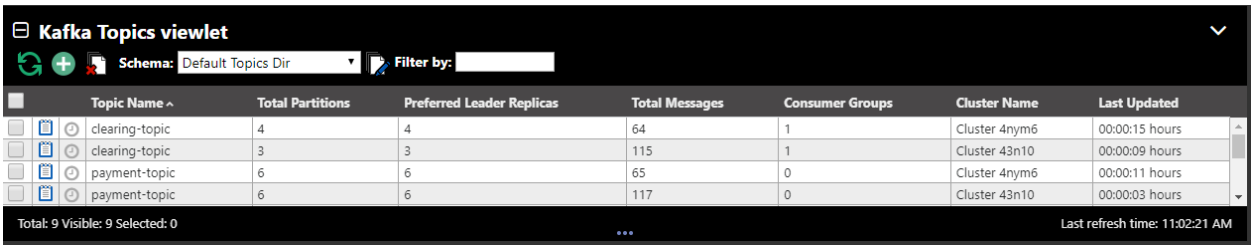


Figure 4.3.11.3-A. Kafka Topics

Users can create and delete topics, change topic attributes such as partition and replication, compare topic definitions including across clusters.

4.3.11.3.1Kafka Messages

Messages are accessed by drilling down from a topic. They can be filtered by partition, content, or offset, or can tail a given topic. Messages can be read from most recent to least recent.

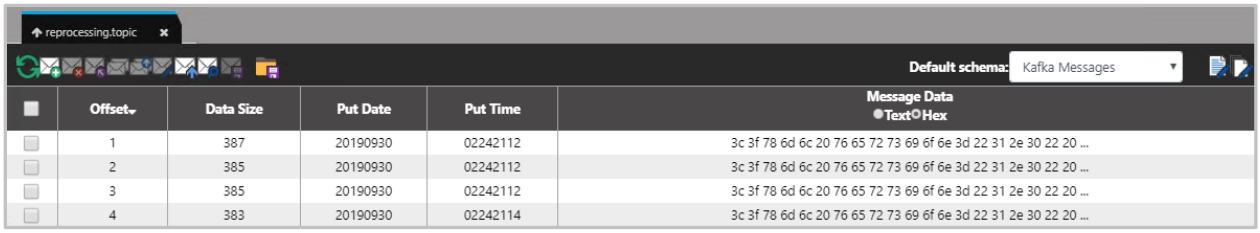


Figure 4.3.11.3.1-A. Kafka Messages

Users can add messages, load files to topics and save topics to a file.

4.3.11.4 Kafka Schema

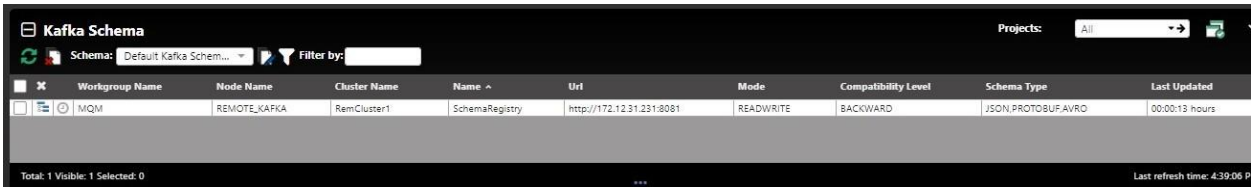


Figure 4.3.11.4-A. Kafka Schema

4.3.11.5 Kafka Schema Subject

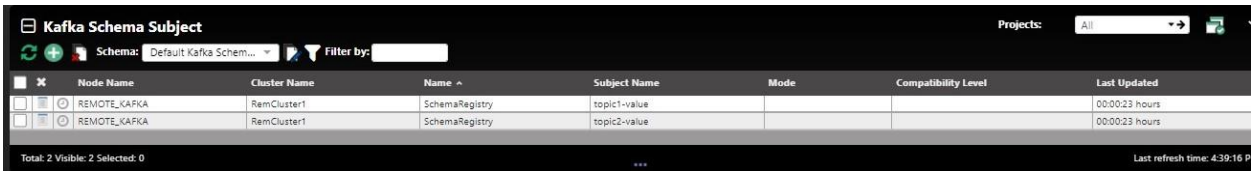


Figure 4.3.11.5-A. Kafka Schema

4.3.11.6 Kafka Schema Subject Version

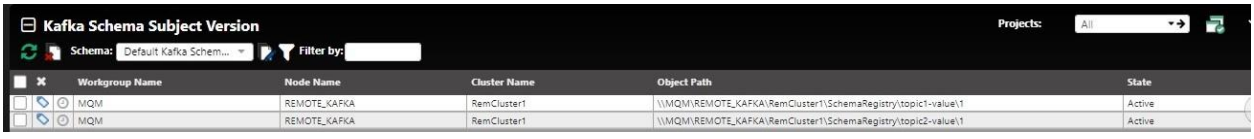
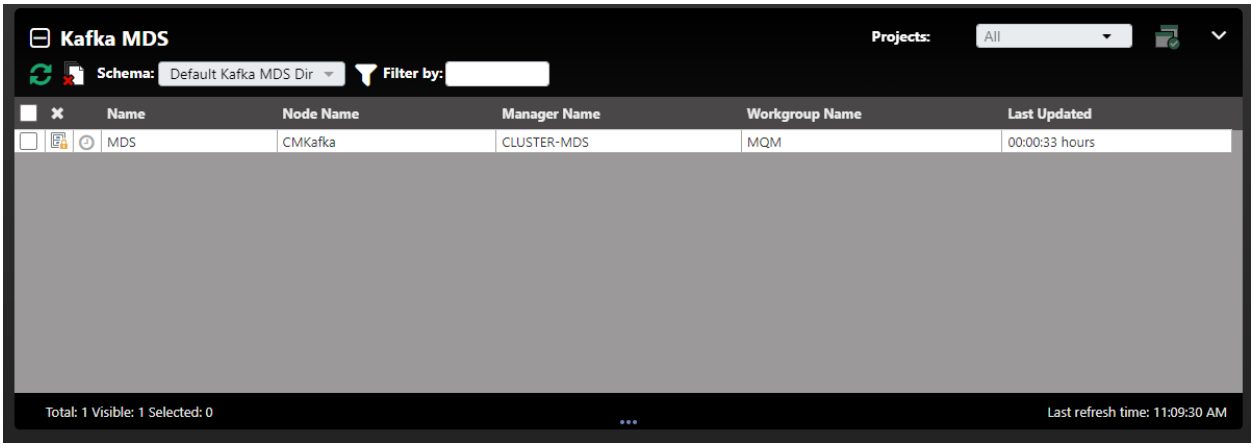


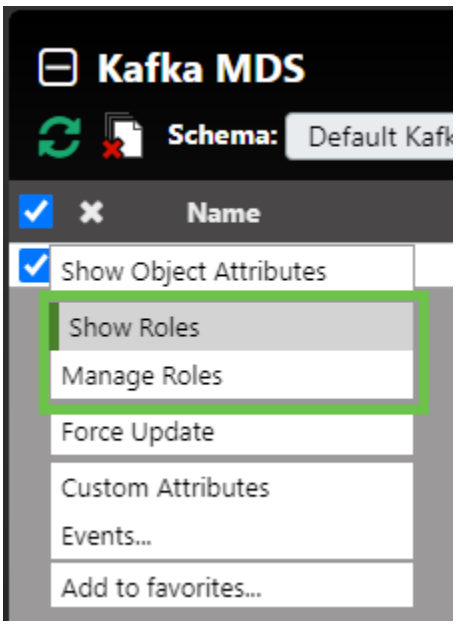
Figure 4.3.11.6-A. Kafka Schema

4.3.11.7 Kafka MDS Viewlets

After an MDS node is set up (see Confluent Platform Metadata Service (MDS) Setup), you can create an MDS viewlet.



Using the Kafka MDS viewlet's action menu, you can use the Show Roles and Manage Roles actions to view and change aspects of Role-Based Access Control (see Show Roles and Manage Roles). For example, you can assign a role to a resource type, view the principals that a role is bound to, or add or delete principals.



4.3.11.7.1Show Roles

The Show Roles action opens MDS Roles tab in the console pane.

For Role-Based Access Control, each role is displayed in a column in the console. For each role, the following information is provided:

- The Scope Type is the level at which the role is assigned: Cluster (access to all resources in a cluster) or Resource (access to specific resources).

- The allowed operations, which are divided into two rows. In both rows, you can scroll through values using the horizontal scroll bar provided.
  - The Resource Type that the operation (action) is performed on
  - The Role Operations that can be performed by users who are assigned the role

The comma-separated values in the Resource Types row correspond directly to the comma-separated values in the Role Operations row. For example, the AuditAdmin role shows Resource Types "Cluster, Cluster" and Role Operations "DescribeConfigs, AlterConfigs". These values indicate that users with this role can perform two operations on Clusters: DescribeConfigs and AlterConfigs.

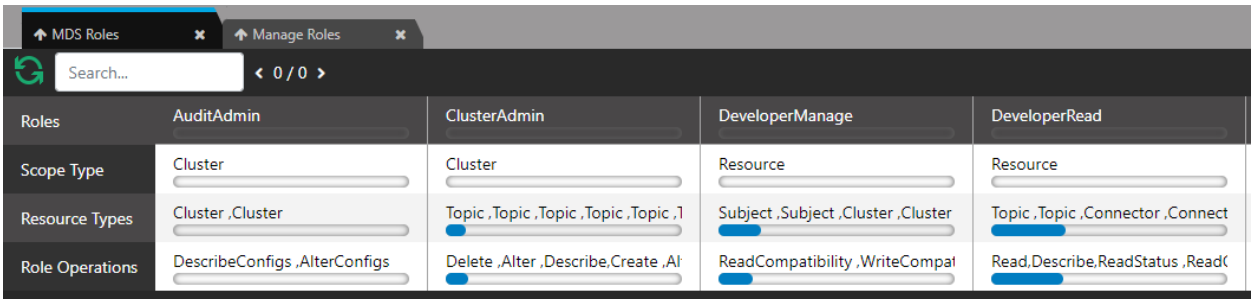


Figure 4.3.11.7.1-A. MDS Roles

4.3.11.7.2Manage Roles

Manage Roles opens the Manage Roles tab in the console pane. Use this tab to assign roles to resources. See Figure 4.3.11.7.2-A.

11. Click the resource that you want to assign a role to. The Select Role Name dialog opens. See Figure 4.3.11.7.2-B.
12. Select the Role Name that you want to assign to the resource.
13. Click Select. Details for the role that you selected are displayed, including its Attributes (Scope Type, Resource Types, and Role Operations) and the Principals it is bound to. See Figure 4.3.11.7.2-C.
14. You can choose among the following options:

    - Add a new principal for this role
    - View details for the principal (if applicable)
    - Remove the principal from the role

To add a new principal for this role, click **Add New Principal**, enter a **Principal Name**, and select its **Principal Type** (*User* or *Group*). Then click **Create**. (See Figure 4.3.11.7.2-D.) You can follow the steps below to open the new principal and view the roles that are bound to it (Principal Roles), Visible Clusters (based on the Resource you originally selected), and Principal Resources.

To view details for the principal, including Principal Roles, Visible Clusters, and Principal Resources, select a principal from the list and click **Open Principal**. See Figure 4.3.11.7.2-E.

To remove a principal from a role, select a principal for the role and click **Delete Principal**. Click **Yes** to confirm the action.

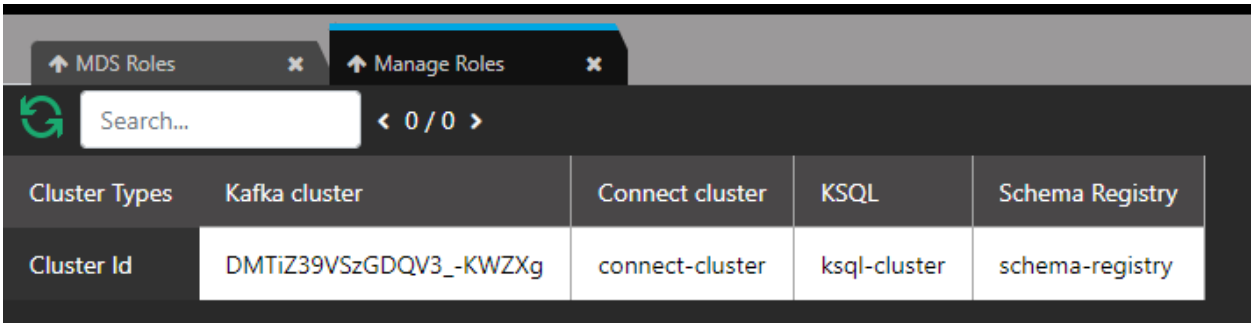


Figure 4.3.11.7.2-A. Manage Roles Tab

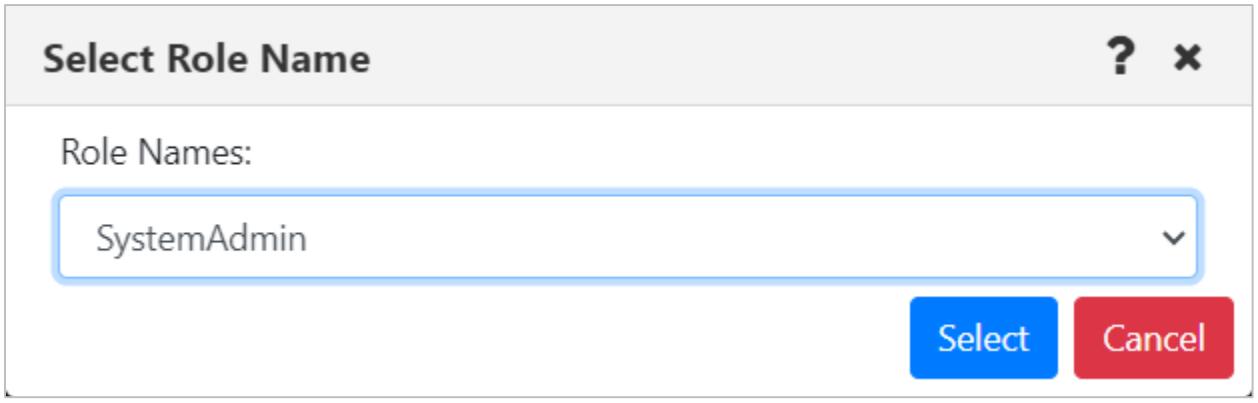


Figure 4.3.11.7.2-B. Select Role Name

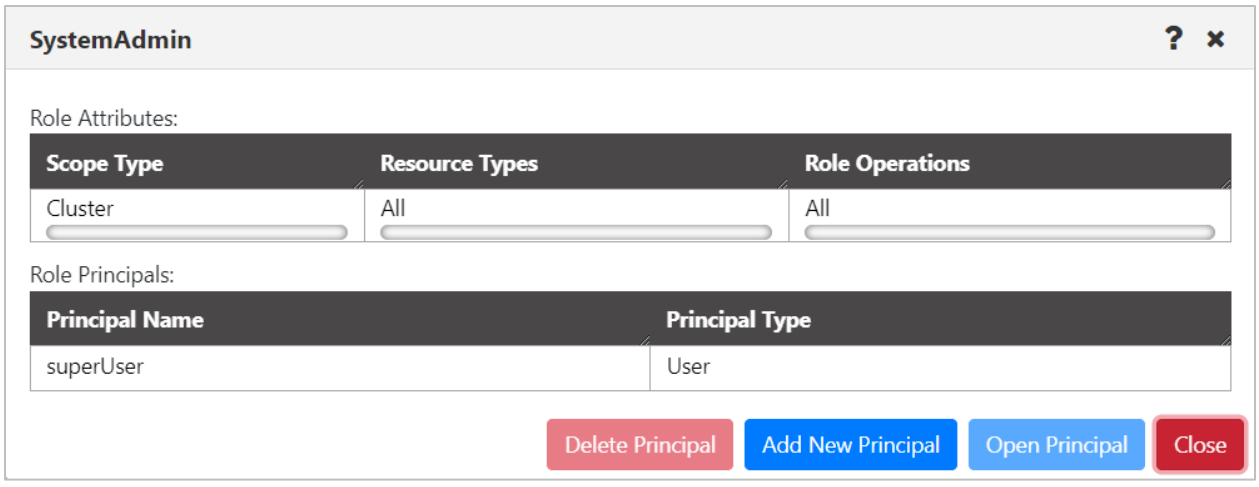


Figure 4.3.11.7.2-C. Role Details

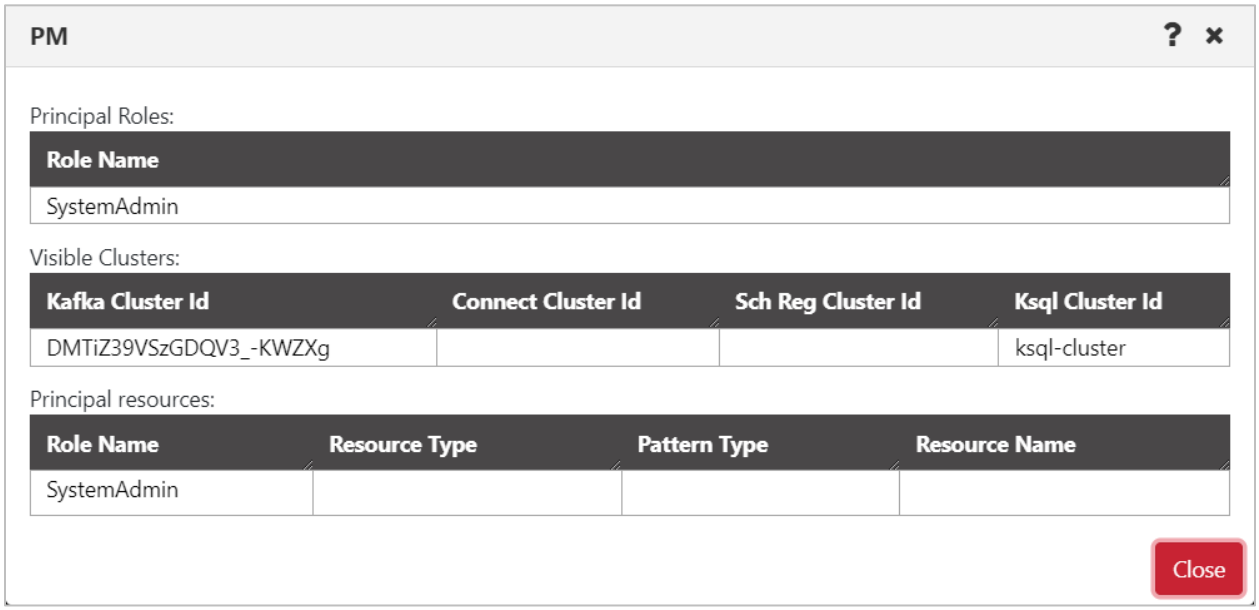


Figure 4.3.11.7.2-D. Create Principal

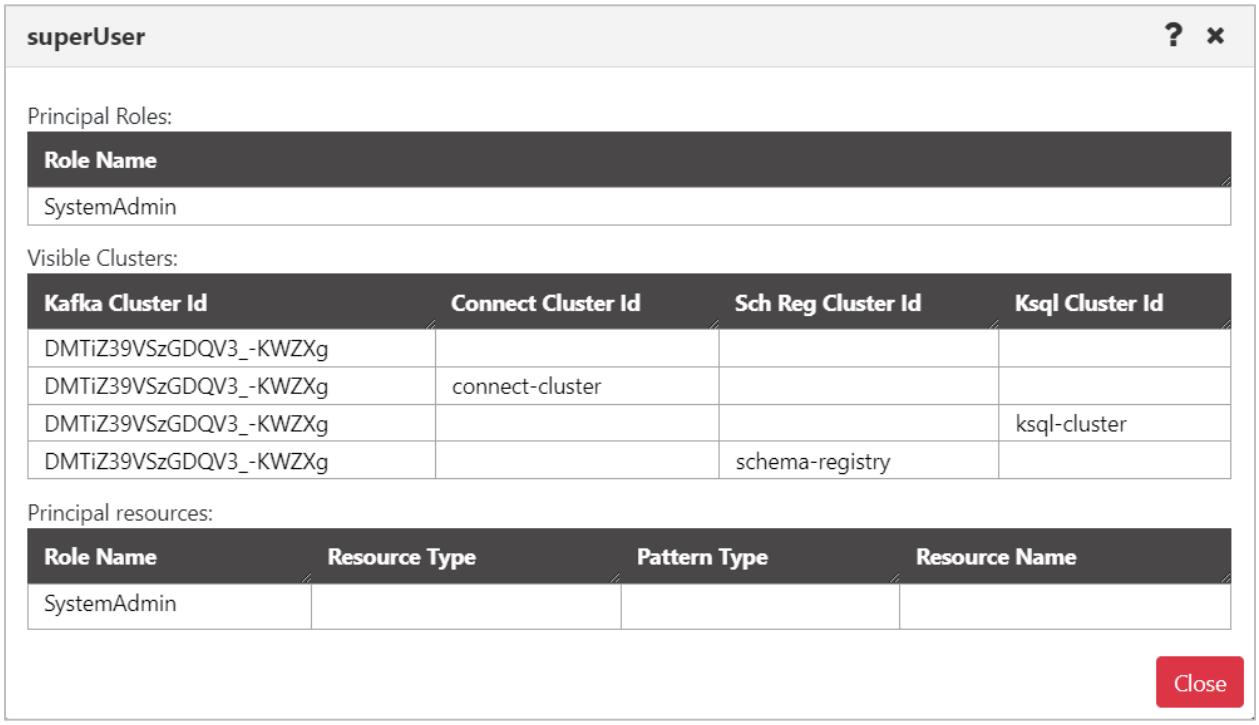


Figure 4.3.11.7.2-E. Principal Details

4.3.12 Viewing Properties of Multiple Objects

To view properties of multiple objects within a viewlet, select the objects and then click **Properties** from the action menu. The *Properties* window opens.

A blue tooltip box appears on the bottom right corner of the screen (as seen below) instructing you to hover over fields to display the values. Simply hover over any of the fields with a blue line appearing on the left side of the field box; these are the fields which contain multiple values.

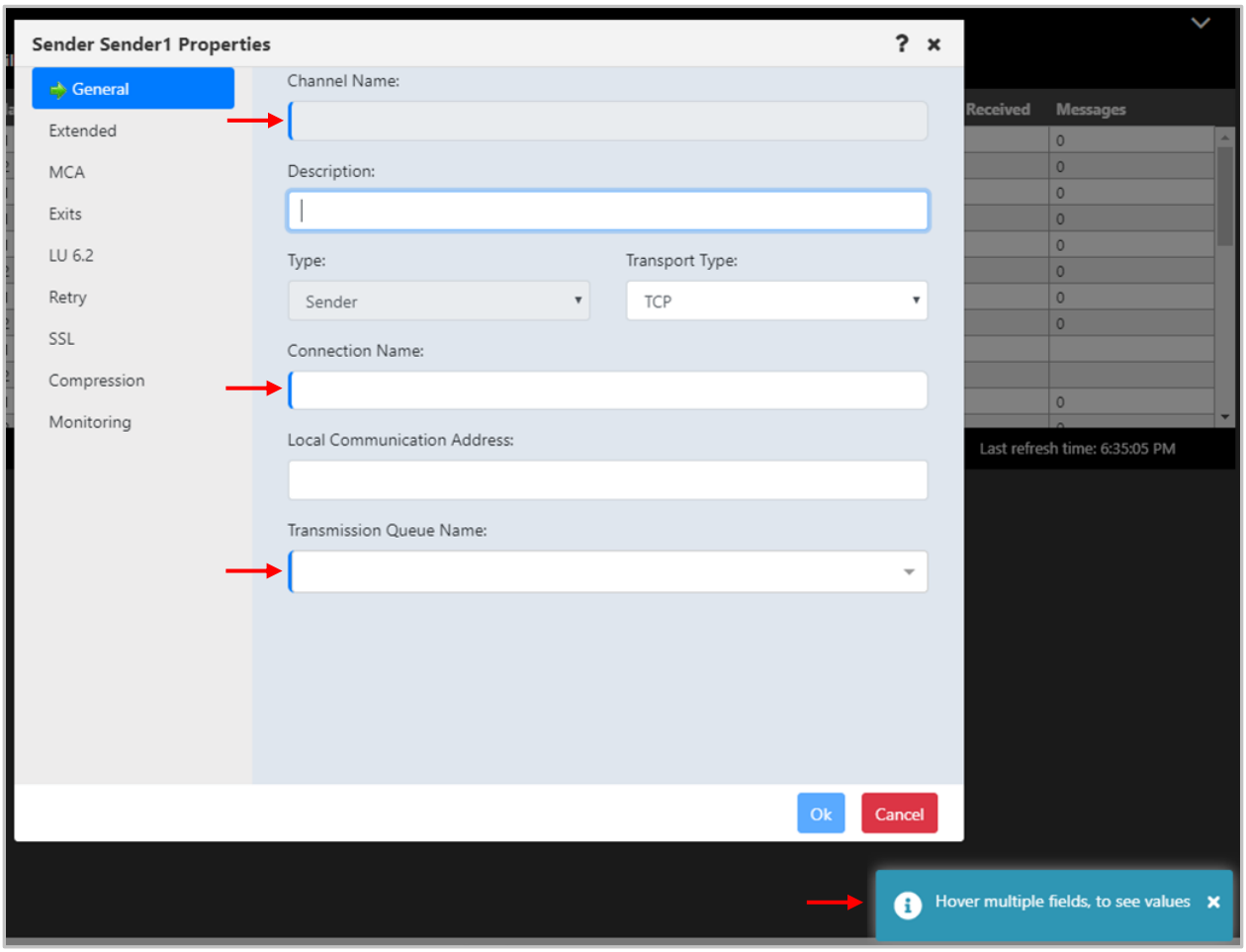


Figure 4.3.12-A. Properties of Multiple Channels

After hovering over the fields, a black box will appear displaying all of the field's values.

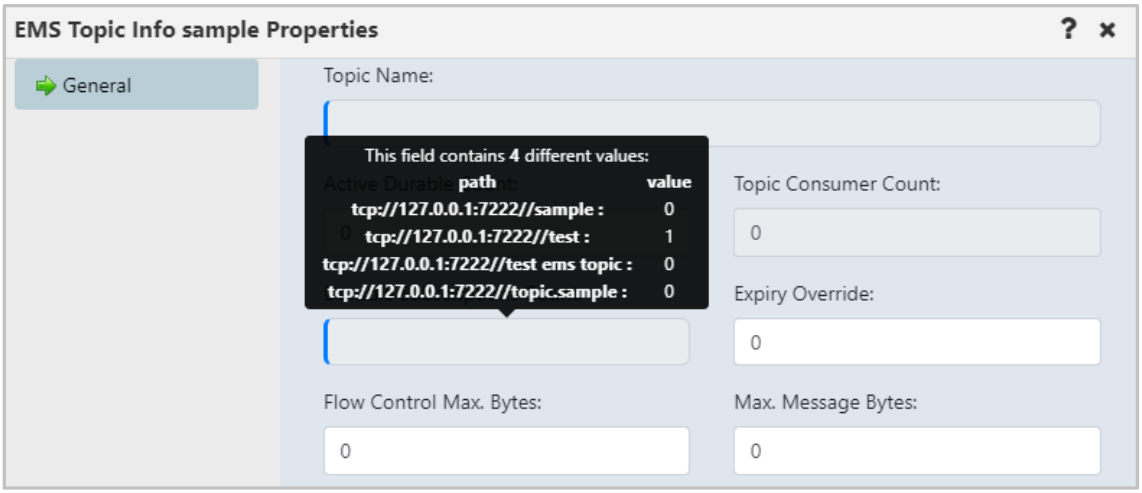


Figure 4.3.12-B. Multiple Properties Tooltip Box

4.3.13 Custom Attributes

You can add custom attribute fields to a variety of objects in meshIQ Manage. Your viewlets can be filtered and sorted by custom attributes, and multiple custom attributes can be added to each viewlet. The following objects support custom attributes:

IBM MQ	Manager, Queue, Channel, Topic
EMS	Manager, Queue, Topic
Kafka	Cluster, Broker, Topic, Schema, Schema Subject, Schema Subject Version
IIB	Broker, Server, Application, Service, Message Flow, Sub Flow
ACE	Integration Node, Server, Application, Service, Message Flow, Sub Flow
Solace	All objects

4.3.13.1 Add a New Custom Attribute

To add a custom attribute, select **Properties** from the action pop-up menu of a queue manager or queue.

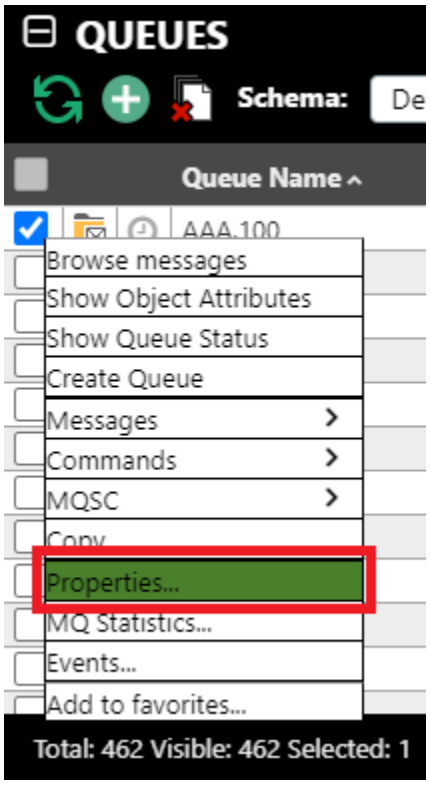


Figure 4.3.13.1-A. Properties

The *Properties* window opens. Go to the **Custom Attributes** tab and click the **Add** button.

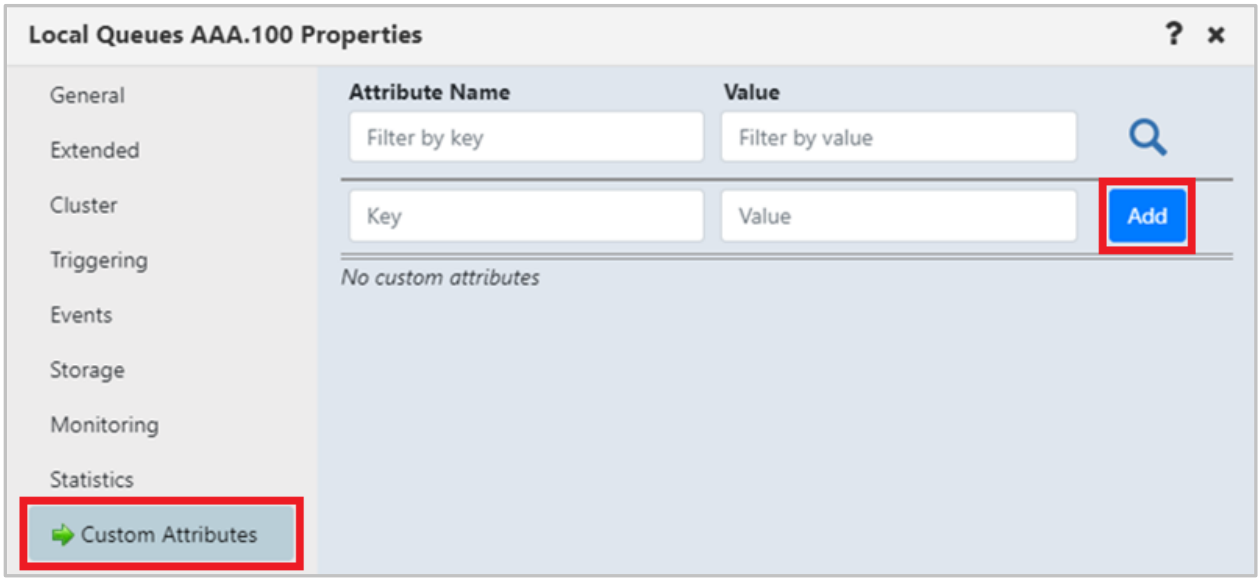


Figure 4.3.13.1-B. Custom Attributes Tab

In the **Key** field, enter the name of the attribute you are adding and its value for this object in the **Value** field.

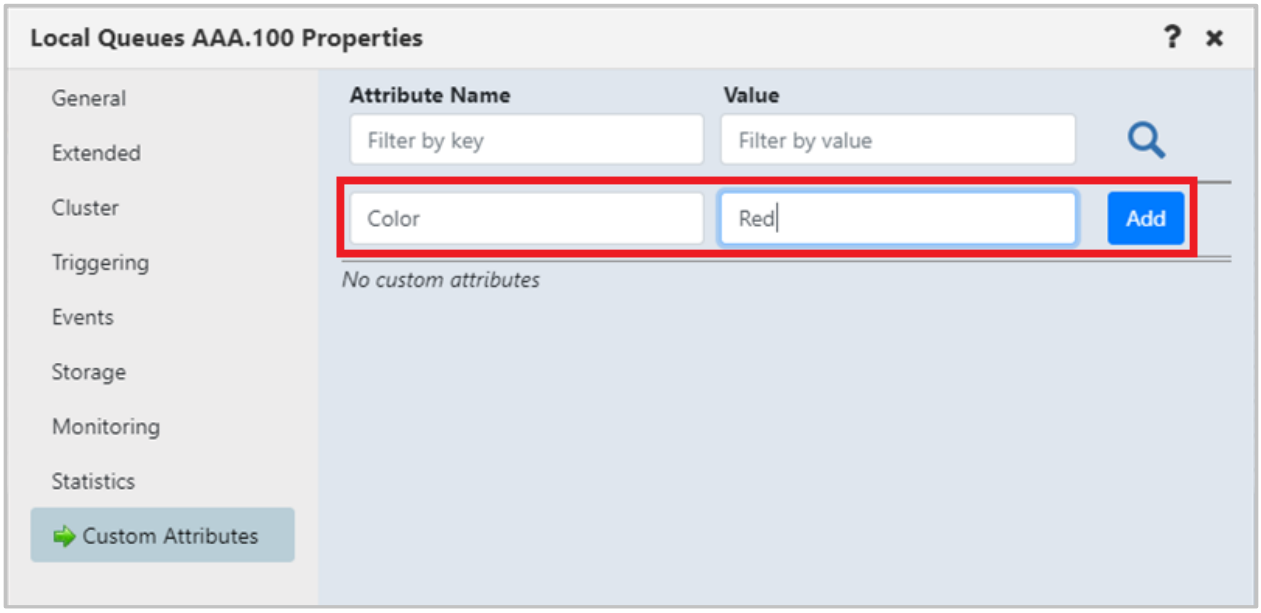


Figure 4.3.13.1-C. Add Custom Attribute

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Click the **Add** button. The custom attribute is now added to this object and will appear in a new row.

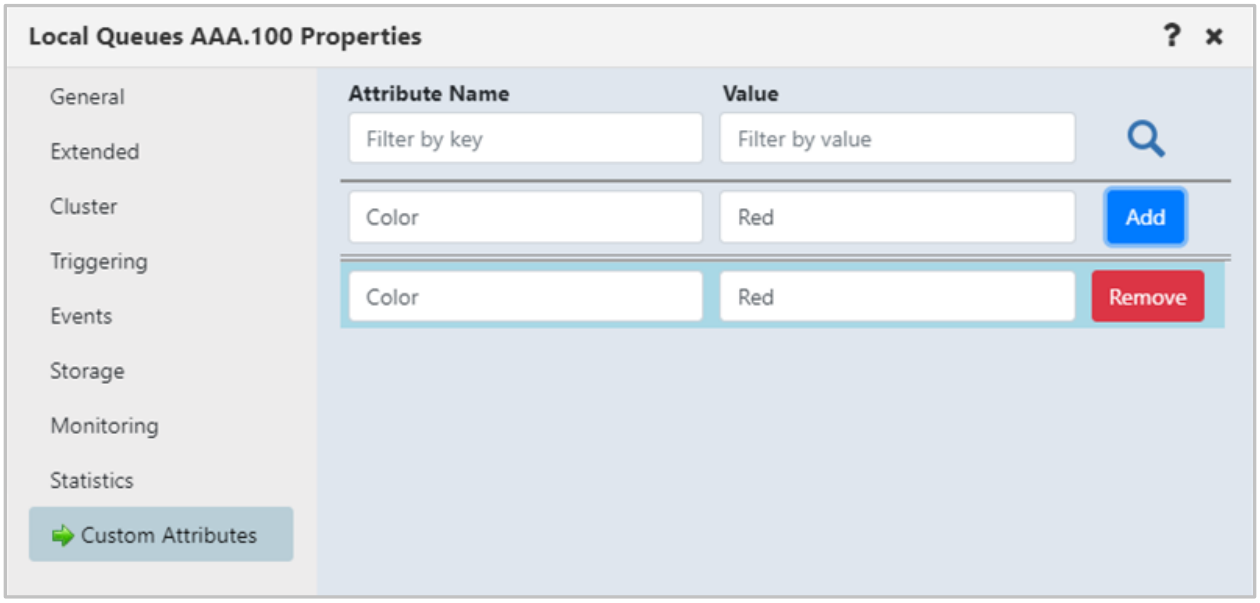

Figure 4.3.13.1-D. Custom Attribute Added

Multiple custom attributes can be added. Simply repeat the steps above to add additional attributes.

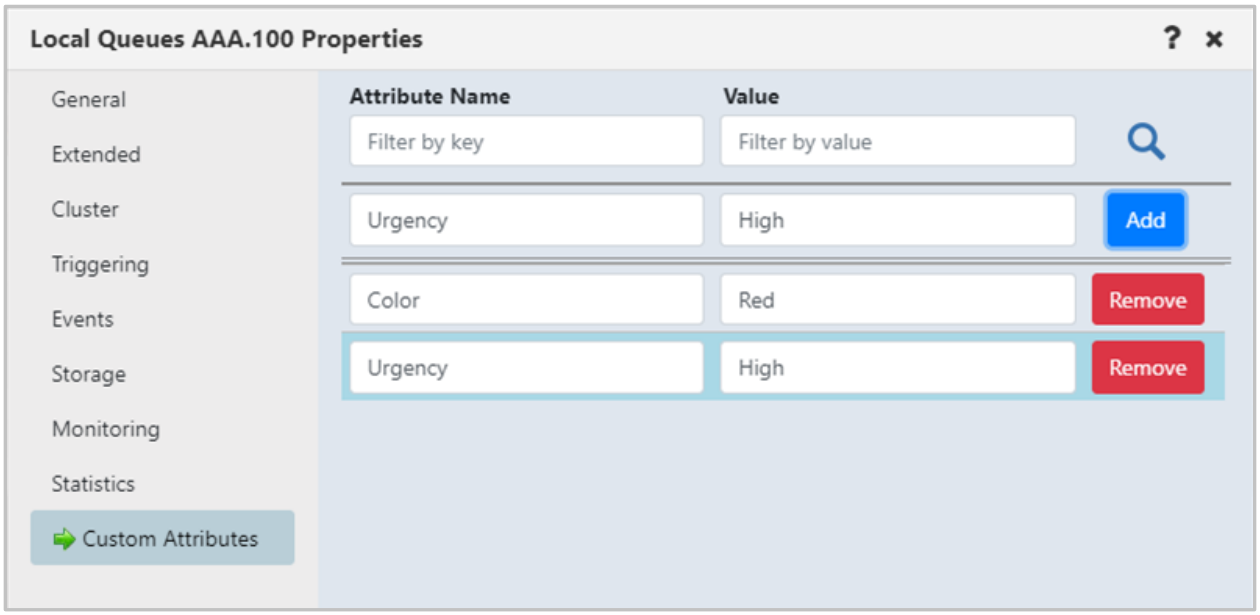

Figure 4.3.13.1-E. Adding Multiple Custom Attributes

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4.3.13.2 Display Custom Attributes

To display the custom attributes in your viewlets, you will need to add them to your viewlet's schema (see Schemas for more information). Click the **Manage Viewlet Schemas** button.

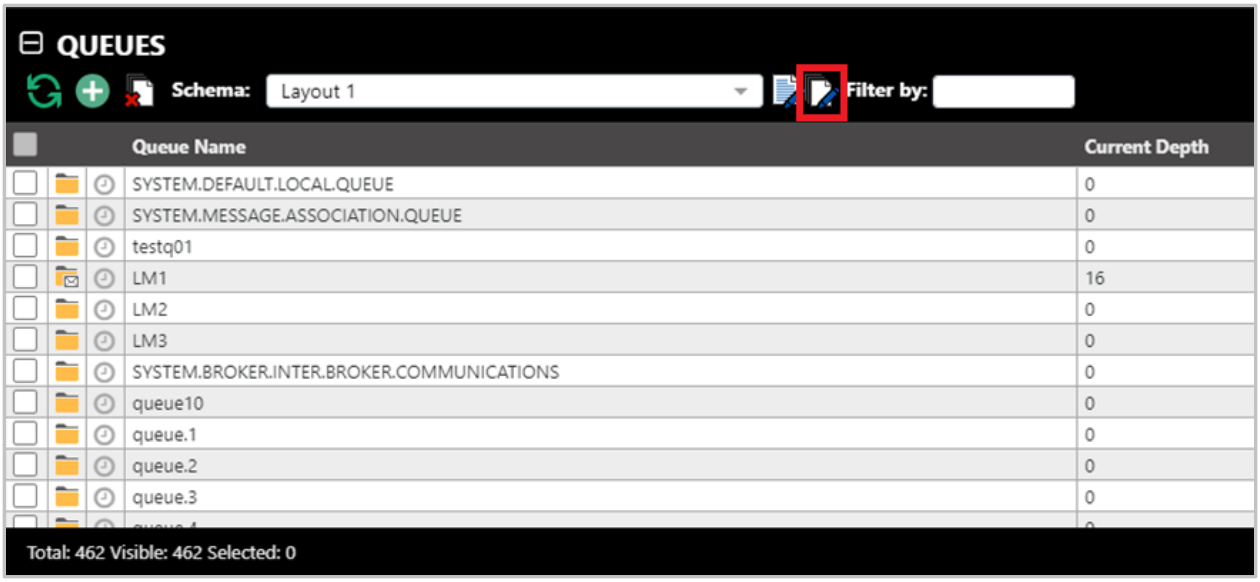

Figure 4.3.13.2-A. Manage Viewlet Schemas Button

The *Manage Schemas* screen opens. Select the desired schema and click **Edit**.

NOTE

Please note, you cannot edit the default schema. If you do not have any schemas other than the default, see *Schemas* for information on how to add a new schema.

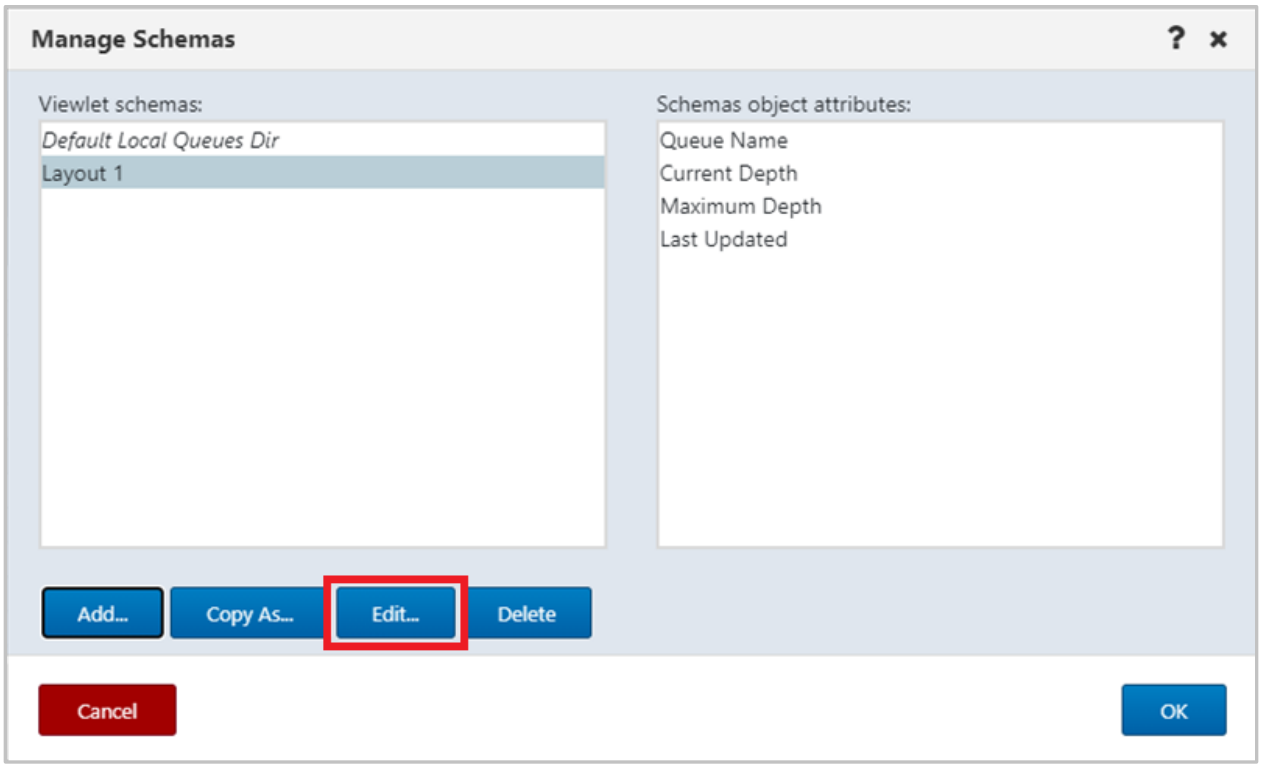

Figure 4.3.13.2-B. Edit Selected Schema

On the *Edit Schema* screen, select **Custom attributes** from the filter drop-down to display all custom attributes that exist for this viewlet. From the left side of the screen select the custom attributes you want to add to the schema and click the **Add** button (or click **Add all** to add all of the custom attributes).

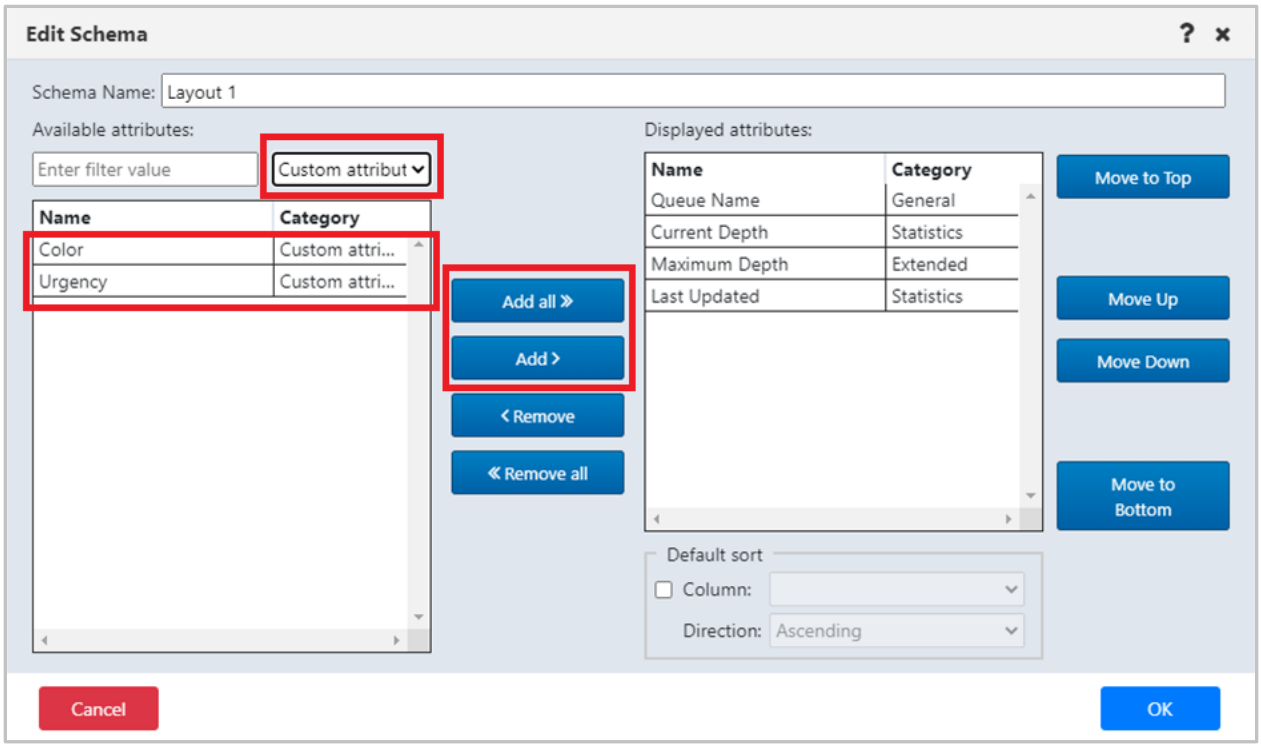

Figure 4.3.13.2-C. Edit Selected Schema

You can sort the viewlet by the custom attribute field.

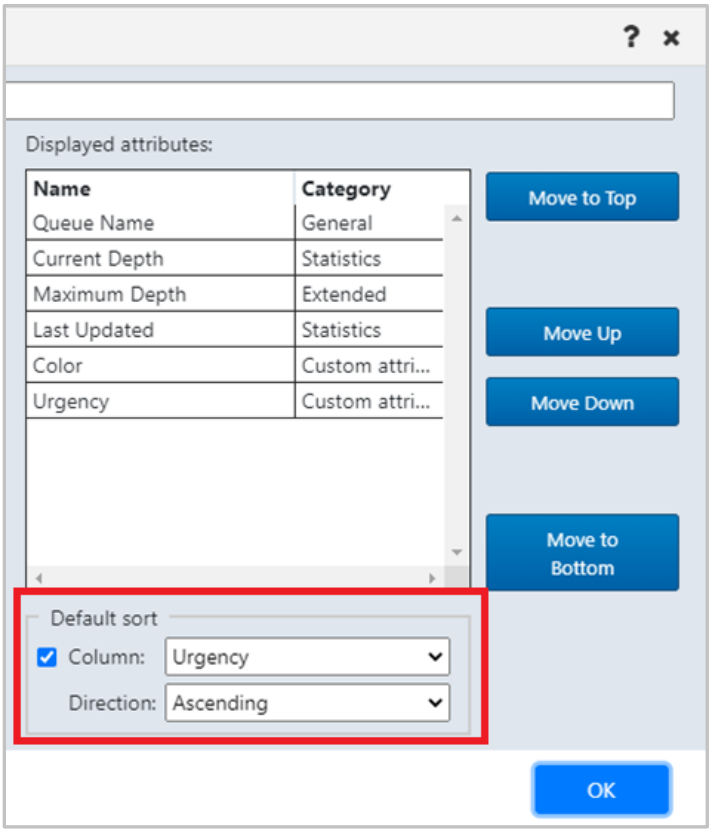

Figure 4.3.13.2-D. Default Sort

Click **OK** when finished on this screen and then on the *Manage Schemas* screen. Your viewlet will now display the custom attribute fields and their values.

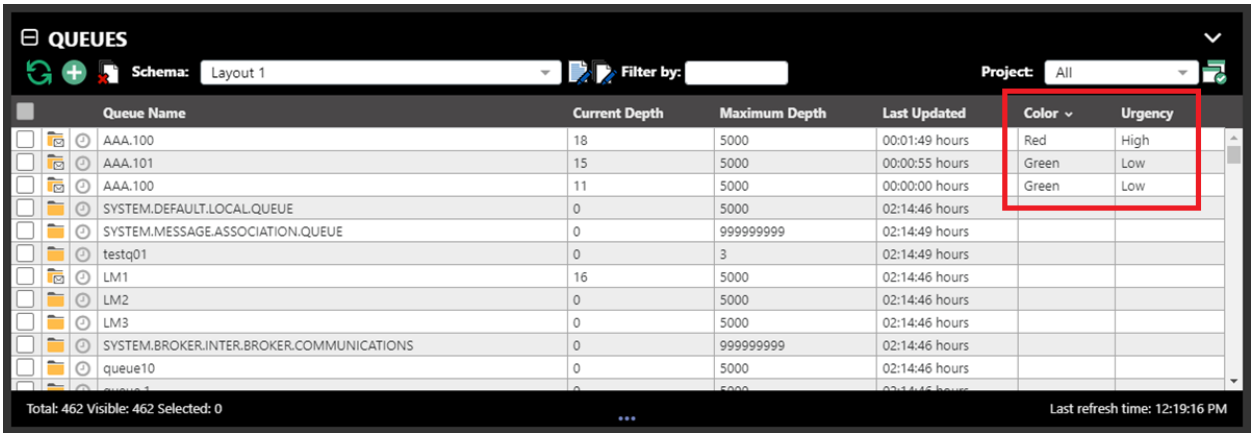

Figure 4.3.13.2-E. Custom Attributes Displayed in Viewlet

4.3.13.3 Filter by Custom Attributes

You can use the **Filter by** field located at the top of the viewlet to display only rows containing the custom attribute value entered.

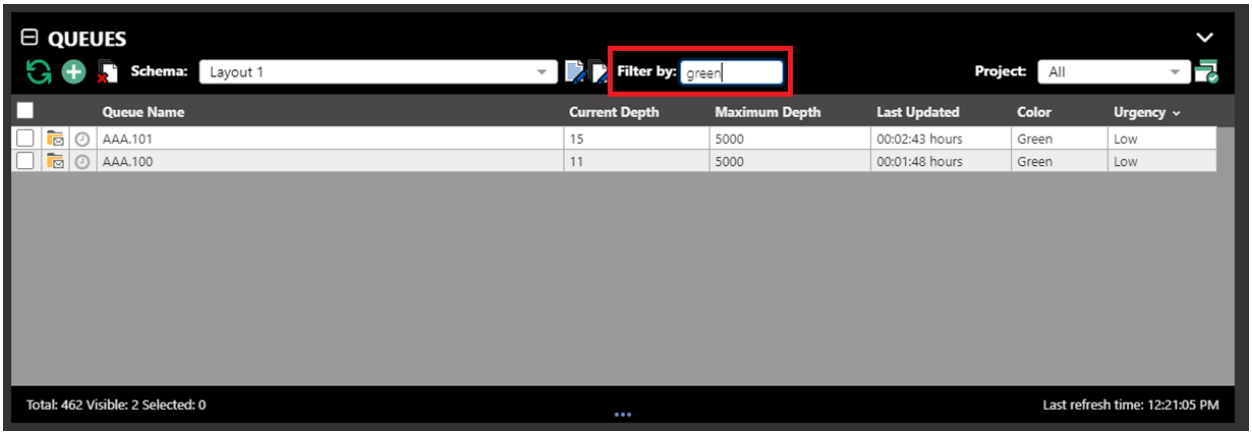

Figure 4.3.13.3-A. Filter By

You can also use custom attributes when creating new viewlets. See Attribute Filter for more information.

4.3.14 Advanced Viewlet Filtering

When the advanced viewlet filtering feature is enabled, all of the *Add/Edit Viewlet* screen filters (*Edit Viewlet*) will appear conveniently at the top of each viewlet. In the figures below, the fields in the red boxes are all viewlet filtering options. Please note that the two figures are part of the same viewlet header. The viewlet header becomes scrollable if you reduce the size of the window.

Figure 4.3.14-A. Advanced Viewlet Filtering Options

Figure 4.3.14-B. Advanced Viewlet Filtering Options (cont.)

This feature allows users to quickly apply filters right from the viewlet instead of having to open the *Edit Viewlet* screen.

4.3.14.1 Setup

To enable quick access to advanced filtering features for all viewlets, turn on the **Show advanced viewlet filtering** option on the **User Settings** tab of the *User/Global Settings* window.

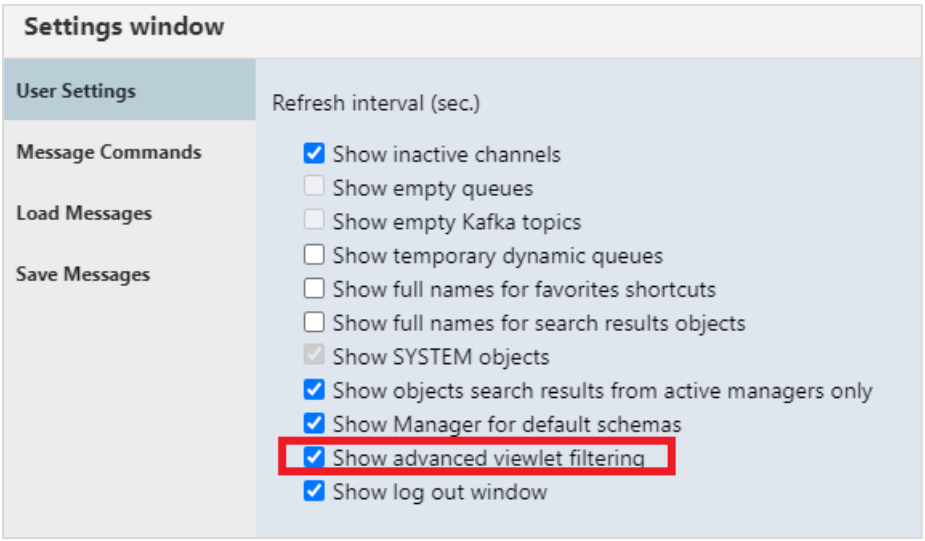

Figure 4.3.14.1-A. Setting

Note that when this option is enabled, the **Show empty queues**, **Show empty Kafka topics** and **Show SYSTEM objects** options are automatically disabled because these options are included in the advanced viewlet filtering options.

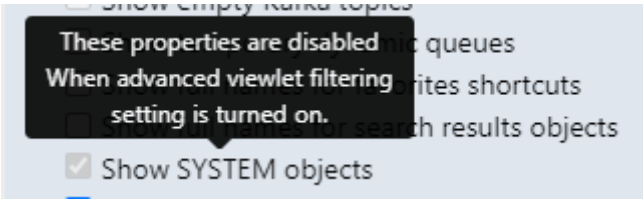

Figure 4.3.14.1-B. Disabled Settings

4.3.14.2 Use

NOTE

The advanced filtering options cannot be used with viewlets that display server-generated nodes, workgroup servers, or external resources.

After the option above is enabled, you will see the new menu options located at the top of each viewlet where you can select/input the following properties:

- Criteria (box #1 in Figure 4.3.14.2-C below)
    - Node
    - Queue manager/cluster
    - Object

- Object type.

> NOTE
>
> In versions 10.4 and later, the fixed limit of 1000 results for each queue type no longer applies. Instead, the number of objects returned is controlled by the Result Limit, which applies to each type of object (for queues: local, remote, model, alias, and cluster; for channels: MQ channels, AMQP, MQTT, and client connections). See the Result Limit definition under the Results bullet below for more information.

- Filters (box #2 in Figure 4.3.14.2-C below)
  - Attribute: enable or disable the attribute filtering setting. You can click on the ellipses button immediately to the right of the checkbox to open the *Attribute filters* window where you can edit, add, delete, or copy filters. See *Attribute Filter* for more information. If attribute filtering needs to be removed, simply select the **No filter** option.

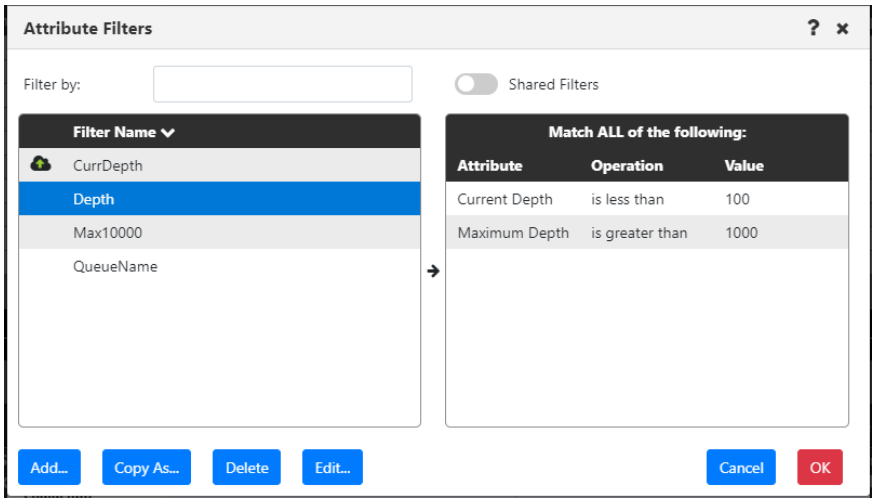

Figure 4.3.14.2-A. Attribute Filters

You can hover over the Attribute filter to view the selected filter in a tool tip. If no filter is selected, then "No filter selected" will be displayed.

Figure 4.3.14.2-B. Selected Filter Tool Tip

  - Message: enable or disable the **Find Messages** setting
  - Empty: enable or disable the **Show empty queues/topics** setting
  - System – enable or disable the **Show system objects** setting
- Results (box #3 in figure below)
  - Result limit: The maximum number of results that can be displayed in a viewlet. For new viewlets, the default value is defined by the global or user

Result Limit setting. For queue and channel viewlets, this limit is per queue type and per channel type, as described above in the Object type bullet. (The "total" (or maximum) number of items that can be returned is the Result Limit multiplied by the number of object types.)

- In versions 10.5 and later, attribute filters are applied by the workgroup server before results are returned. If you consistently notice that the number of records in your viewlets matches the Result Limit (in versions 11 and later, the Total/Visible/Selected labels are orange in this case), then either adjust the Result Limit or consider fine-tuning the viewlet's attribute filters to return a more relevant set of results from the workgroup server.

Figure 4.3.14.2-C. Advanced Filtering Options

The *Criteria* and *Filters* options (box 1 and 2 above) are available depending on the viewlet's object type. For example, if a viewlet's object type is IBM channels, all criteria options and only **Attribute** and **System** filters will be displayed. For a node viewlet, only the **Node** criteria option and **Attribute** checkbox in the *Filters* group will be displayed.

4.3.15 IIB Viewlets

4.3.15.1 Connect to IIB Server

To connect an IIB server, you will need to add a node as type **ACE/IIB Agent-managed Node**.

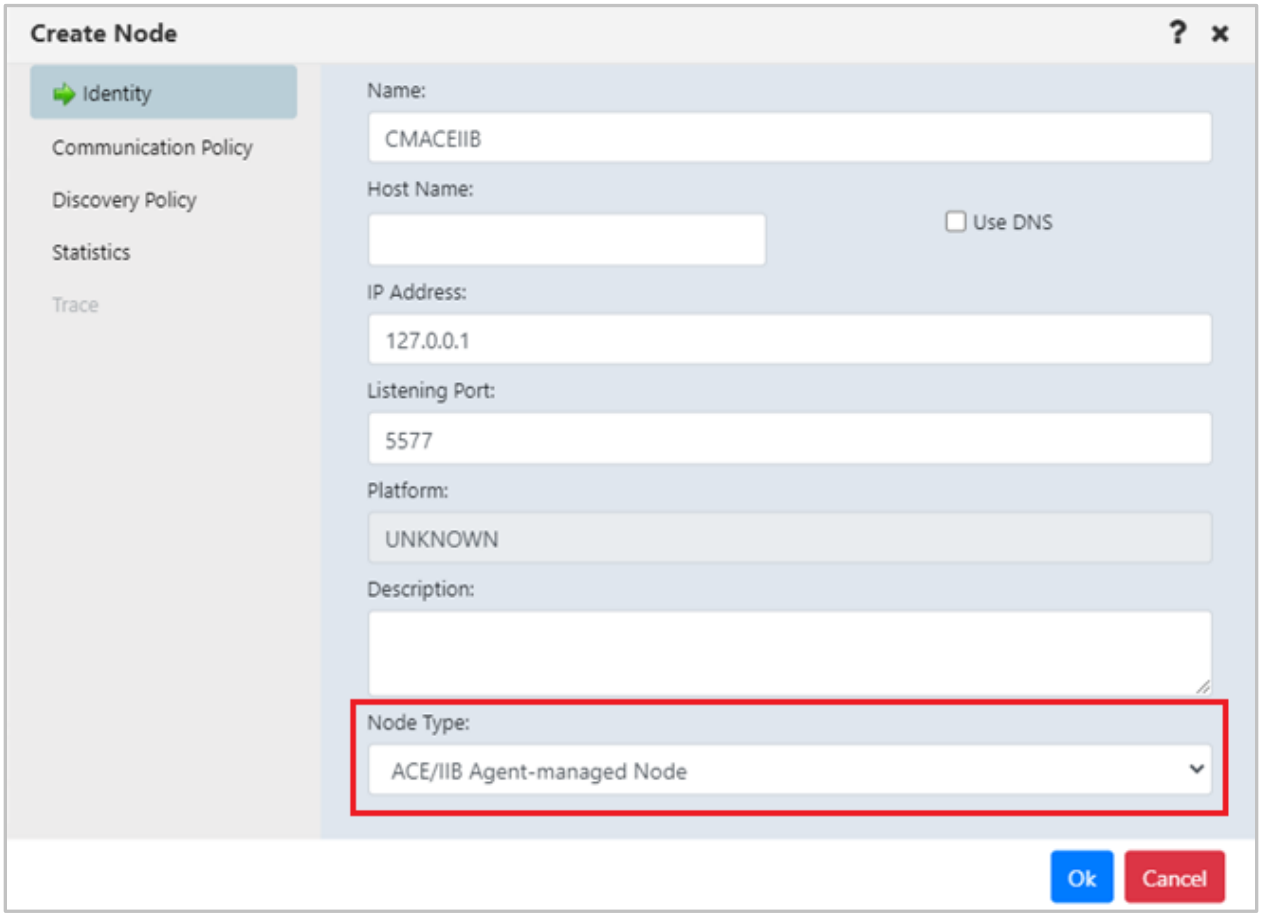

Figure 4.3.15.1-A. Create Node

Create a viewlet as you normally would (see *Adding and Maintaining Viewlets*). For **Product**, select **IIB**.

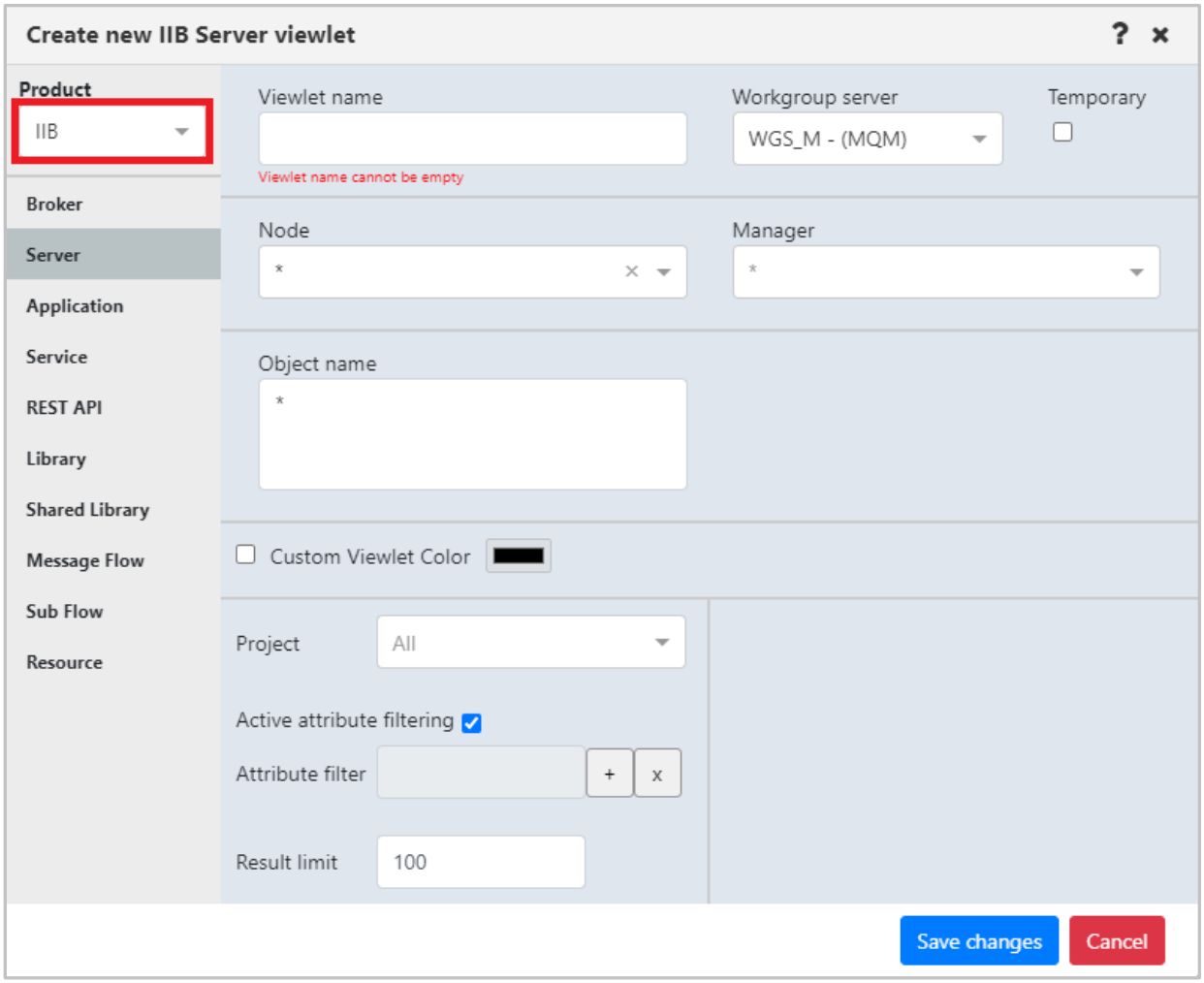

Figure 4.3.15.1-B. Select IIB Product Type

4.3.15.2 IIB Viewlet Types

The below viewlets are the IIB viewlet types you can create. See *Appendix C* for menu options.

Broker Viewlets: display IIB Integration brokers (nodes)

Figure 4.3.15.2-A. IIB Broker Viewlets

Server Viewlets: display IIB integration servers

Figure 4.3.15.2-B. IIB Server Viewlets

Application Viewlets: display IIB deployed applications

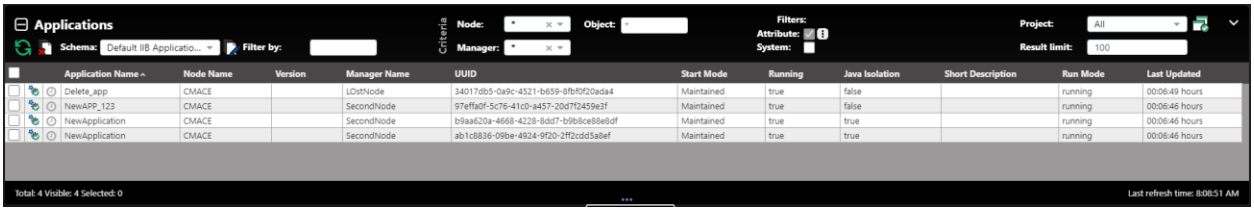

Figure 4.3.15.2-C. IIB Application Viewlets

Services Viewlets: display IIB deployed services

Figure 4.3.15.2-D. IIB Services Viewlets

REST API Viewlets: display deployed IIB Rest APIs

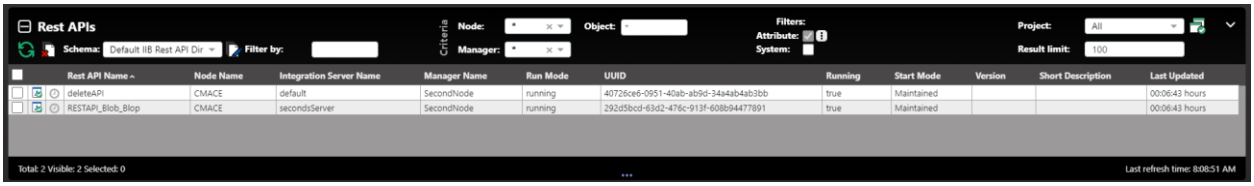

Figure 4.3.15.2-E. IIB REST API Viewlets

Library Viewlets: display deployed IIB Libraries

Figure 4.3.15.2-F. IIB Library Viewlets

Shared Libraries viewlets: display deployed IIB Shared libraries

Figure 4.3.15.2-G. IIB Shared Libraries Viewlets

Message Flow Viewlets: display deployed IIB Message flows

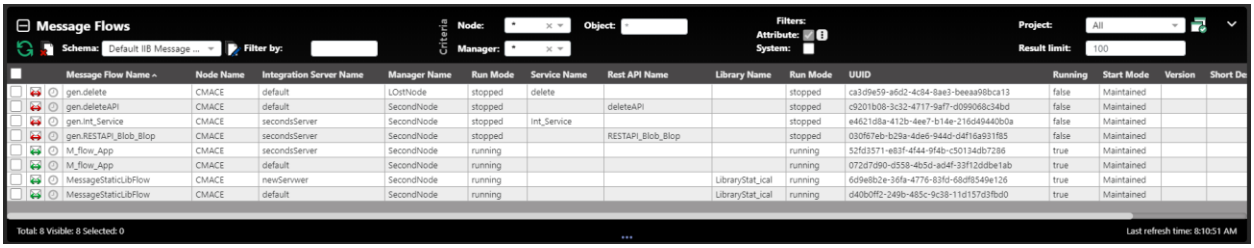

Figure 4.3.15.2-H. IIB Message Flow Viewlets

Sub Flows viewlets: display IIB deployed sub flows

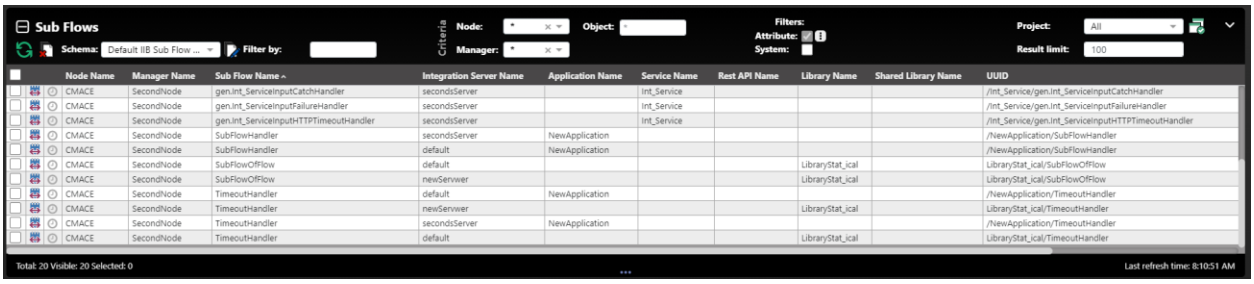

Figure 4.3.15.2-I. IIB Sub Flows Viewlets

Resource viewlets: display IIB resources

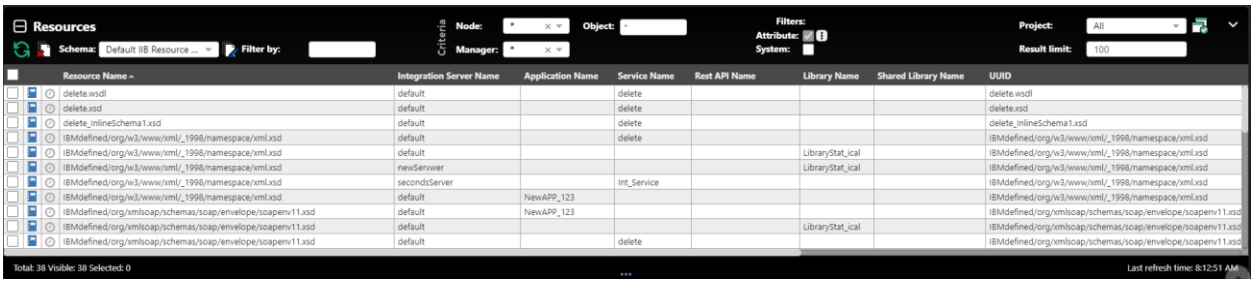

Figure 4.3.15.2-J. IIB Resource Viewlets

NOTE

After IIB commands are completed, the viewlet may require you to select **Force update** from the action pop-up menu of each object to view the updates quickly.

4.3.15.3 IIB Broker Admin Logs

Load all IIB broker logs by selecting **Admin logs** from the action pop-up menu of a broker.

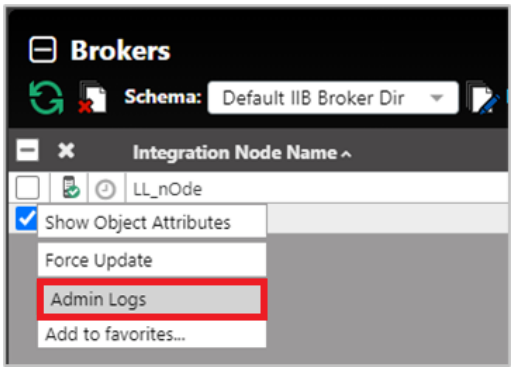

Figure 4.3.15.3-A. Select Broker > Admin Logs

The Bip number, timestamp, source, and message are displayed for each log. You can filter the results using these columns by typing a value in the box immediately below the column header. To clear a filter, you can either backspace the text or click on the button.

Figure 4.3.15.3-B. IIB Broker Admin Logs for Two Brokers

Broker admin logs can be loaded for multiple brokers, as seen in the figure immediately above. Additional brokers appear on separate tabs.

4.3.15.4 IIB Server Deploy Function

You can deploy content on servers using a bar file. Select **Deploy** from the action pop-up menu of a server.

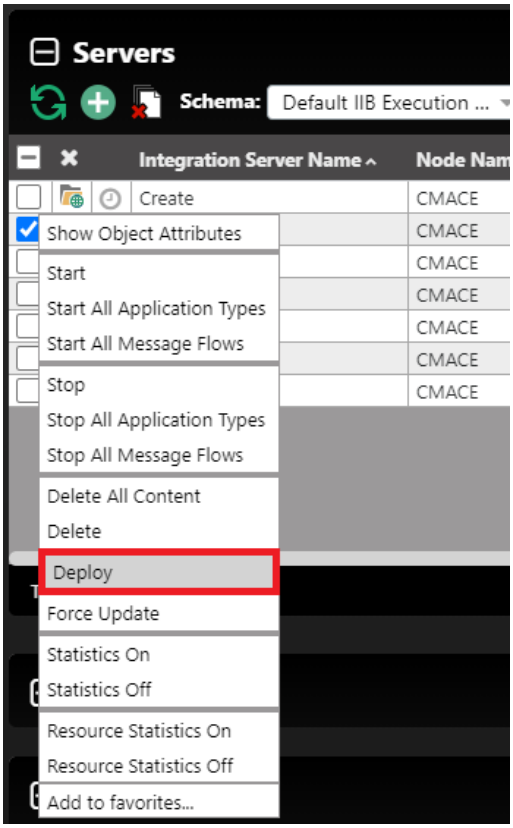

Figure 4.3.15.4-A. Select Server > Deploy

A window similar to the below appears. Click **Choose File** to select the import file. When the file is finished loading the **Deploy** button becomes available and *Loaded* is displayed. Click the **Deploy** button to import the file.

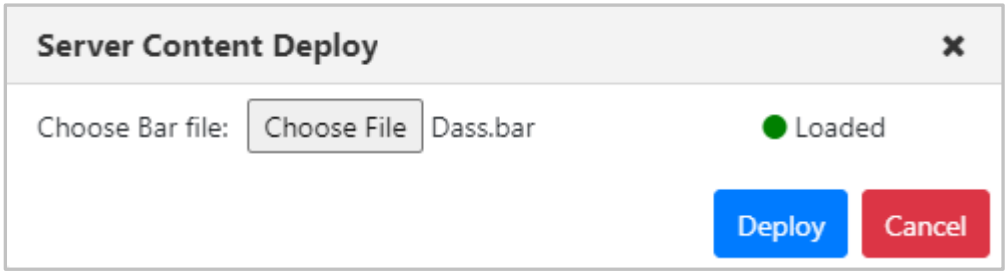

Figure 4.3.15.4-B. Server Content Deploy Window

When the file is finished being imported, it is recommended to refresh/discover the node.

4.3.15.5 IIB Message Flow Activity Logs

Load all IIB message flow activity logs by selecting **Activity Logs** from the action pop-up menu of a message flow object.

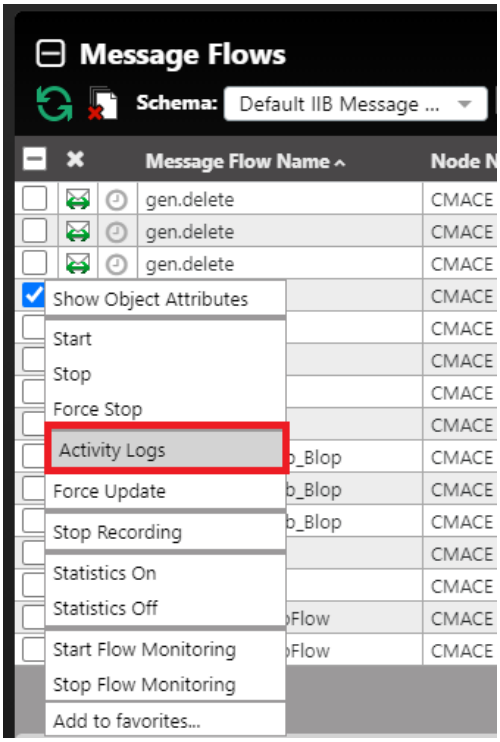

Figure 4.3.15.5-A. Select Message Flow > Activity Logs

The Bip Number, Timestamp, Tag, Tag Name, Source, Thread Id, Thread Sequence No., Message and Detailed Message are displayed for each log. You can filter the results using

these columns by typing a value in the box immediately below the column header. To clear a filter, you can either backspace the text or click on the button.

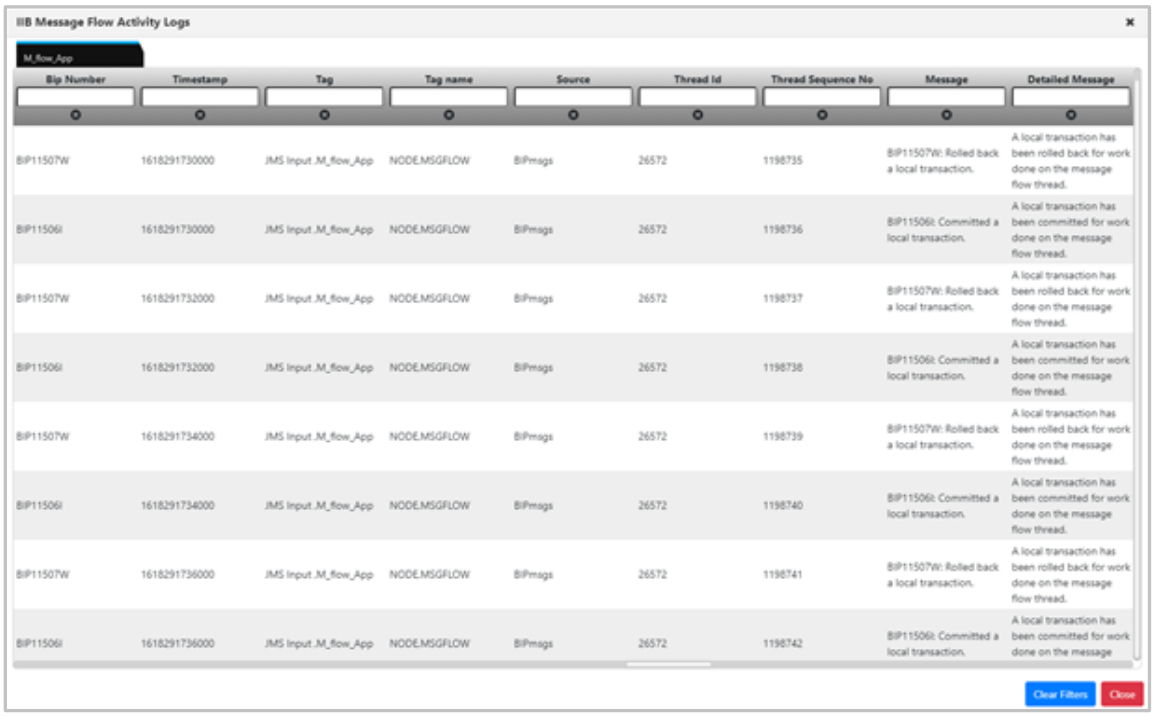

Figure 4.3.15.5-B. Message Flow Activity Logs

You can view activity logs for multiple message flows on separate tabs.

4.3.15.6 Delete IIB Message Flows, Sub Flows, and Resources

NOTE

You can only delete Message Flows, Sub Flows, and Resources that have been created directly on the server.

To delete an IIB Message Flow, Sub Flow, or Resource, click **Delete** on the object's action menu.

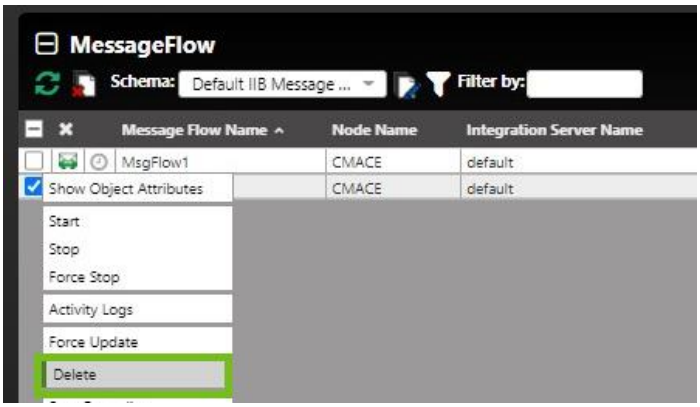

Figure 4.13.15.6-A. Delete IIB Message Flows

4.3.16 ACE Viewlets

4.3.16.1 Connect to ACE Server

To connect an ACE server, you will need to add a node as type **ACE/IIB Agent-managed Node**.

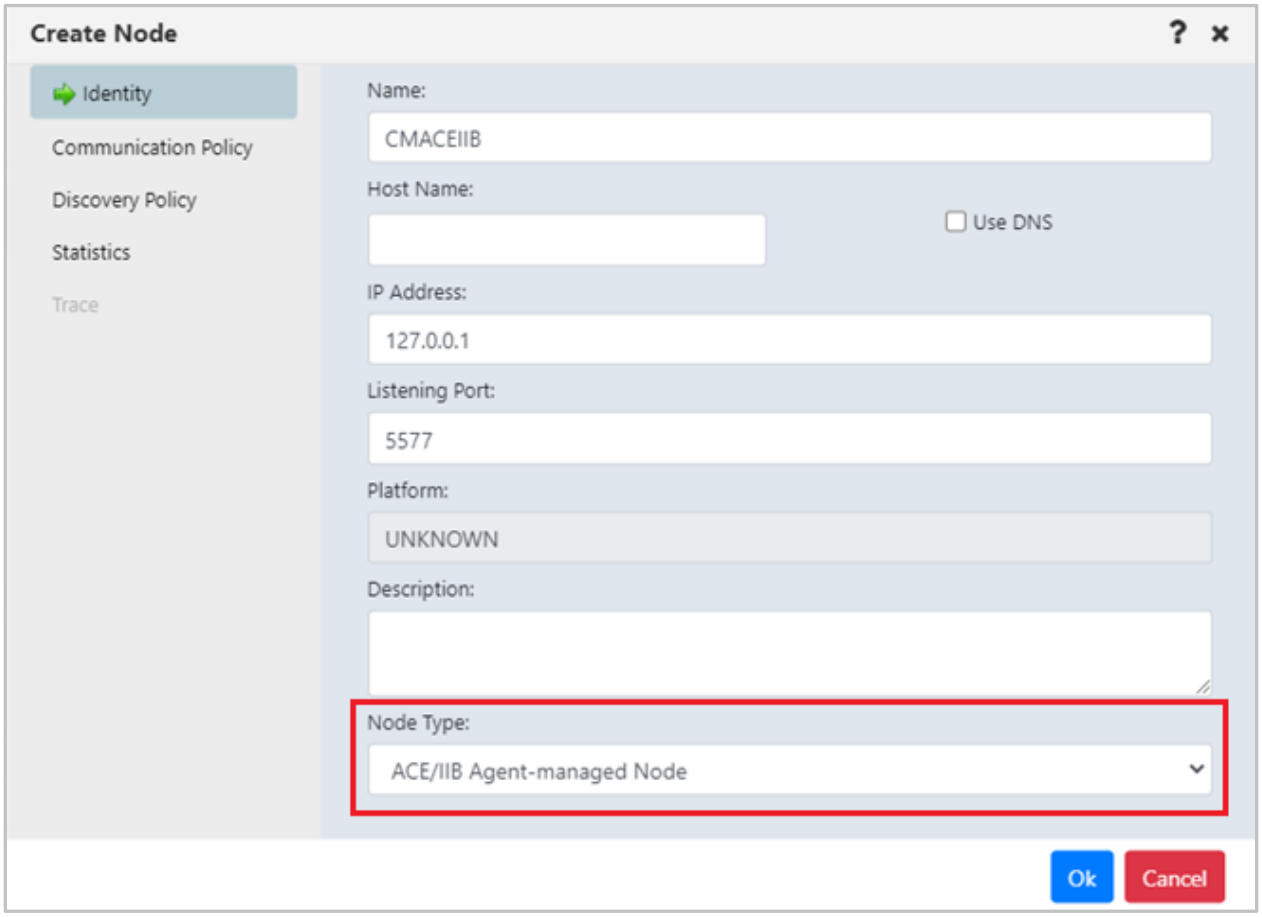

Figure 4.3.16.1-A. Create Node

Create a viewlet as you normally would (see section *Adding and Maintaining Viewlets*). For **Product**, select **ACE**.

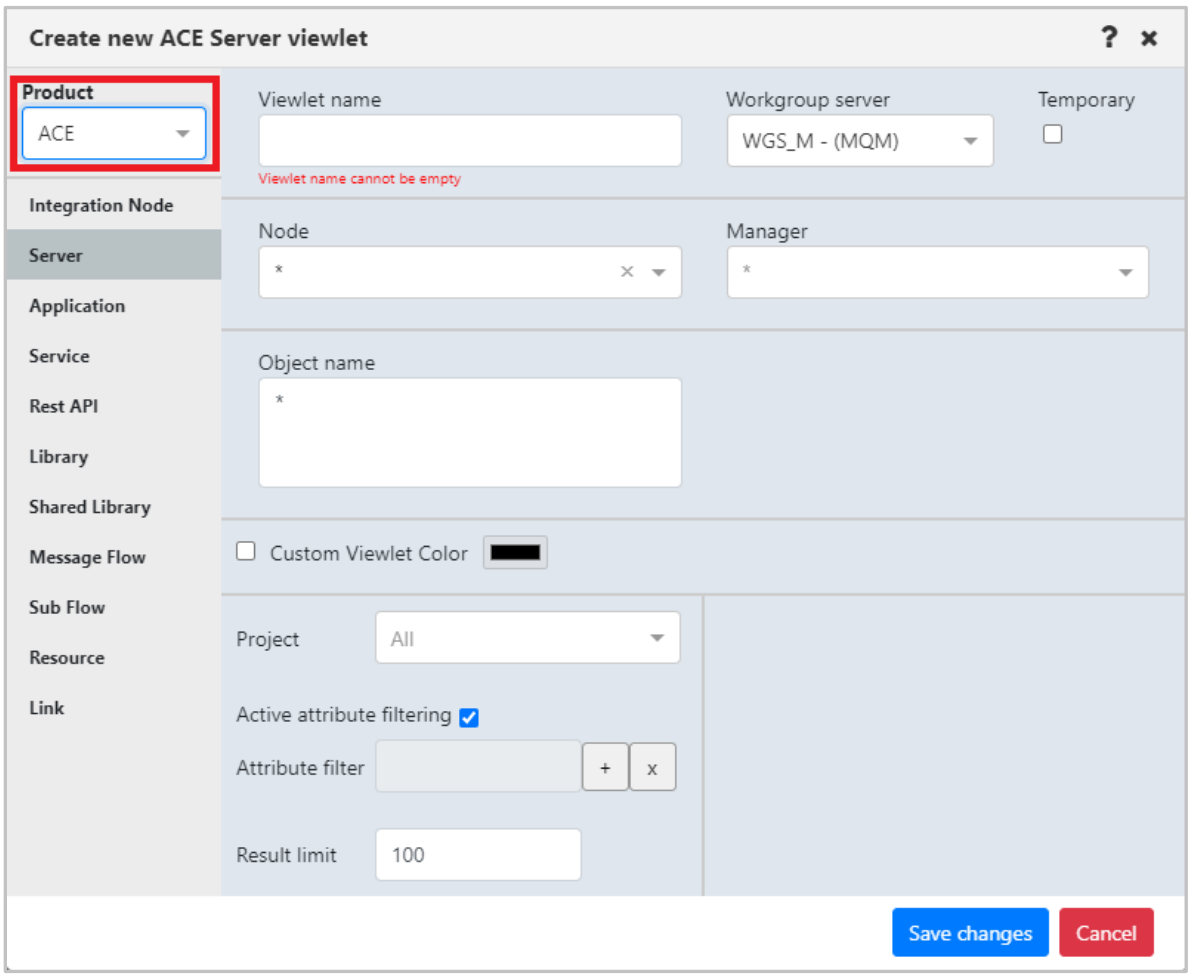

Figure 4.3.16.1-B. Select ACE Product Type

4.3.16.2 ACE Viewlet Types

The below viewlets are the ACE viewlet types you can create. See *Appendix C* for menu options.

Integration Node viewlets: Display ACE Integration Nodes

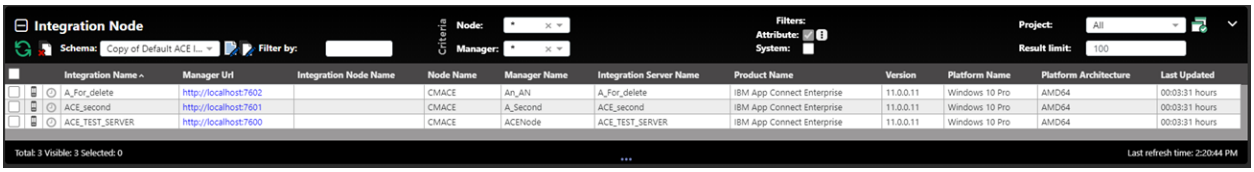

Figure 4.3.16.2-A. ACE Integration Node Viewlets

Server viewlets: Display ACE Integration Servers

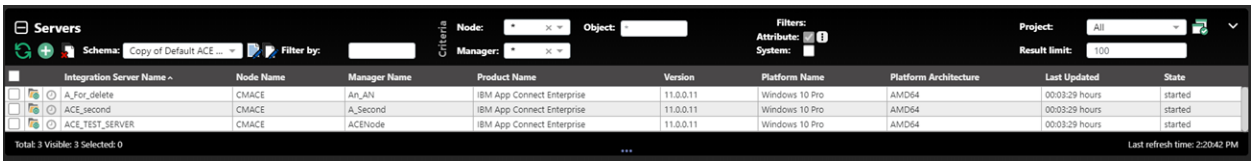

Figure 4.3.16.2-B. ACE Server Viewlets

Application viewlets: Display ACE Deployed Applications

Figure 4.3.16.2-C. ACE Application Viewlets

Services viewlets: Display ACE deployed Services

Figure 4.3.16.2-D. ACE Services Viewlets

REST API viewlets: Display deployed ACE Rest APIs

Figure 4.3.16.2-E. ACE REST API Viewlets

Library viewlets: Display deployed ACE Libraries

Figure 4.3.16.2-F. ACE Library Viewlets

Shared Libraries viewlets: Display deployed ACE Shared libraries

Figure 4.3.16.2-G. ACE Shared Library Viewlets

Message Flow viewlets: Display deployed ACE Message flows

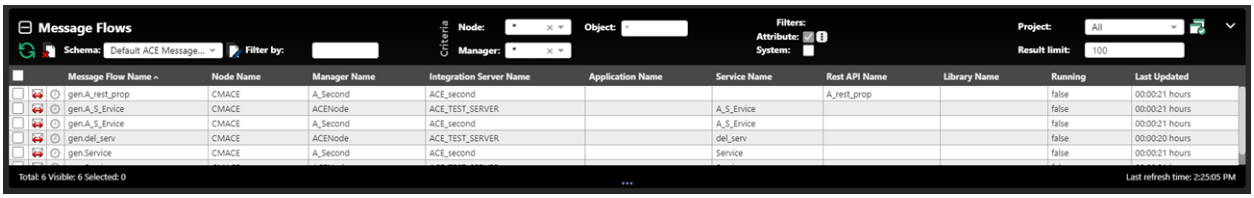

Figure 4.3.16.2-H. ACE Message Flow Viewlets

Sub Flow viewlets: Display ACE deployed sub flows

Figure 4.3.16.2-I. ACE Sub Flows Viewlets

Resource viewlets: Display ACE resources

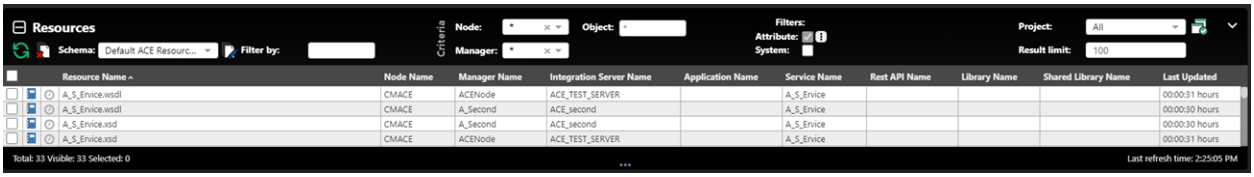

Figure 4.3.16.2-J. ACE Resource Viewlets

Link viewlets: Display ACE links

Figure 4.3.16.2-K. ACE Link Viewlets

4.3.16.3 ACE Integration Node Admin Logs

Load all ACE integration node admin logs by selecting **Admin logs** from the action pop-up menu of an integration node.

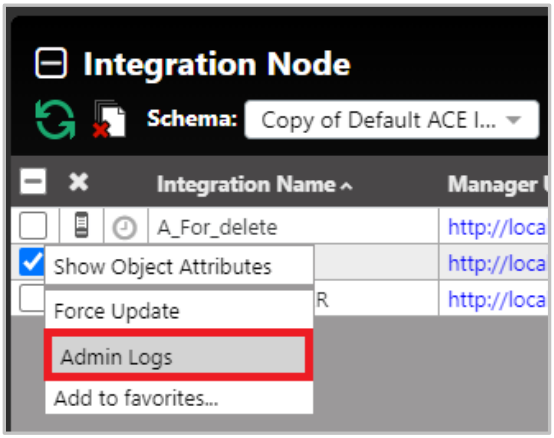

Figure 4.3.16.3-A. Select Integration Node > Admin Logs

The BIP number, timestamp, tag, tag name, source, message, and detailed message are displayed for each log. You can filter the results using these columns by typing a value in the box immediately below the column header. To clear a filter, you can either backspace the text or click on the button.

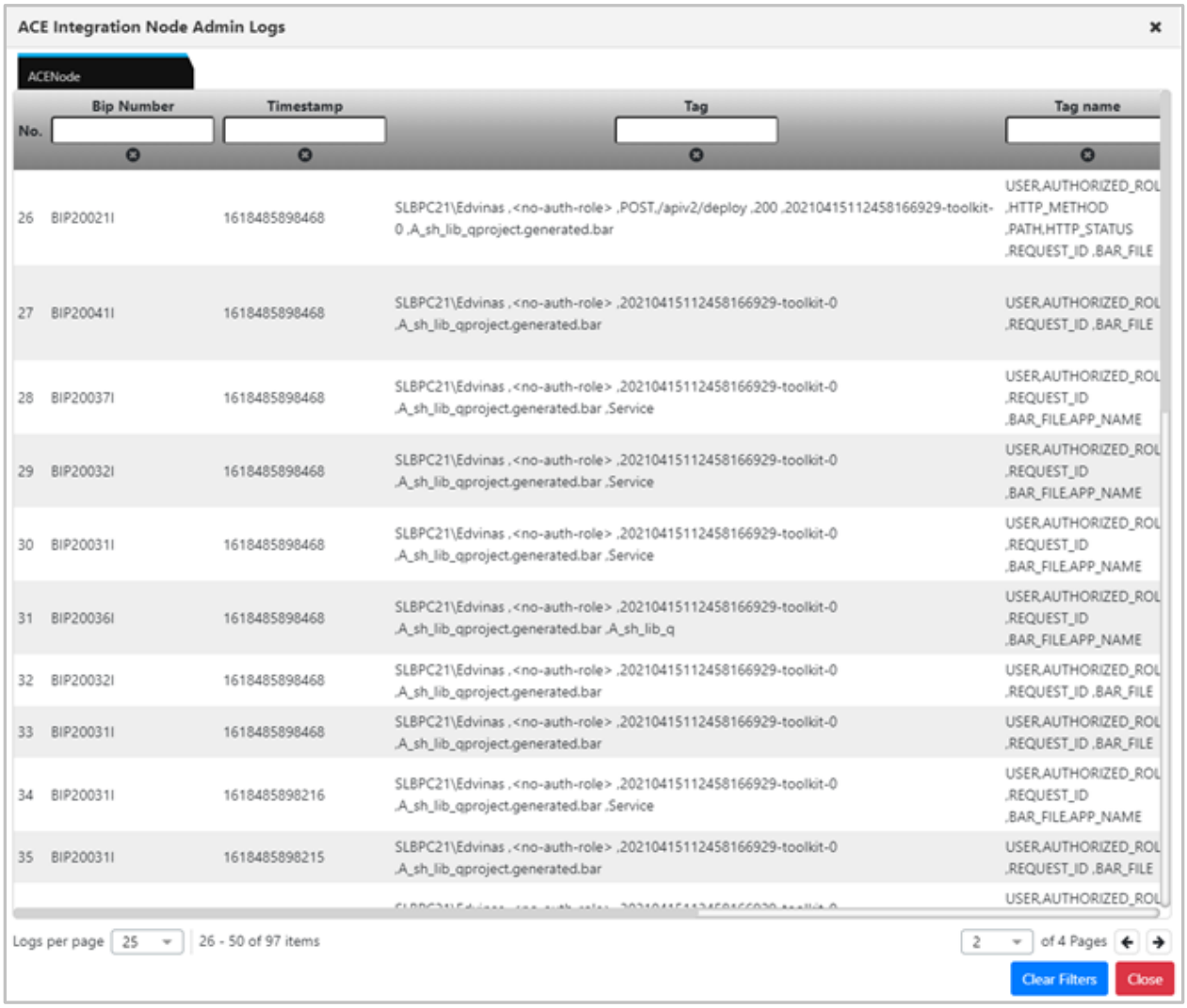

Figure 4.3.16.3-B. ACE Integration Node Admin Logs

You can view admin logs for multiple integration nodes on separate tabs. Admin logs are loaded by page. You can specify the amount displayed per page by changing the **Logs per page** number located at the bottom-left of the window. Navigate between the pages using the page arrows located at the lower right, or select a specific page number from the drop-down to immediately jump to that page.

4.3.16.4 ACE Integration Server Deploy Function

You can deploy content on servers using a bar file. Select **Deploy** from the action pop-up menu of an ACE integration server.

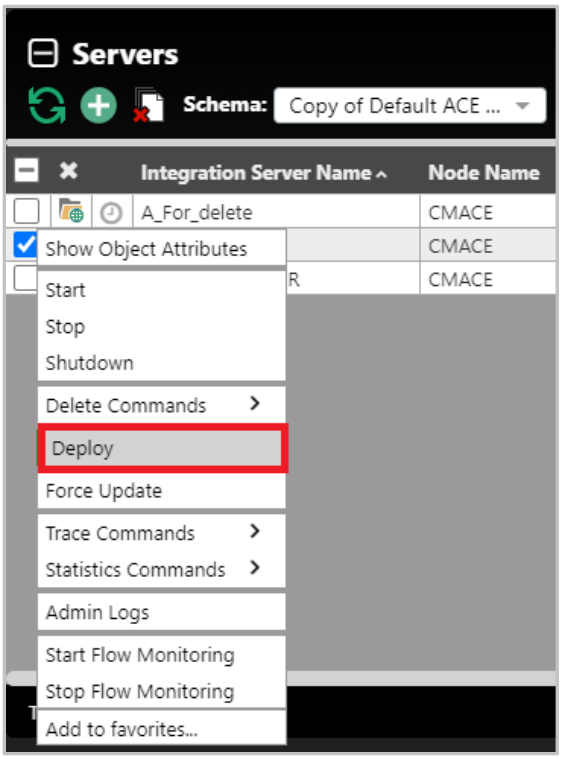

Figure 4.3.16.4-A. Select Integration Server > Deploy

A window similar to the below appears. Click **Choose File** to select the import file. When the file is finished loading the **Deploy** button becomes available and *Loaded* is displayed. Click the **Deploy** button to import the file.

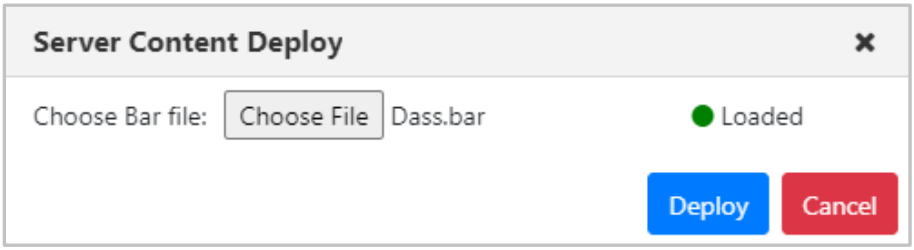

Figure 4.3.16.4-B. Server Content Deploy Window

When the file is finished being imported, it is recommended to refresh/discover the node.

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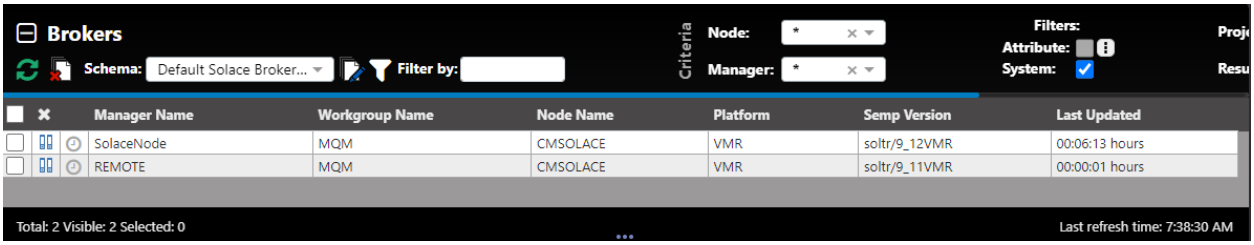
4.3.17 Solace Viewlets

Manage your Solace events and messages in meshIQ Manage. You can create viewlets for these Solace items:

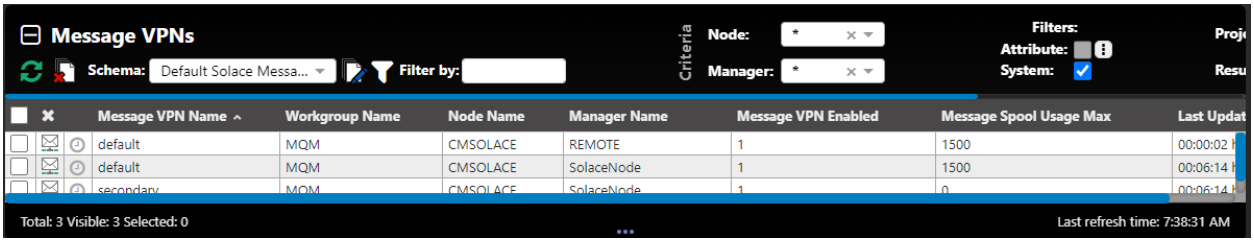
- Node
- Remote Queue Manager
- Broker
- Message VPN
- Queue
- Queue Template
- Topic Endpoint
- Topic Endpoint Template
- Bridge
- Client Profile
- ACL Profile
- Client UserName
- JNDI Connection Factory
- JNDI Queue
- JNDI Topic
- Client Certificate Authority

For more information about Solace, refer to *https://docs.solace.com/*.

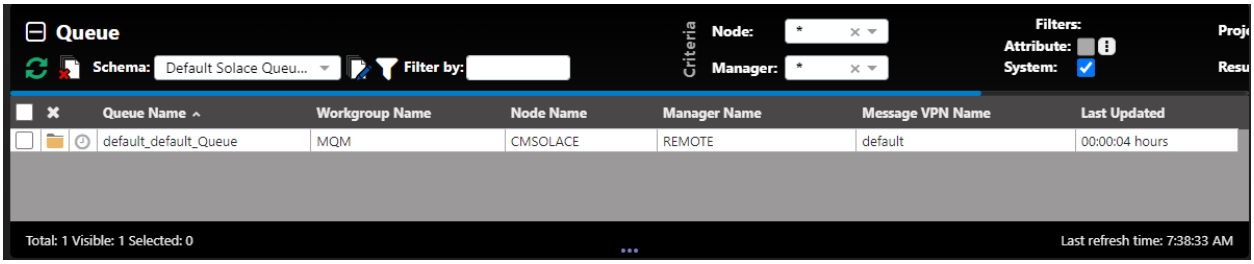
Solace Brokers



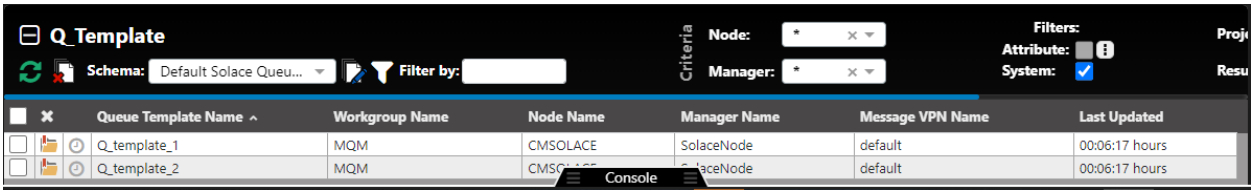
Solace Message VPNs



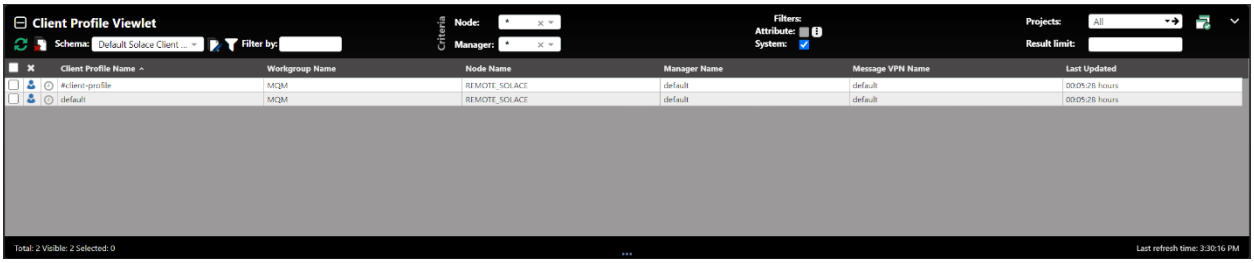
Solace Queues



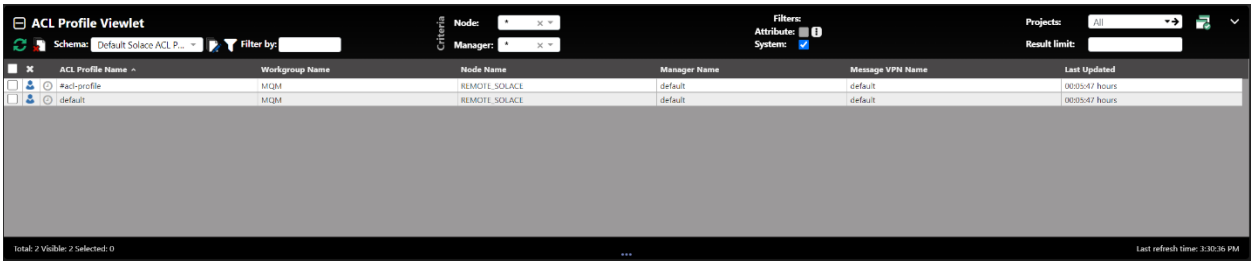
Solace Queue Templates



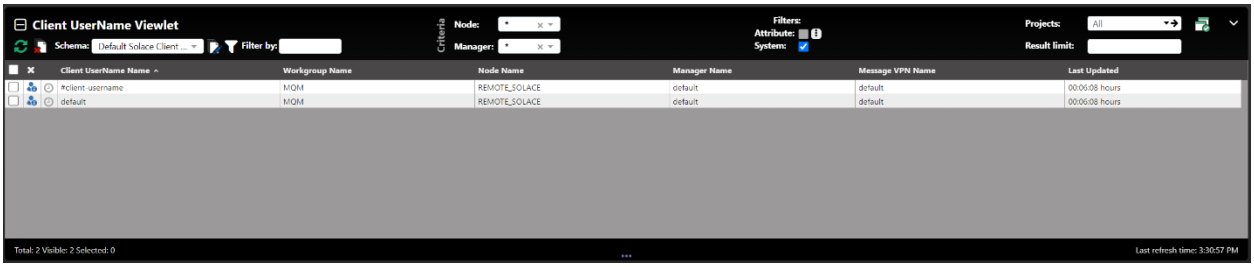
Client Profile



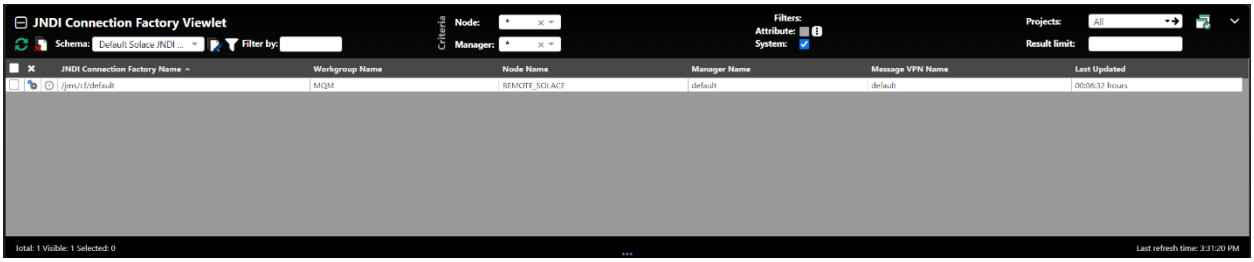
ACL Profile



Client UserName



JNDI Connection Factory



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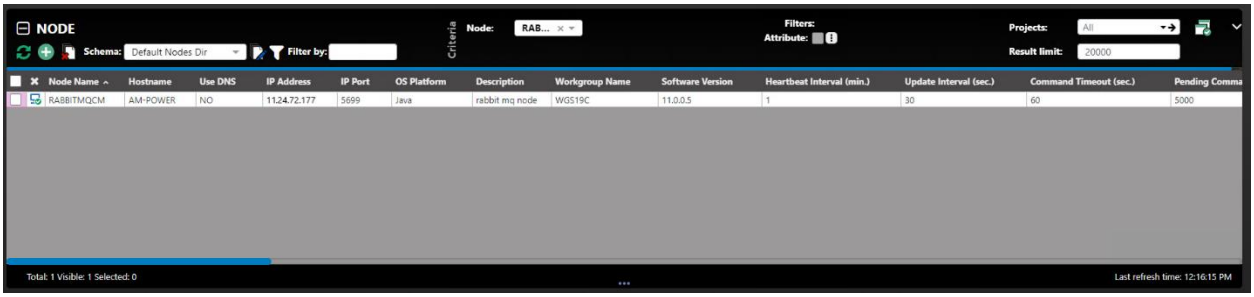
4.3.18 RabbitMQ Viewlets

View your RabbitMQ objects in meshIQ Manage. You can create viewlets for these RabbitMQ items:

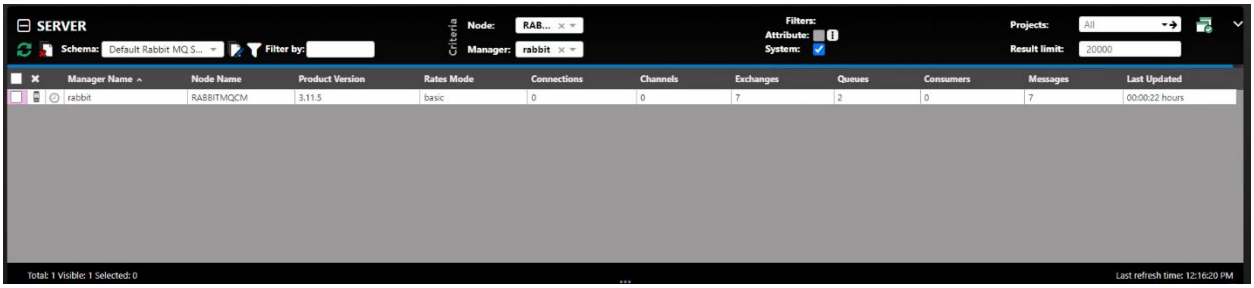
- Node
- Server
- Remote Node
- Virtual Host
- Connection
- Channel
- Consumer
- Exchange
- Queue
- User
- Component
- Policy
- Operator Policy

Some examples are shown below.

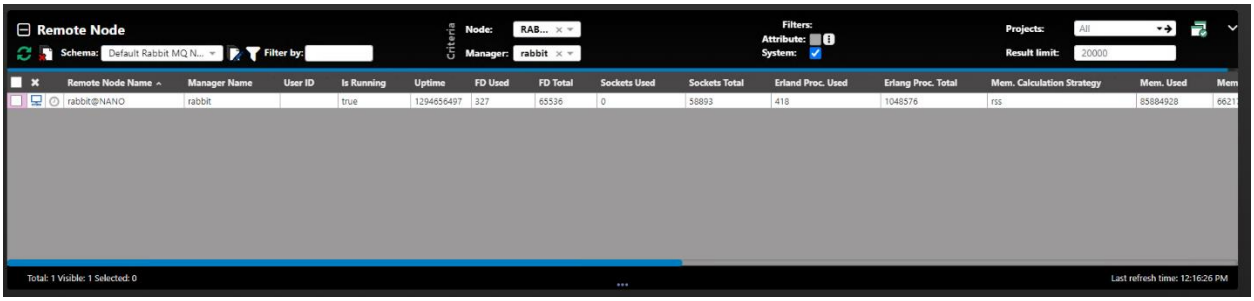
Node



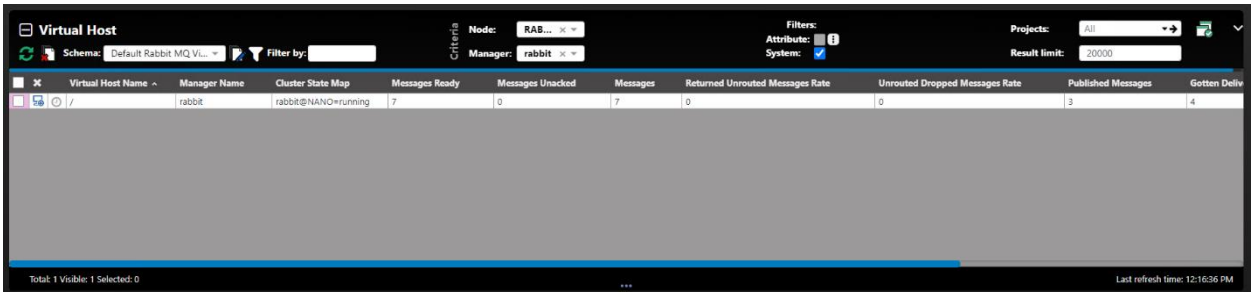
Server



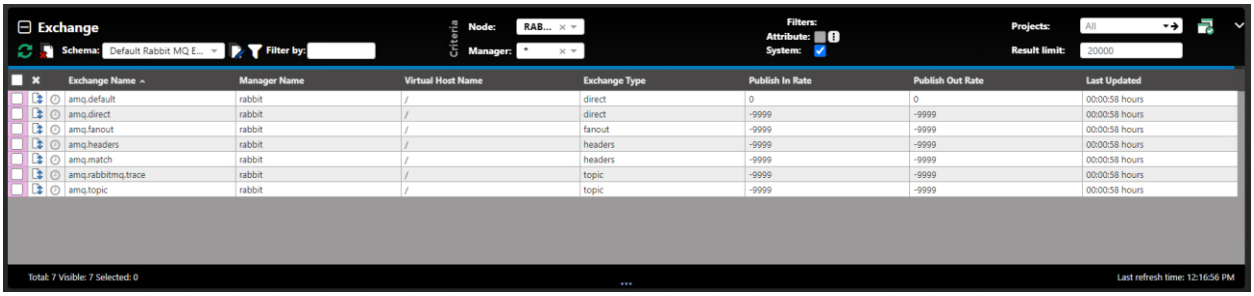
Remote Node



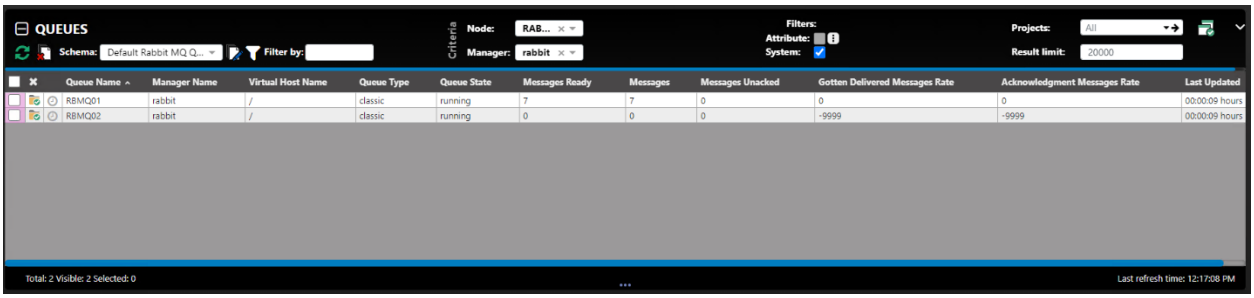
Virtual Host



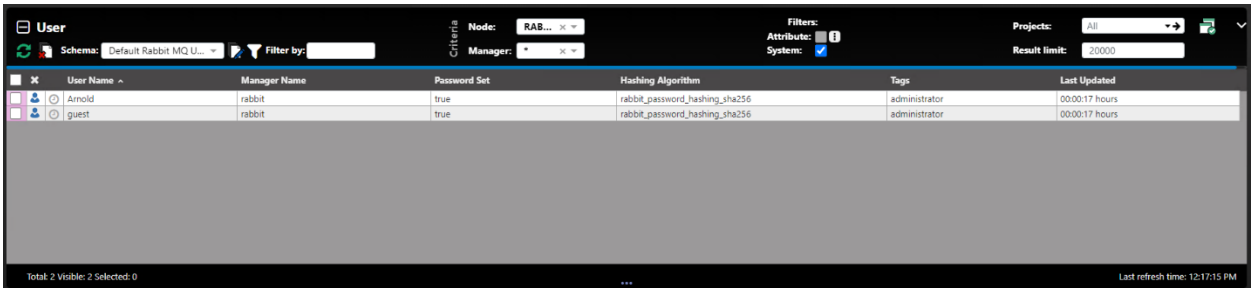
Exchange



Queue



User



4.4 Toolbar Options

The toolbar appears at the top right of the screen. Functionality is explained in *Table 4.4-A* below.

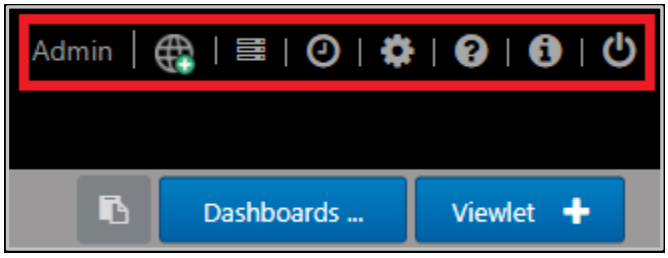


Figure 4.4-A. Toolbar Options

Table 4.4-A. Toolbar Options

Icon	Name	Description
Admin	User Name	Displays the user's name.
	Connect	**Connect** button. Reconnects workgroup server connections.
	Request History	Displays all historical requests. (Section *4.4.5)*.
	Schedules	Opens the *Schedules* window. A list of scheduled commands and their statuses are displayed. (Section *4.4.2)*.
	Settings	Displays the **Settings window**. See *Settings Window* below (Section *4.4.4*) for more information.
	Help	Opens the *Resource Center* or other online resource defined in your system's global settings.
	About	Displays version number.
	Log Out	Logs the user out of the application.

4.4.1 Connect

Click the **Connect** button to reconnect the workgroup server when the status of the workgroup server is **Not Connected** or there are WGS issues. Enter the workgroup server's password and click **Renew Token**.

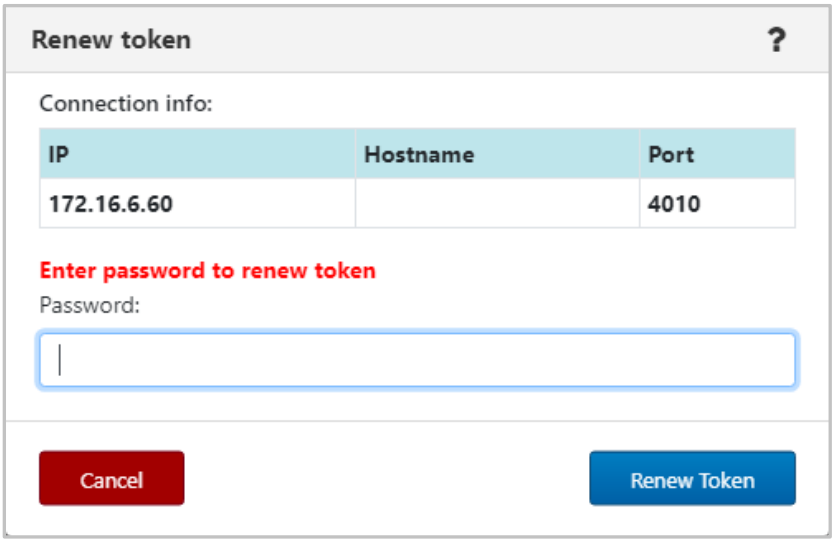


Figure 4.4.1-A. Renew Token

4.4.2 Statistics

To determine the highest value features of meshIQ Manage at your organization, run the Statistics report, available from the toolbar: .

The **Show Navigator Statistics** right is required to view this report.

By default, the Statistics report shows counts of each user activity for today. You can change the date Range to view activity from a different time period. Hover over a bar on the chart to view the exact number of times a feature has been used.

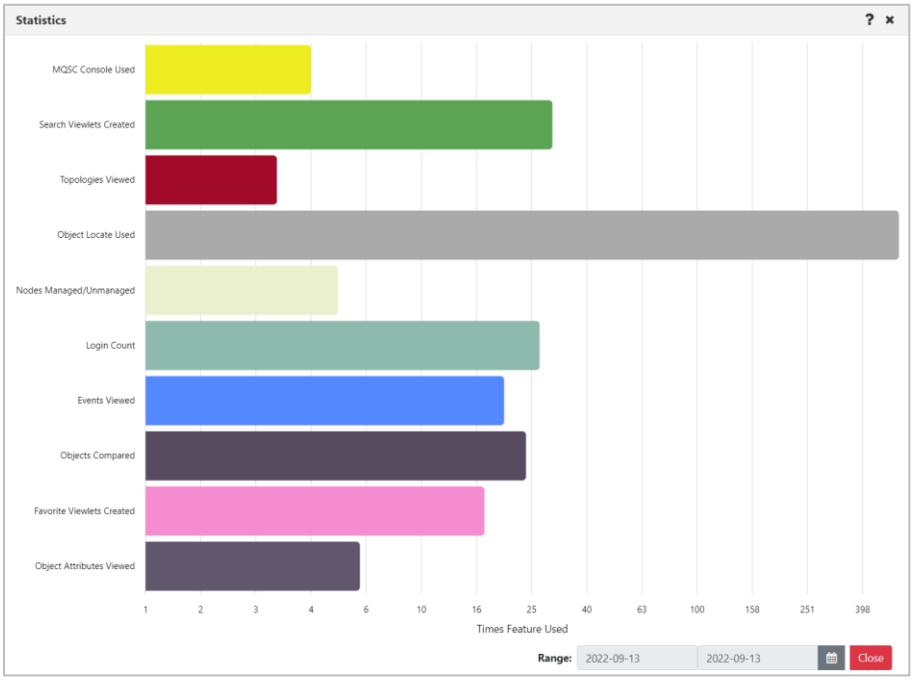


Figure 4.4.2-A. Statistic Report

By default, statistics data is updated about every 10 minutes. The chart uses a logarithmic scale since some features, like Object Locate, are used far more often than any others.

The features that are included in this report are listed below.

- Action Schedule Used
- Attribute Filters Created
- Authority Records Created
- Custom Attributes Created
- Dashboard Templates Created
- Events Viewed
- External Viewlets Created
- Favorite Viewlets Created
- Login Count
- MQSC Snapshots Created
- Nodes Managed/Unmanaged
- Object Attributes Viewed
- Object Authority Records Viewed
- Object Locate Used
- Object Name Filters Created
- Object Status Viewed
- Objects Compared
- Search Criteria Created

Managers Compared
Message Export Used
Message Import Used
MQ Statistics Used
MQSC Console Used
Search Viewlets Created
Shared Dashboard Count
Topologies Viewed
Viewlet Schemas Created

4.4.3 Schedules

After clicking the Schedules icon from the top of the screen (*Figure 4.4-A*), the *Schedules* window opens. Only users with the required WGS configuration will have the ability to use this feature. See Scheduling for more information.

4.4.4 Settings Window

After clicking the **Settings** icon from the top right of the screen (*Figure 4.4-A*), the *Settings window* is displayed. This window is labeled *User Settings* or *Global Settings*, depending on which settings are being displayed. It has the following tabs:

Settings Common to User and Global Setting Windows

- **User settings** *(Section 4.4.4.1)*
- **Message Commands** *(Section 4.4.4.1.2)*
- **Load Messages** *(Section 4.4.4.1.3)*
- **Save Messages** *(Section 4.4.4.1.4)*
- **Color Settings** (*Section 4.4.4.1.5*
- **Attribute Filters** (*Section 4.4.4.1.6*)
- **Display Schemas** (*Section 4.4.4.1.7*)

Global Only Settings

- **Cipher Specs** (*Section 4.4.4.1.5*)
- **Manage Users** (*Section 4.4.4.2.2*)
- **Global Notice** (*Section 4.4.4.2.3*)
- SSO (*Section*)
- **Environment Level** (*Section 4.4.4.2.4*)
- **Dashboard Ownership Management** (*Section 4.4.4.2.5*)
- **User Object Ownership Management** (*Section 4.4.4.2.6*)

4.4.4.1 User and Global Settings

This section describes settings that can be configured at both the User level and the Global level. For information on settings that are global only, see Global Settings.

When a new user is added to the system, they will automatically have the global settings created by the administrator. If the user updates their settings, the updates will override the global settings they initially had.

If a user wants to restore their own settings to the default global settings, simply click the **Restore Default** button located at the bottom of the screen.

4.4.4.1.1 User Settings Tab

4.4.4.1.1.1 User Level

The **User settings** tab located on the *User Settings window* is shown below and described in *Table 4.4.4.1.1.1-A*.

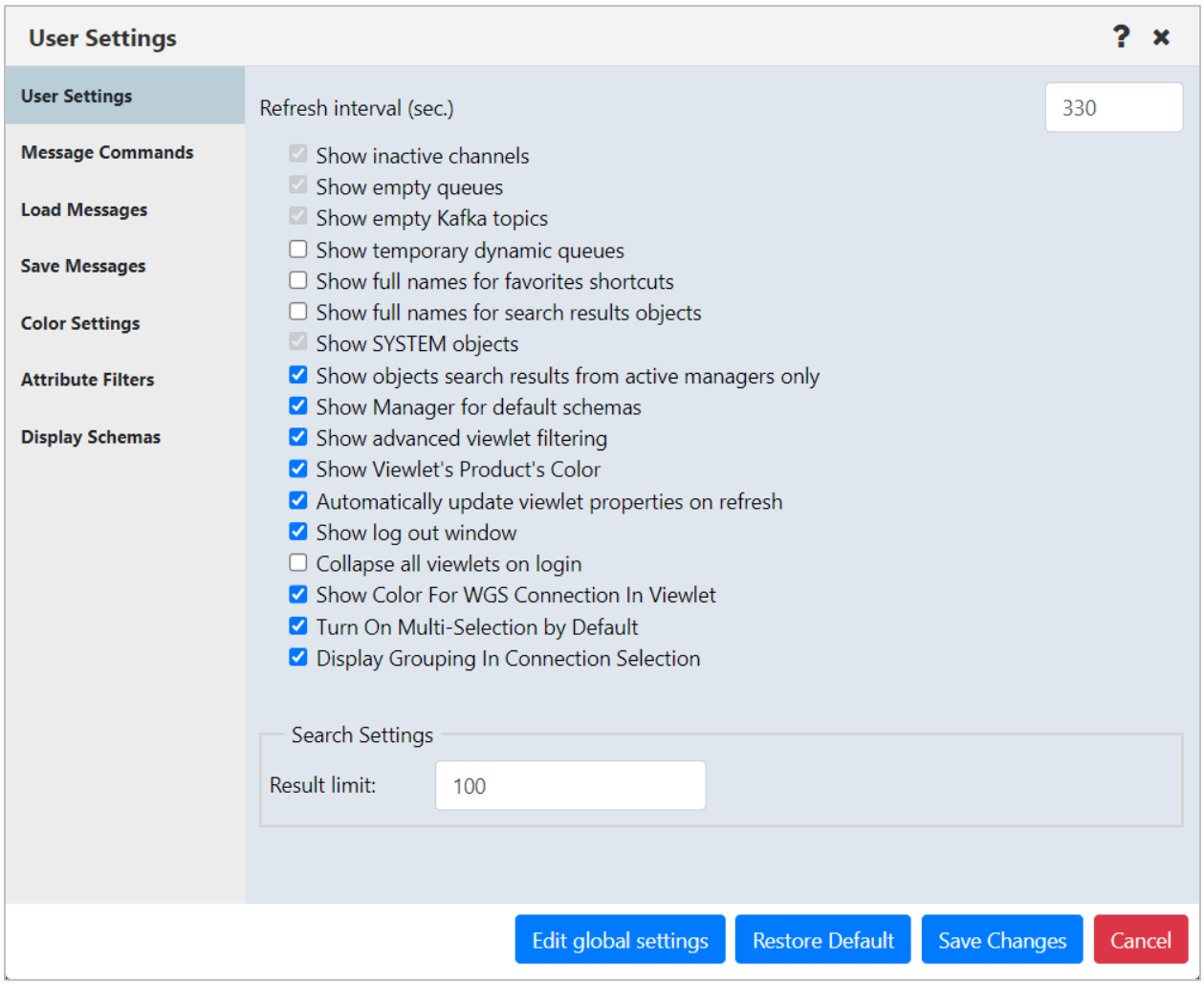


Figure 4.4.4.1.1.1-A. Edit User Settings

Table 4.4.4.1.1.1-A. User Settings

Name	Description
Refresh interval (sec.)	Automatically refreshes the displayed information at the specified interval (in seconds).
Show inactive channels	Select to show all inactive channels in the tree.
Show empty queues	Display all queues that have a current depth equal to zero. Applies to IBM MQ and TIBCO EMS. This option is not enabled by default.
Show empty Kafka topics	Display Kafka topics that have a current depth equal to zero.

Table 4.4.4.1.1.1-A. User Settings	
Name	**Description**
Show temporary dynamic queues	Select to display temporary dynamic queues.
Show full names for favorites shortcuts	Displays entire object path names on the Favorites tab.
Show full names for search results objects	Displays entire object path names for all search results.
Show SYSTEM objects	Select to show SYSTEM objects (objects that begin with SYSTEM or NASTEL).
Show objects search results from active queue managers only	Select to only search active queue managers. If off, all objects are shown, even from queue managers that are not currently active (will produce duplicates of the same object). This option is selected by default.
Show Manager for default schemas	By default, the **Manager Name** is the second viewlet column displayed. Uncheck this setting to remove the Manager Name column.
Show advanced viewlet filtering	Shows applicable advanced attribute filtering options at the top of search viewlets, so that you can adjust them more easily. Options shown are relevant to the object type (queues, channels, listeners, EMS routes, and so on). Advanced filter options can include settings from the viewlet properties such as Node, Manager, Object, queue Type, Attribute filters, and Message Search criteria. They can also include the user and global settings checkboxes **Show empty queues** and **Show SYSTEM objects** (labeled **Empty** and **System**, respectively). This setting applies to viewlets for IBM MQ, EMS, Kafka, and IIB products, including temporary viewlets. It does not apply to favorites viewlets, external viewlets, or system-generated viewlets in the Workspace dashboard. To learn more about advanced attribute filtering for a specific viewlet, see *Attribute Filter*.
Show Viewlet's Product's Color	Applies the product color settings from the Colors tab of the Settings window to the IBM MQ, EMS, Kafka, IIB, and ACE product viewlets. By default, a gradient is used, unless the **Flat Color** checkbox has been selected on the *Color* tab.
Automatically update viewlet data on refresh	When this setting is enabled, and another user updates the properties of a viewlet on a dashboard that you have open, the viewlet is updated automatically the next time its data is refreshed. This also holds true if you updated the viewlet yourself, from another computer.

Table 4.4.4.1.1.1-A. User Settings	
Name	**Description**
	If this setting is not enabled, the viewlet information is not updated automatically; instead, the application will inform you of the pending synchronization.
Show log out window	When this option is selected, users receive a confirmation message after they click the Logout button on the toolbar. Users can click **Yes** to log out or **Cancel** to leave it open. A **Remember this option** checkbox is available to prevent future prompts; but clearing this setting has the same effect; the user is automatically logged out, bypassing the confirmation message.
Collapse all viewlets on login	You can choose to display all viewlets as collapsed at login. This option can be set at the global or user level. If you do not have this option enabled, then the next time you log in, viewlets will revert to their previous state. Note that Workspace dashboard viewlets are not subject to this setting.
Collapse all viewlets on login	You can choose to display all viewlets as collapsed at login. This option can be set at the global or user level. If you do not have this option enabled, then the next time you log in, viewlets will revert to their previous state. Note that Workspace dashboard viewlets are not subject to this setting.
Show Color For WGS Connection In Viewlet	Turn on this setting to shade viewlet rows by workgroup server connection. See Color Settings Tab to learn how to choose the colors.
Turn On Multi-Selection by Default	When this setting is turned on, by default, a user can select multiple workgroup servers when editing a viewlet. If it is not turned on, the user must first select the **Multi-Selection** checkbox under the Workgroup server list before being able to select multiple workgroup servers.
Search Settings: Result limit	For new viewlets. Define the default maximum number of results (objects) a search request will return. Use this to limit the number of managers, connections, routes, and so on, to be included in new viewlets by default. When the Total/Visible/Selected labels at the bottom of your viewlet are orange, it means that the number of records in your viewlet meets or exceeds the Result Limit, and you should consider fine-tuning the viewlet's attribute filters to return a more relevant set of results from the workgroup server. This setting overrides the corresponding Global Settings value.

Table 4.4.4.1.1.1-A. User Settings	
Name	**Description**
Restore Default button	Select to restore to default settings.

4.4.4.1.1.2 Global Level

The **User Settings** tab located on the *Global Settings* window is shown below and described in *Table 4.4.4.1.1.1-A*. Admins can edit the global settings by clicking the **Edit global settings** button located at the bottom of the screen.

NOTE

Please note, updating the global settings will not affect existing users (admins can reset a user's settings back to the global settings on the Manage Users tab (*Section* 4.4.4.2.2)).

After making updates to global settings, click the **Save Changes** button to save and exit the screen. From this point forward, any new users added to the system will receive these settings. When editing global settings, you can switch back to updating your own settings by clicking the **Edit user settings** button located at the bottom.

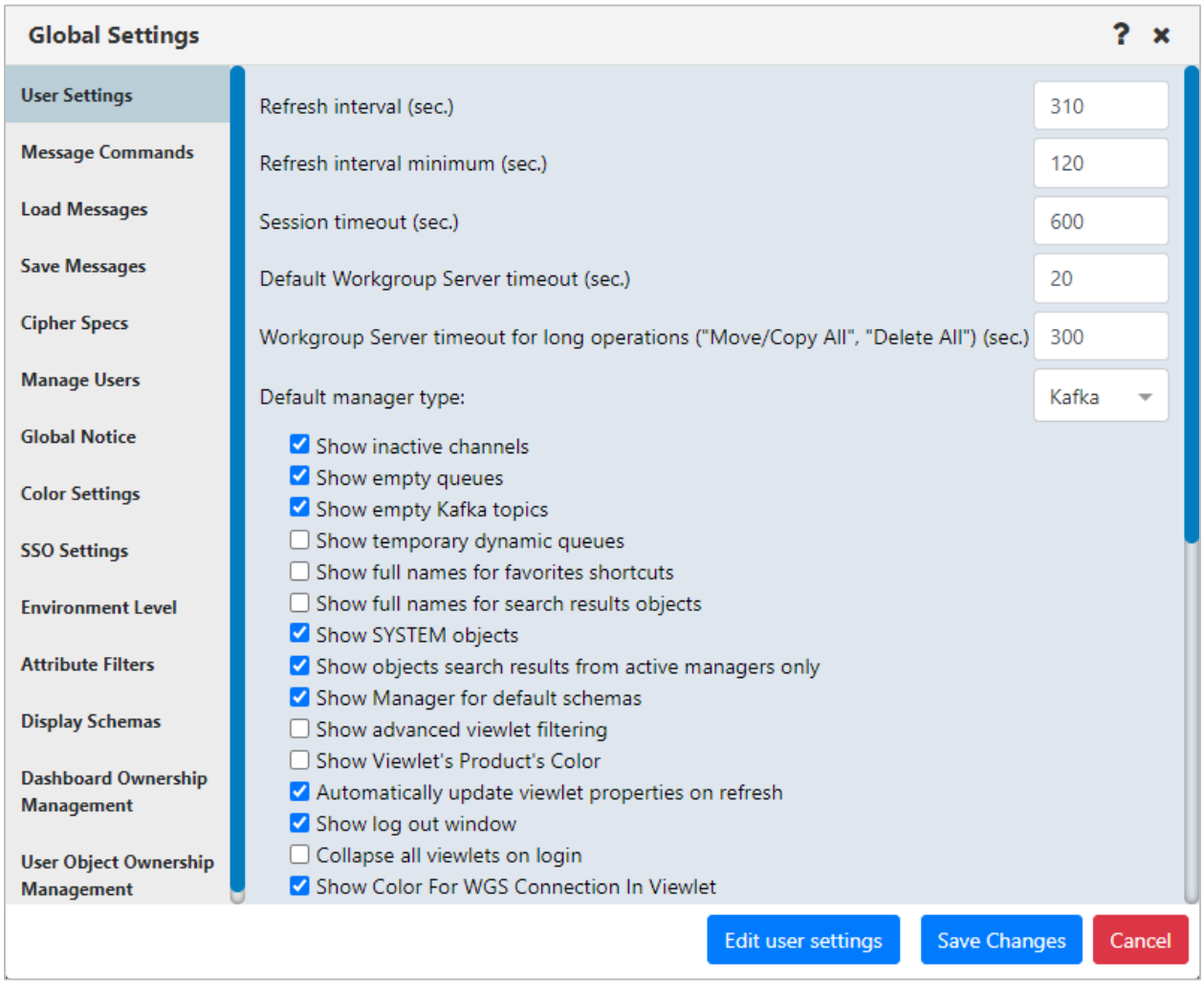


Figure 4.4.4.1.1.2-A. Global User Settings

Table 4.4.4.1.1.2-A. Global User Settings	
Name	**Description**
Refresh interval minimum (sec.)	To conserve system resources, you can prevent users' viewlets from being refreshed too frequently by establishing a minimum value for refresh intervals. This minimum threshold, Refresh interval minimum (sec.), is stored in Global Settings. When it is changed, all user-defined refresh intervals that fall below it are set to the threshold from Global Settings; the updated interval goes into effect the next time the user logs in.
Session timeout (sec.)	For security reasons, user sessions are set to terminate after a defined period of inactivity (known as the "session timeout"). The Session timeout (sec.) value is defined on the Global Settings dialog. The default value is 600 seconds (10 minutes). If a user's session has been idle for 10 minutes, the Extend Session dialog is displayed, and the user can either click Continue to extend the user session or Log Out to exit the application.
Default Workgroup Server timeout (sec.)	Default timeout value for most Workgroup Server operations. See also "Workgroup Server timeout for long operations" below. The default value is 20 seconds.
Workgroup Server timeout for long operations ("Move/Copy All", "Delete All") (sec.)	Default timeout value for long Workgroup Server operations only. Overrides Default Workgroup Server timeout (sec.). The default value is 300 seconds.
Security Manager URL	Location of the security application. For the original security manager, use /apodwsm. For the new security manager, use /navxwsm.
Main Help URL	Defines the URL destination for the help icon on the toolbar. By default, the help icon opens the Resource Center; however, a different online destination can be configured here.
Bulk Select Max options	The Bulk Select Max options in Global User Settings control the number of objects in a viewlet that can be selected using the bulk select check box: . For General objects (that is, all objects except queue managers), the default limit is set to 100 objects. If there are more than 100 objects in the viewlet, the Bulk Select check box is unavailable. For Restricted objects, which currently only includes queue managers, the default limit is set to 10 objects. If there are more than 10 objects, the Bulk Select check box is unavailable. Either limit can be set from 0 to 1000.
Search Settings: Result limit	For new viewlets. Define the default maximum number of results

Table 4.4.4.1.1.2-A. Global User Settings	
Name	**Description**
	(objects) a search request will return. Use this to limit the number of managers, connections, routes, and so on, to be included in new viewlets by default. The user-level setting overrides the global setting. When the Total/Visible/Selected labels at the bottom of your viewlet are orange, it means that the number of records in your viewlet meets or exceeds the Result Limit, and you should consider fine-tuning the viewlet's attribute filters to return a more relevant set of results from the workgroup server.
Search Settings: Search depth	Define the number of records will be searched within each queue manager.

4.4.4.1.2 Message Commands Tab

The **Message Commands** tab, located on both the *User Settings window* and the *Global Settings window*, provides settings for browsing messages. The various options are described in *Table 4.4.4.1.2-A*.

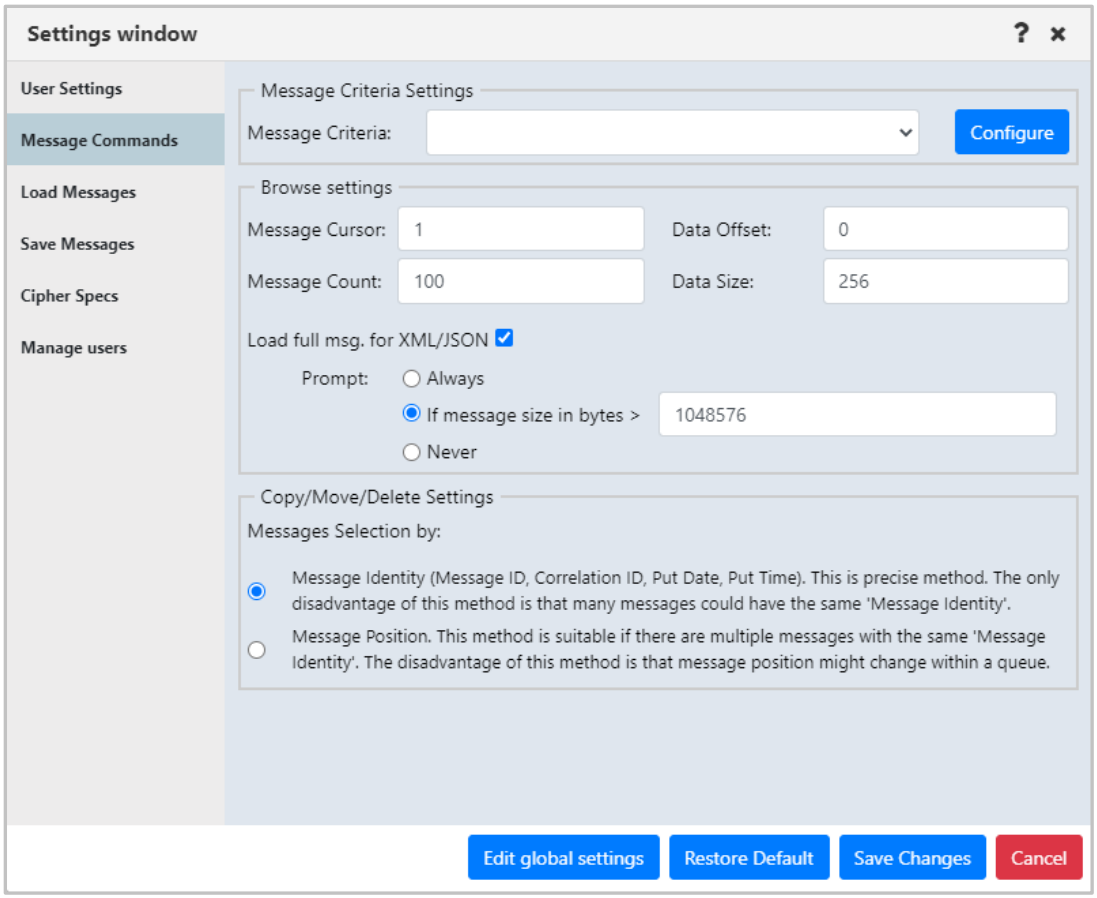


Figure 4.4.4.1.2-A. Message Commands

Table 4.4.4.1.2-A. Message Commands	
Name	**Description**
Message Criteria Settings	A filter for messages. When criteria set is specified, it can be used to browse, copy, move, re-route, and delete messages which satisfy the selected criteria's specifications. When a message criteria record is selected to filter messages, it also applies to the Put New Message option. Message criteria are also available to set default MQMD header values when you load messages from a file (Load from File option).
Message Criteria	Select an existing message criteria set from the drop-down list to apply to the messages. Only one message criteria set can be specified.
Configure button	Create, edit, or delete message criteria (*Message Criteria*).
Browse Settings	The following describes browse options:
Message Cursor	Enter message cursor; that is, where to start reading the message. Range: 1 – 999999999. Default: 1 (Required)
Data Offset	Enter message data offset. (Required)
Message Count	Enter the number of messages to be displayed in the **Message** tab. (Required) The default setting is 500, but the Administrator can change this to any value from 1 to 1,000. However, if the user enters a value that is greater than the default, it will not be saved. The value will revert to the default.
Data Size	Enter the message data size (in bytes) you would like the system to load. (Required)
Load full msg. for XML and Decode views	Full messages are needed for XML and decode views. Enable this option to allow full messages to be loaded when in an XML or decode view. When enabled, the system can be configured so that a confirmation prompt can appear before loading the full message. See below **Prompt** options to select desired criteria.
Prompt	When the **Load full msg. for XML and Decode views** option is enabled, the **Prompt** options appear. These options control whether to display a confirmation prompt before loading a full message for XML and decode views. Select one of the following options: • **Always**: Before loading full messages, the system will ask the user if the full message should be loaded. • **If message size in bytes >**: Specify an amount. The prompt asking if the full message should load will only appear when the message size is larger than the size specified. • **Never**: a confirmation prompt will never appear.
Messages Selection by radio buttons	Provides Copy/Move/Delete options. Available when **User settings** is clicked or if you are in **Copy/Move/Delete** messages operations.

Table 4.4.4.1.2-A. Message Commands	
Name	**Description**
	As noted in the description on the dialog, the disadvantage of selecting messages by position (the **Message Position** method) is that a message's position might change within a queue. For this reason, when you select the **Message Position** method, the icons for deleting, rerouting, copying, and editing are not available when multiple individual messages are selected. You can still choose to copy, move, or delete *all* messages using the message(s) pop-up menu.
Restore Default button	Restores the default settings.

4.4.4.1.2.1 Message Criteria

When you click the **Configure** button on the **Message Commands** tab of either the *User Settings Window* or the *Global Settings window*, the *Message Criteria* window opens. Below the **name** header is the list of existing message criteria sets.

User Level

At the User level, the Message Criteria window displays a list of the message criteria records that you (the current user) have created. To add, edit, and delete criteria records, you must have the **Manage Private Message Criteria** right in the security application.

A user's message criteria record can be selected in the Active Filter of a queue to filter its results; in this case, the Put New Message option for that queue is also affected by the message criteria filter. Message criteria records that concern message descriptor properties can also affect messages loaded through the Load from File option (the message criteria record can be selected from the MQMD Header Default Values list).

Global Level

At the Global level, the Message Criteria window displays a list of global message criteria records only. To add, edit, and delete global criteria records, you must have the **Manage Global Message Criteria** right in the security application.

Use the buttons described below to create, edit, or delete message criteria sets.

Figure 4.4.4.1.2.1-A. Message Criteria Window

A: Add new message criteria. After clicking this button, a new blank row appears. Double click on the new row to enter a name for the criteria set (do the same to rename an existing criteria). Customize its properties using the toolbar buttons. Click **Save** when finished.

B: Delete selected message criteria (please note, that there is no delete confirmation).

C: Customize Message Descriptor properties.

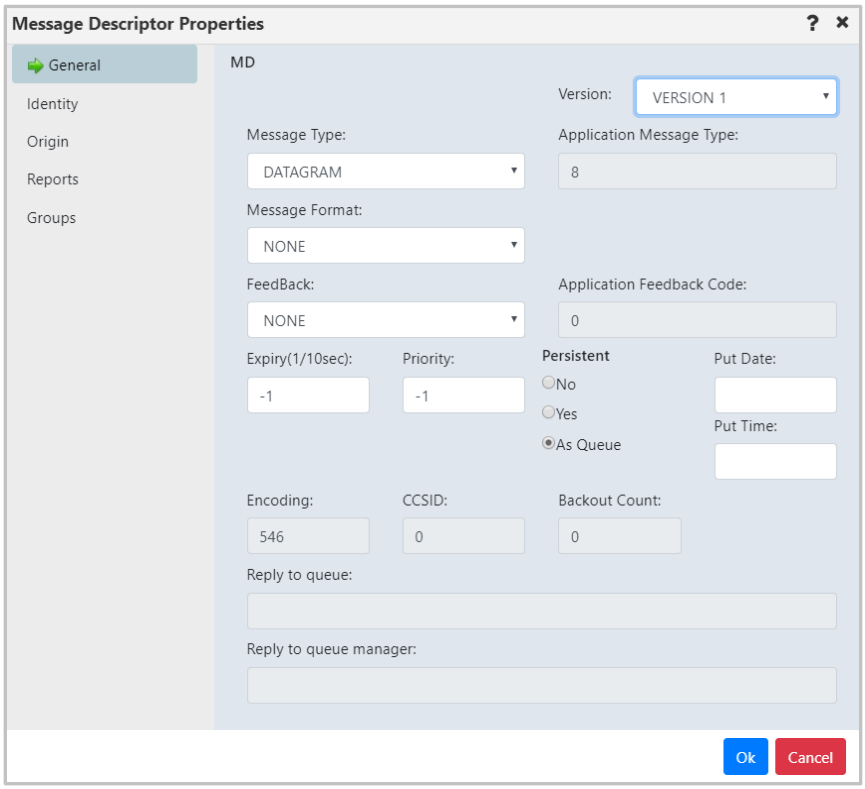


Figure 4.4.4.1.2.1-B. Message Descriptor Properties Window

D: MD1 – message descriptor properties. Opens the same windows when the MD option is clicked with the exception of the **Group** tab.

E: MDE – message descriptor extension properties.

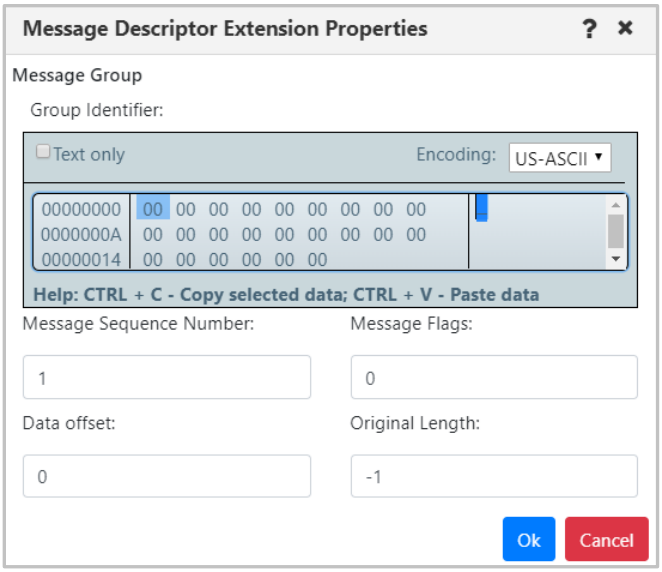


Figure 4.4.4.1.2.1-C. Message Descriptor Extension Properties Window

F: DLH – dead letter queue header properties.

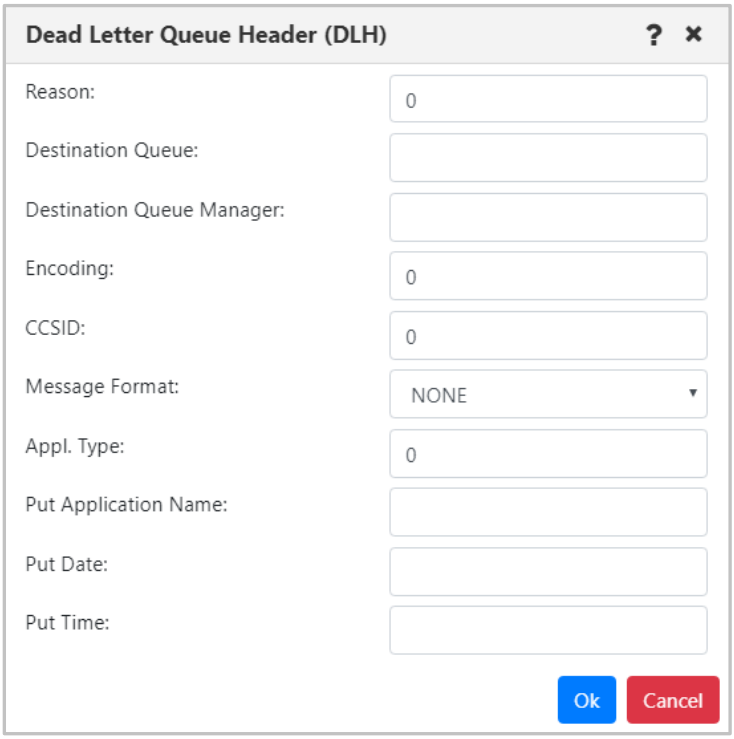


Figure 4.4.4.1.2.1-D. DLH – Dead Letter Queue Header Properties

G: XQH – transmission queue header properties.

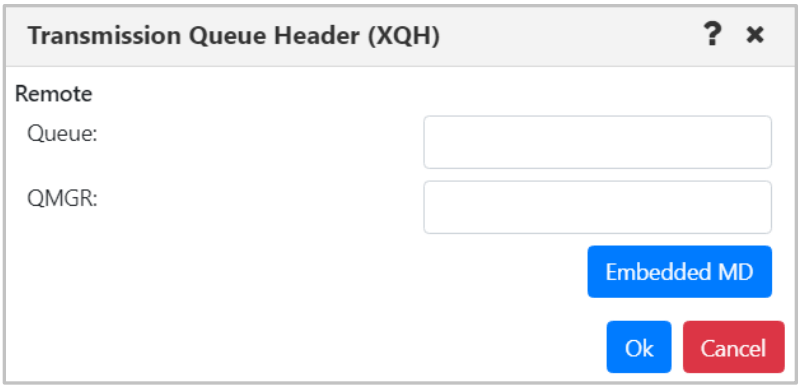


Figure 4.4.4.1.2.1-E. XQH – Transmission Queue Header Properties

Click the **Embedded MD** button to open the *Message Descriptor Properties* window (Figure 4.4.4.1.2.1-B.).

H: Data – message data criteria.

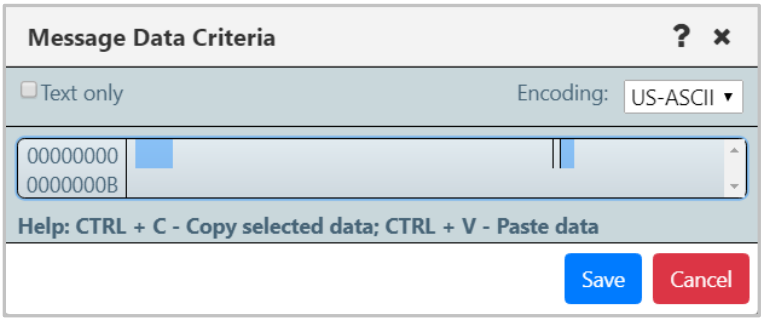


Figure 4.4.4.1.2.1-F. Message Data Criteria

I: Message Properties – Ability to search messages based on message properties (including RFH2 header fields). Both key and value must match. When searching multiple properties, all property keys and values must match (&&).

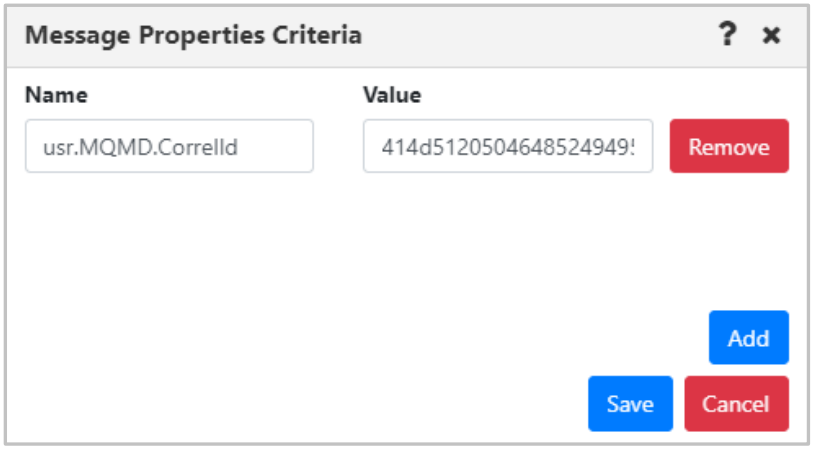


Figure 4.4.4.1.2.1-G. Message Properties Criteria

4.4.4.1.3 Load Messages Tab

The **Load Message** tab, located on both the *User Settings window* and the *Global Settings window*, is shown below and described in *Table 4.4.4.1.3-A*. This tab is used for the configuration of loading messages into a queue from a file.

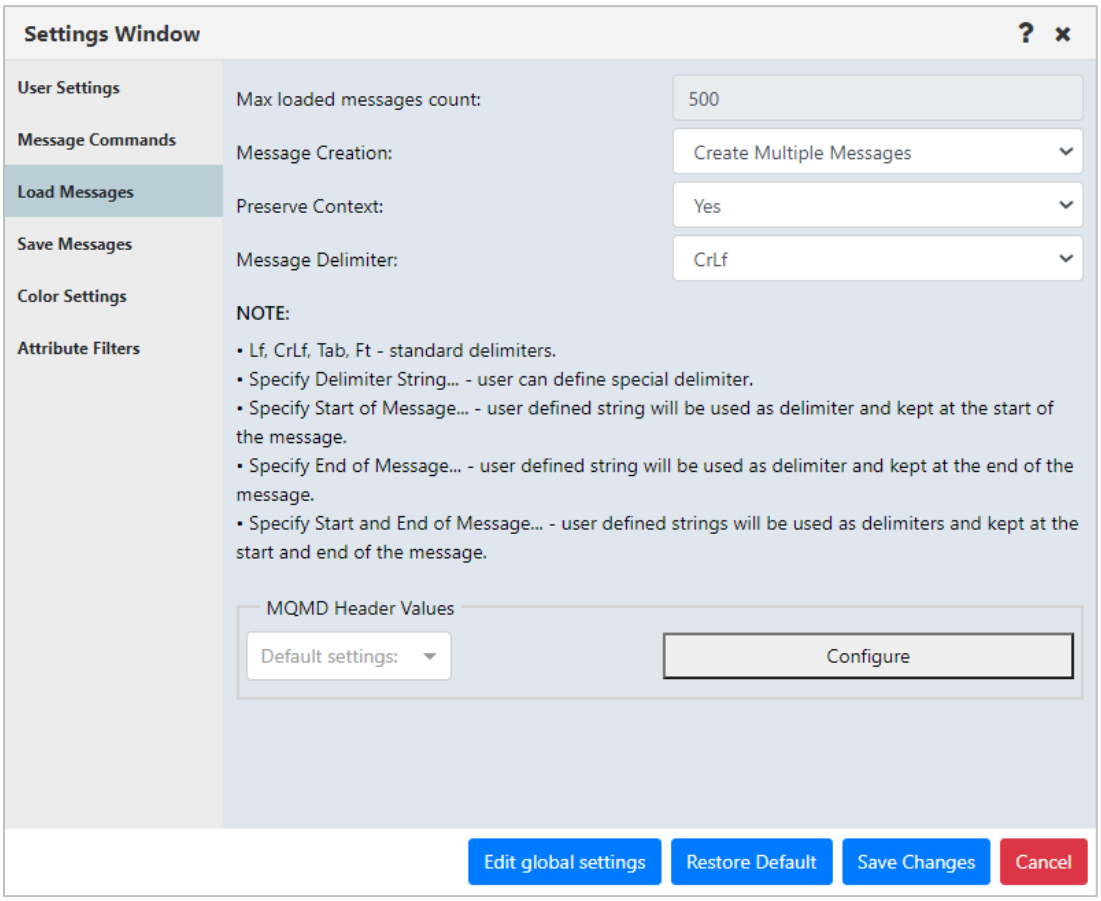


Figure 4.4.4.1.3-A. Load Messages

Table 4.4.4.1.3-A. Load Messages

Name	Description
Max loaded messages count	The **Max loaded messages count** depends on a queue manager's capacity to support a large number of messages. You must set this value at the global settings level (click **Edit Global Settings**). The user settings field reflects the global setting; it is for display only.
Message Creation	Specify if you would like a single message created or multiple messages.
Preserve Context	Specify if you would like the message context preserved.
Message Delimiter	Select the delimiter used from the **Message Delimiter** drop-down list. An explanation of the options appears immediately below the drop-down. Please note **Ft** represents the Form Feed

Table 4.4.4.1.3-A. Load Messages	
Name	**Description**
	delimiter.
MQMD Header Default Values	Click **Configure** to view or configure the default Message Descriptor (MD) properties. (Some of these properties are described in the table in *Message Descriptor Properties*.) If you already have a configuration for message descriptor properties that has been saved through Message Commands (see *Message Commands Tab*), you can select a saved configuration from the MQMD Header Values list to use as a template (that is, a starting point) for changes to the MQMD header values. You can also make changes to a previously saved message criteria record from here by selecting the record from the MQMD Header Values list, clicking **Configure**, updating the configuration, and clicking **Save Changes**, as long as the record is not global or shared by another user (shared records in the list are displayed with a green Shared Filter icon). When saved, changes to the selected record become the default settings.
Restore Default button	Restores the default settings.

4.4.4.1.4 Save Messages Tab

The **Save Messages** tab, located on both the *User Settings window* and the *Global Settings window*, is shown below and described in *Table 4.4.4.1.4-A*. Use this tab for the configuration of saving messages into a file from a queue.

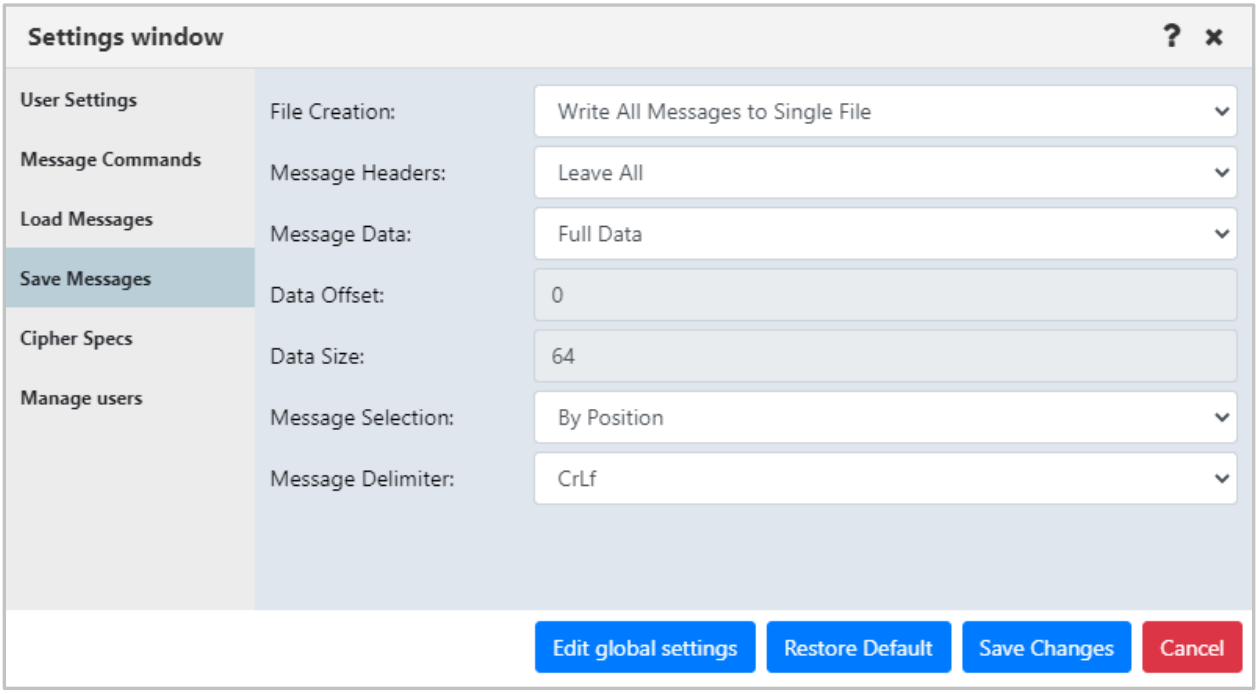


Figure 4.4.4.1.4-A. Save Messages

Table 4.4.4.1.4-A. Save Messages	
Name	**Description**
File Creation	Select if you would like messages saved to a single file or separate files.
Message Headers	Select either **Leave All**, **Strip All** or **Strip MD**. Please note that the **Strip MD** setting will strip message descriptors.
Message Data	Select either **Full Data** to save entire messages or **Selected Data** to only save a specified amount. The amount to save is specified within the **Data Size** field.
Data Offset	Enter the starting point of the data.
Data Size	This setting is only required when **Selected Data** is specified for the **Message Data** setting. Enter the desired message size to be saved.
Message Selection	Select whether you would like the message selection to be by position or identity. **By Identity** uses Message ID, Correlation ID, Put Date and Put Time. The disadvantage of using **By Identity** is that many messages could have the same message identity. Use the **By Position** option if there are multiple messages with identical message identities. The disadvantage of using this method is that the message position can change within a queue.
Message Delimiter	Select desired message delimiter for the saved messages. Please note **Ft** represents the Form Feed delimiter.
Restore Default button	Restores the default settings.

4.4.4.1.5 Color Settings Tab

Color coding user interface elements lets you quickly determine characteristics of an object at a glance. Color coding viewlet headers makes it easier for users to identify the product that a viewlet is associated with, or what type of objects it contains. Color coding of viewlet rows by workgroup server quickly shows you which workgroup server an object is from.

4.4.4.1.5.1 Color Coding Viewlet Headers

On the **Color Settings** tab, located on both the *User Settings window* and the Global *Settings* window, color formatting can be applied at the user level or global level. You can specify which colors should represent what objects, giving you the ability to color code viewlet headers by object type. You can configure color settings as follows:

- you can specify one color to represent all viewlets of a product, or
- you can specify multiple colors where each viewlet type is represented by a different color, or
- you can select a color to represent a single viewlet

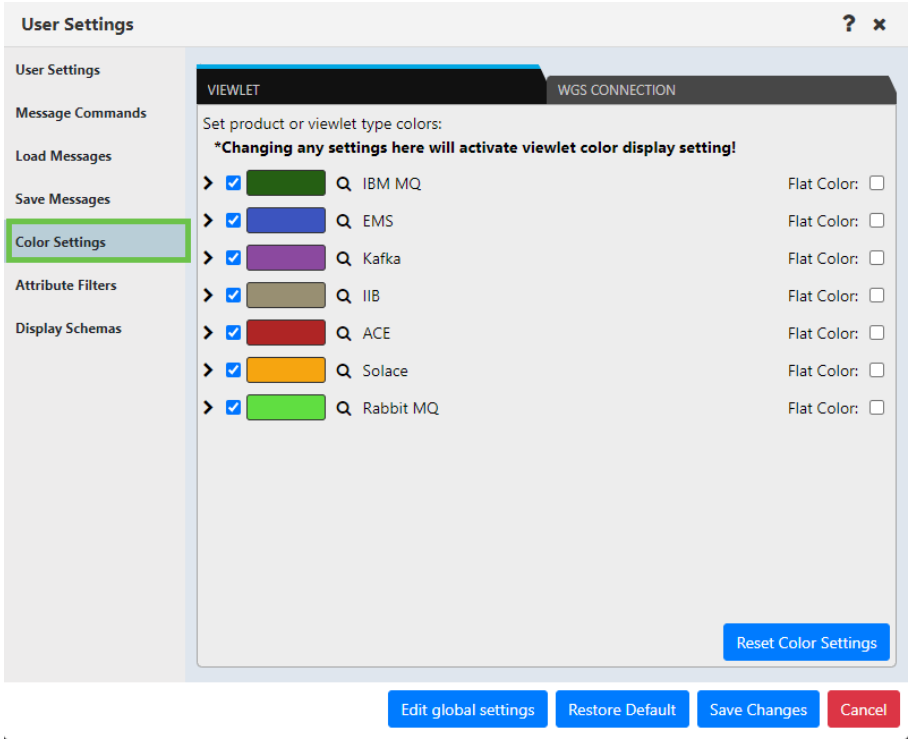


Figure 4.4.4.1.5-A. Color Settings

To activate this feature, you will need to enable the **Show Viewlet's Product's Color** setting on the **Users Settings** tab (see section [4.4.4.1](#)).

By default, a gradient is used, unless the Flat Color checkbox has been selected. See the following screenshot for an example of a color coded viewlet with a gradient. In this example, the manager viewlets are colored green:

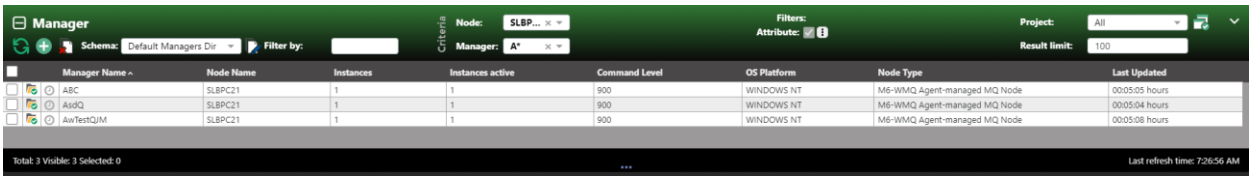


Figure 4.4.4.1.5-B. Green Color Coded Viewlet: Gradient (Default)

When the Flat Color checkbox is selected, the tops of the viewlets have a solid background color. The following screenshot shows an example:

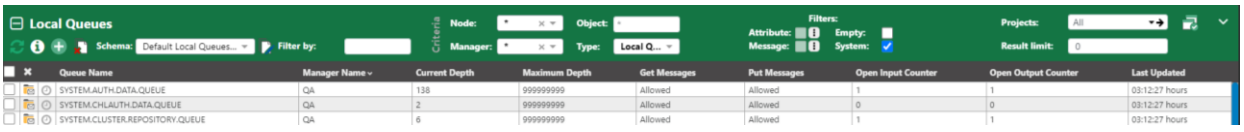


Figure 4.4.4.1.5-C. Green Color Coded Viewlet: Flat Color

To specify one color to represent all viewlets of a product: Check off the product and click on its color button. Select a color from the color picker window. You can also enter the desired color's code in RGB, HSL or Hex format by clicking the arrows at the bottom of the color picker window to select the format and enter the color codes.

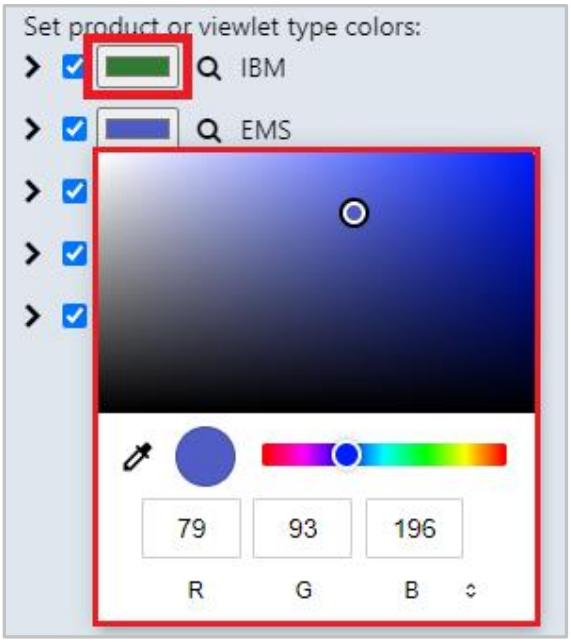


Figure 4.4.4.1.5-D. Select/Enter Color for Objects

To specify different colors to represent each viewlet type of a product: Click the expand button for the desired product to view all viewlet types for that product. Check a viewlet and click on the color button to specify the color for this viewlet type. Unchecked viewlets will follow the product's selected color.

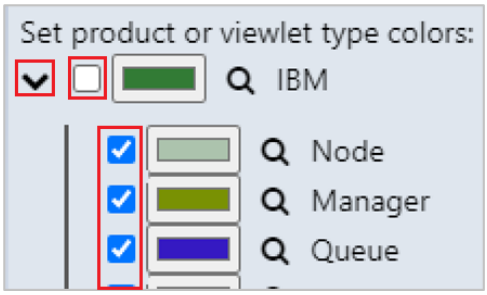


Figure 4.4.4.1.5-E. Specifying Colors for Viewlet Types

You can preview the selected color by hovering your mouse over the magnifying glass.

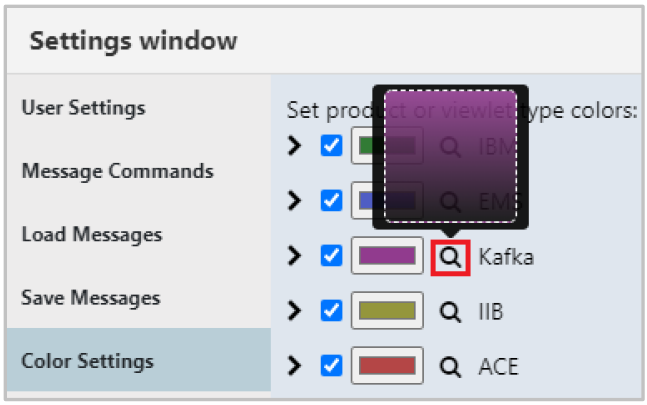


Figure 4.4.4.1.5-F. Preview Selected Color

To specify a color for a single viewlet: This is done on *the Create New/Edit Viewlet window* (see Creating New / Temporary Viewlets). Color codes specified on this window will override all color code options selected on the settings windows.

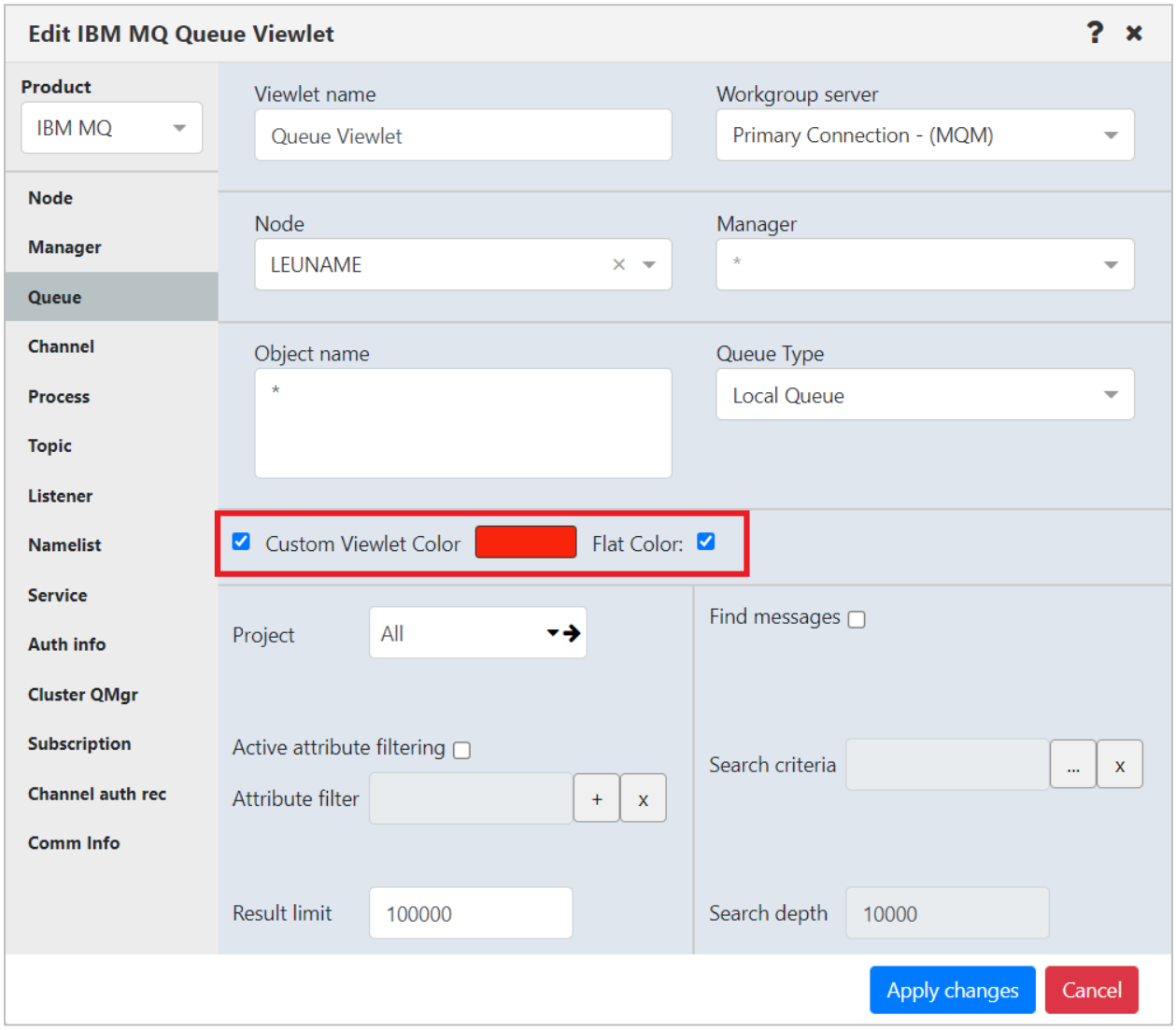


Figure 4.4.4.1.5-G. Set Colors for Individual Viewlets

4.4.4.1.5.2 Color coding workgroup servers

Setup

To see color coding by workgroup server, you must make changes in User Settings and in the viewlet.

1. In User Settings (or Global Settings, for all users), make sure you have selected the **Show Color For WGS Connection In Viewlet** checkbox. You can also choose these other settings:
    - **Turn On Multi-Selection by Default:** When you are editing viewlets, turning this setting on selects the Multi-Selection checkbox by default so that you can select more than one workgroup server.

- **Display Grouping In Connection Selection:** If Workgroup server connection groups have been created, includes connection groups in Workgroup server lists, in addition to individual connections.

2. On the Color Settings tab of User Settings, the WGS Connection tab allows you to associate a color with each connection. Click the rectangle to select a unique color. See Figure 4.4.4.1.5.2-A.
3. Within an object viewlet, you can choose to show color-coded objects from multiple workgroup server connections by selecting the Multi-Selection checkbox and selecting the individual workgroup servers one at a time. See the *Node Viewlet* example under *Viewing color coding*.

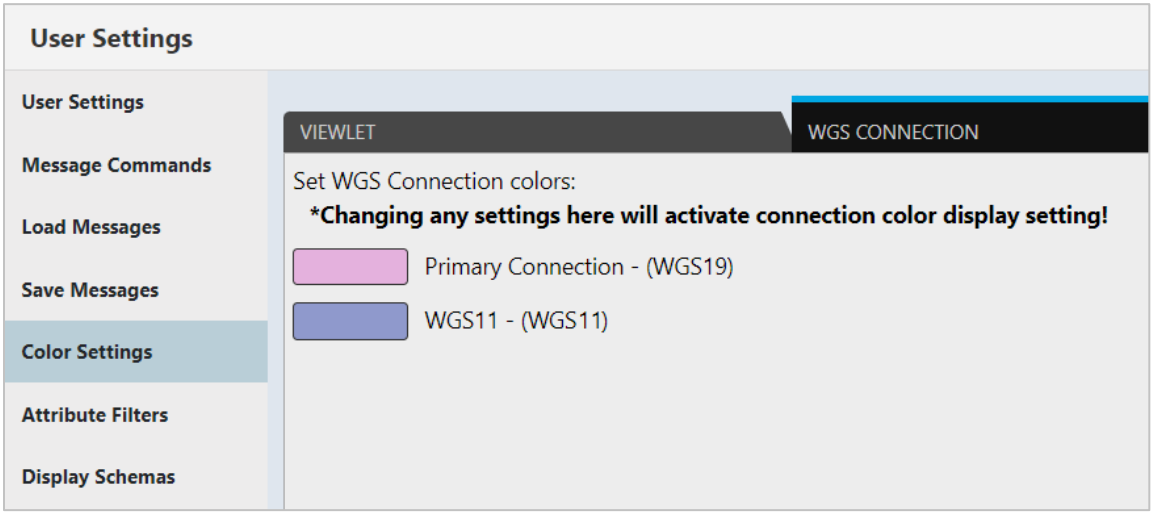


Figure 4.4.4.1.5.2-A. WGS Connection Tab of Color Settings

Viewing color coding

The selected colors are reflected in the Workgroup servers viewlet. See Figure 4.4.4.1.5.2-B. Figure 4.4.4.1.5.2-C shows a Node viewlet with nodes from two different workgroup servers (Primary Connection and WGS 11).

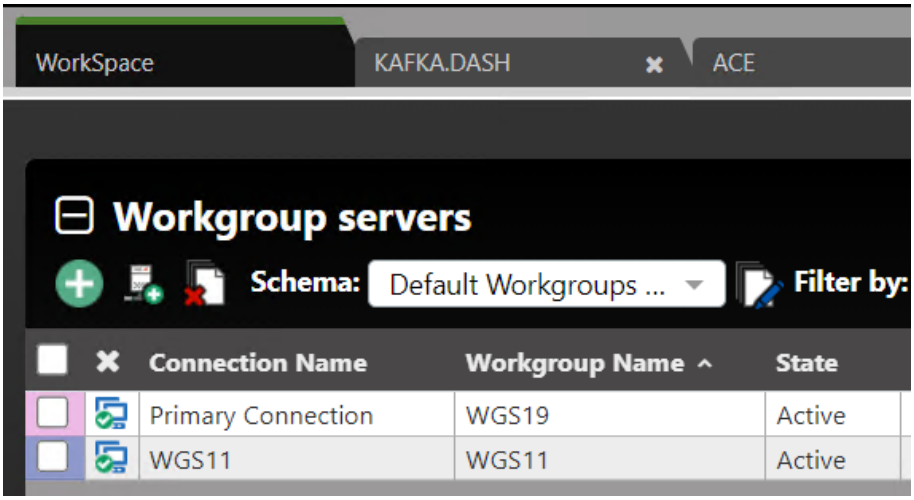


Figure 4.4.4.1.5.2-B. Color-Coded Workgroup Servers Viewlet

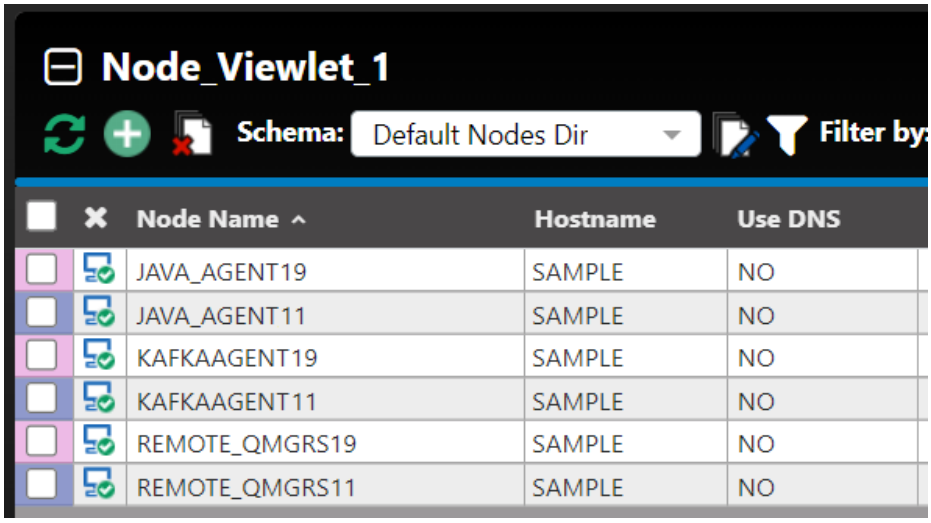


Figure 4.4.4.1.5.2-C. Color-Coded Nodes Viewlet

4.4.4.1.6 Attribute Filter Tab

4.4.4.1.6.1 User Settings

Users with the **Manage Private Attribute Filters** right in the security application can view the attribute filters that they have created for filtering individual viewlets on the Attribute Filters tab of User Settings. Filters are organized according to Product and Viewlet Type. To view a filter's details, select it from the list; its details are displayed on the right side of the dialog.

Users with this right can add, copy, edit, and delete their own attribute filters from here. (This tab does not include global attribute filters or filters that other users have shared.)

If you also have the Manage Shared Attribute Filters right, you can share the filters you have created. Attribute filters that you have shared are displayed with a green Shared Filter icon . They can be used on viewlets by members of the groups with which you have shared them.

4.4.4.1.6.2 Global Settings

Users with the **Manage Global Attribute Filters** right in the security application can view and manage global attribute filters, which are available to everyone. Click **Edit Global Settings** to access the global Attribute Filters tab. From there, you can add, copy, edit, and delete global attribute filters.

For information on adding, copying, sharing, editing, and deleting attribute filters through the *Attribute Filter Management* dialog, see Attribute Filter.

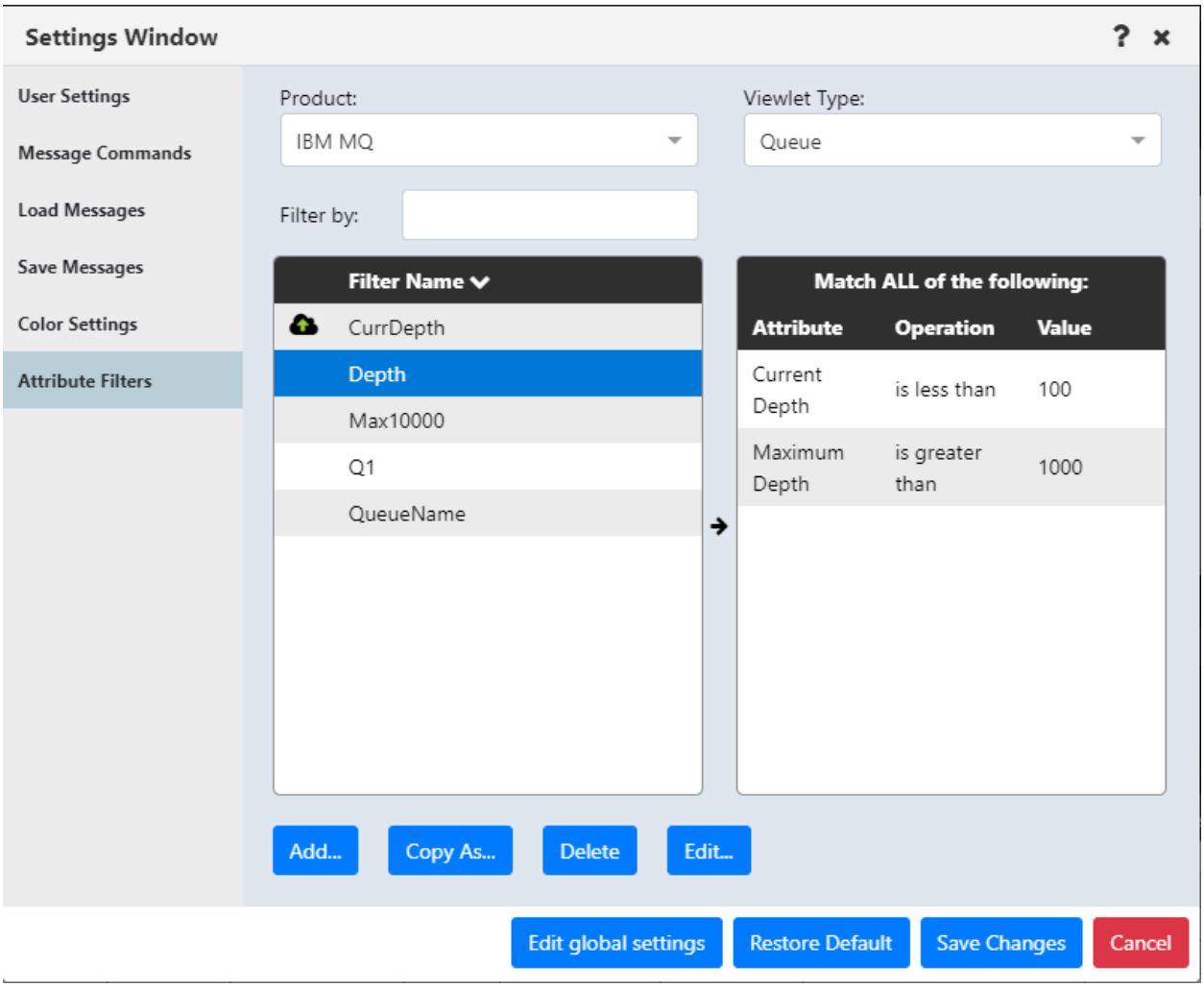


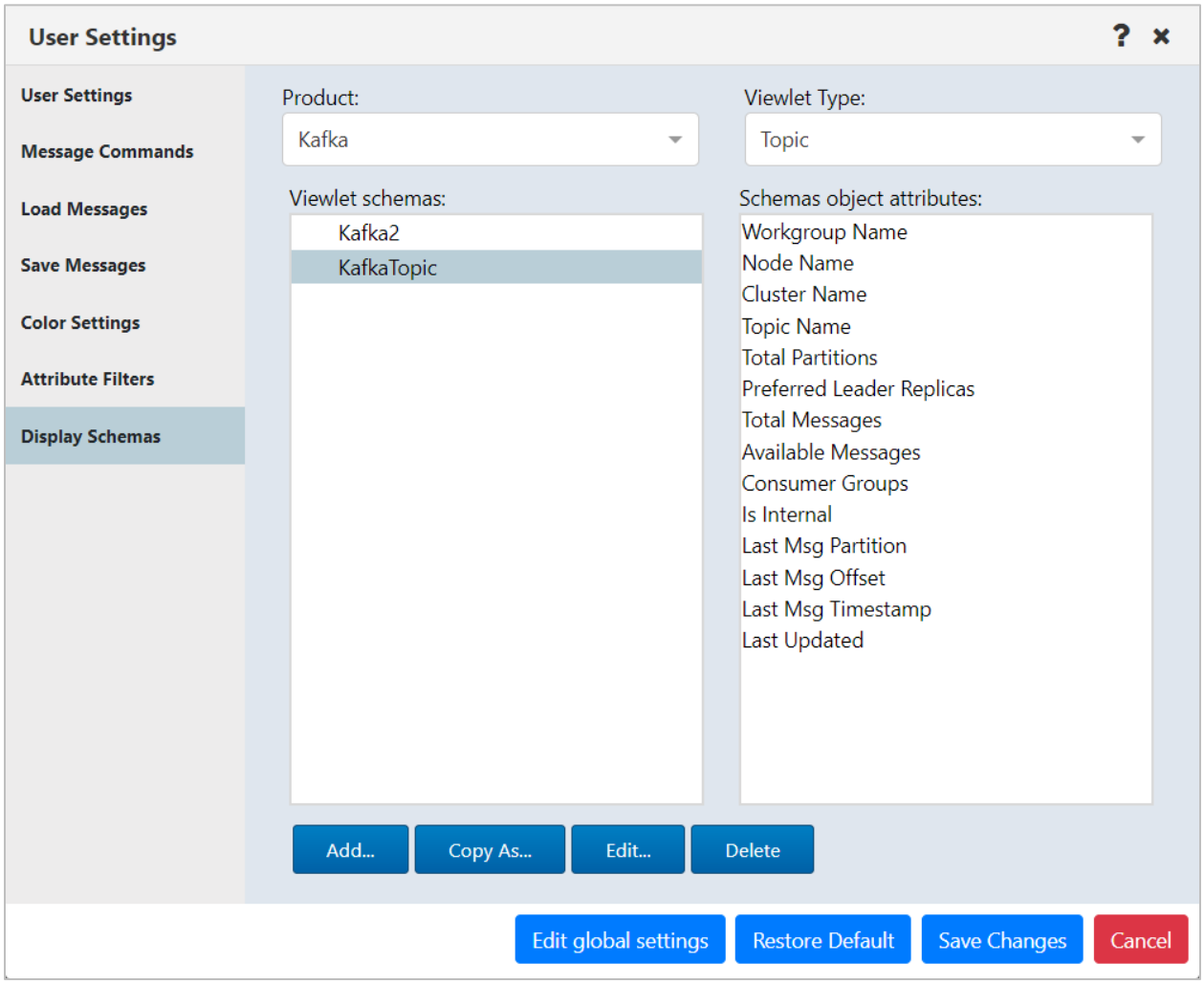
Figure 4.4.4.1.6.2-A. Settings: Attribute Filters

4.4.4.1.7 Display Schemas Tab

The **Display Schemas** tab located on the *Settings window* is a central location from which you can manage schemas for all products and objects.

- At the User Settings level, you can view, add, copy, edit, and delete your own schemas. These schemas remain private to you unless you share them with one or more groups. (See Schemas for instructions.)
- At the Global Settings level, you can view, add, copy, edit, and delete schemas that are available to all users who log in to the interface.

To view a schema, select the Product and Viewlet Type (Object) for which you want to view schemas. Viewlet schemas are displayed based on your selections. For products that include an Object Sub Type selection, the Object Sub Type *All* shows only schemas that apply to all Sub Types. Click a Viewlet schema in the list on the left to view its columns in the Schemas object attributes list.



To add a schema, select the Product and Viewlet Type (Object) of the schema you want to add. Then click **Add...**. To copy, edit, or delete a schema, view the schema using the instructions above, then click the appropriate button. See Schemas for more information.

4.4.4.2 Global Settings

This section describes settings that can be configured at the global level only. Global settings can only be modified by administrators (those who have the **Manage Administration** right in the security application). For information on settings that common to both the user and global levels, see User and Global Settings.

4.4.4.2.1 Cipher Specs Tab

On the **Cipher Specs** tab, located on the *Global Settings* window, administrators can deselect the Cipher specifications that they do not want displayed in the application.

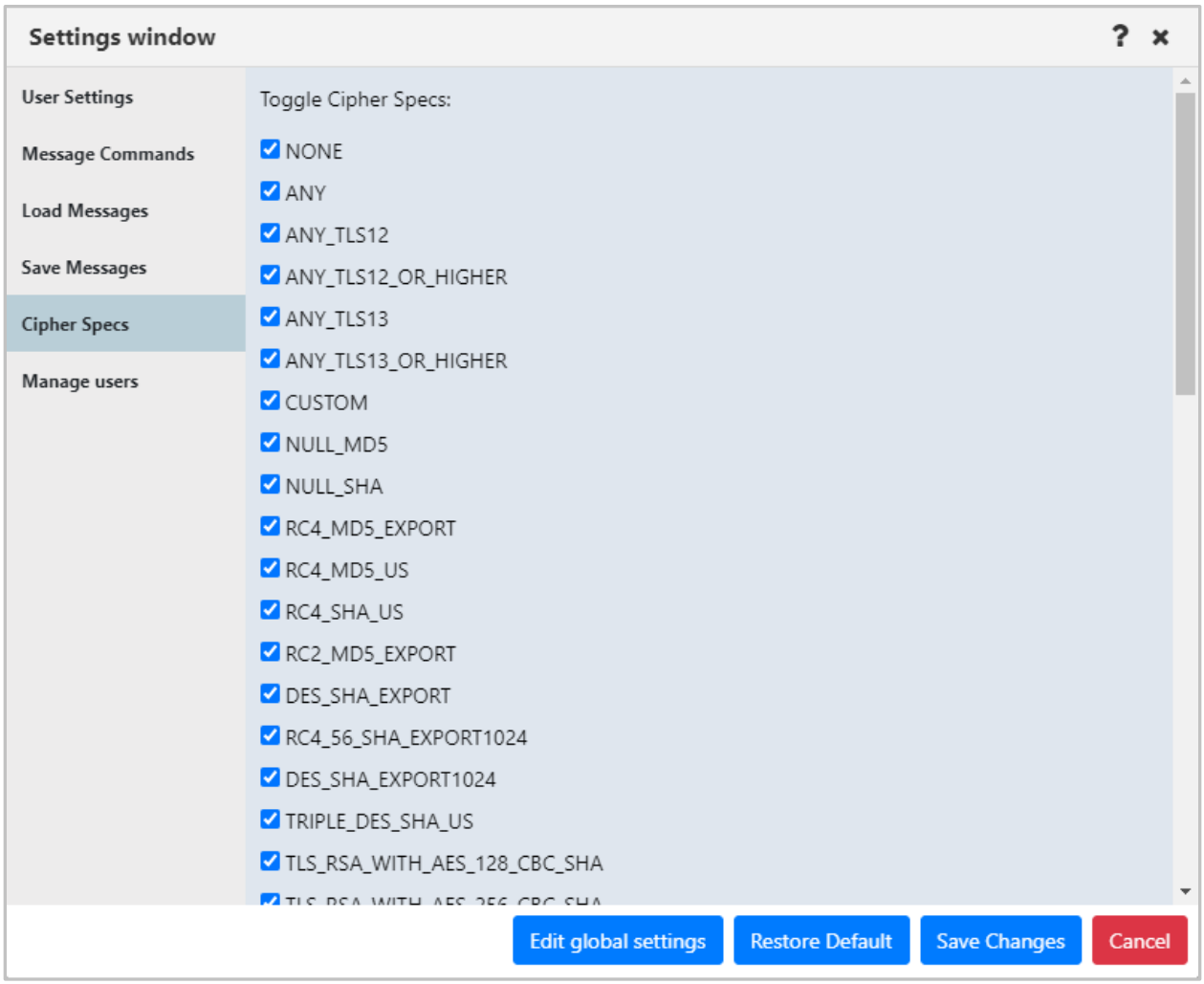


Figure 4.4.4.2.1-A. Cipher Specs

4.4.4.2.2 Manage Users Tab

- On the **Manage users** tab, located on the *Global Settings* window, administrators can reset a user's settings back to the default settings or delete the user using the buttons provided.
- Deleting a user does not prevent that user from logging in. Instead, it deletes that user's dashboards, attribute filters, and schemas, including those that have been shared. Please see the important note about shared objects below.

IMPORTANT!

Since members of other groups may be using objects shared by the user you want to delete, when you attempt to delete a user, the Confirm Delete Action dialog provides a warning. It shows the total number of objects that the user shared (even if that user later unshared them). The only shared dashboards that are counted in this message are the ones that are in use (at least one other user has added the dashboard to their current view).

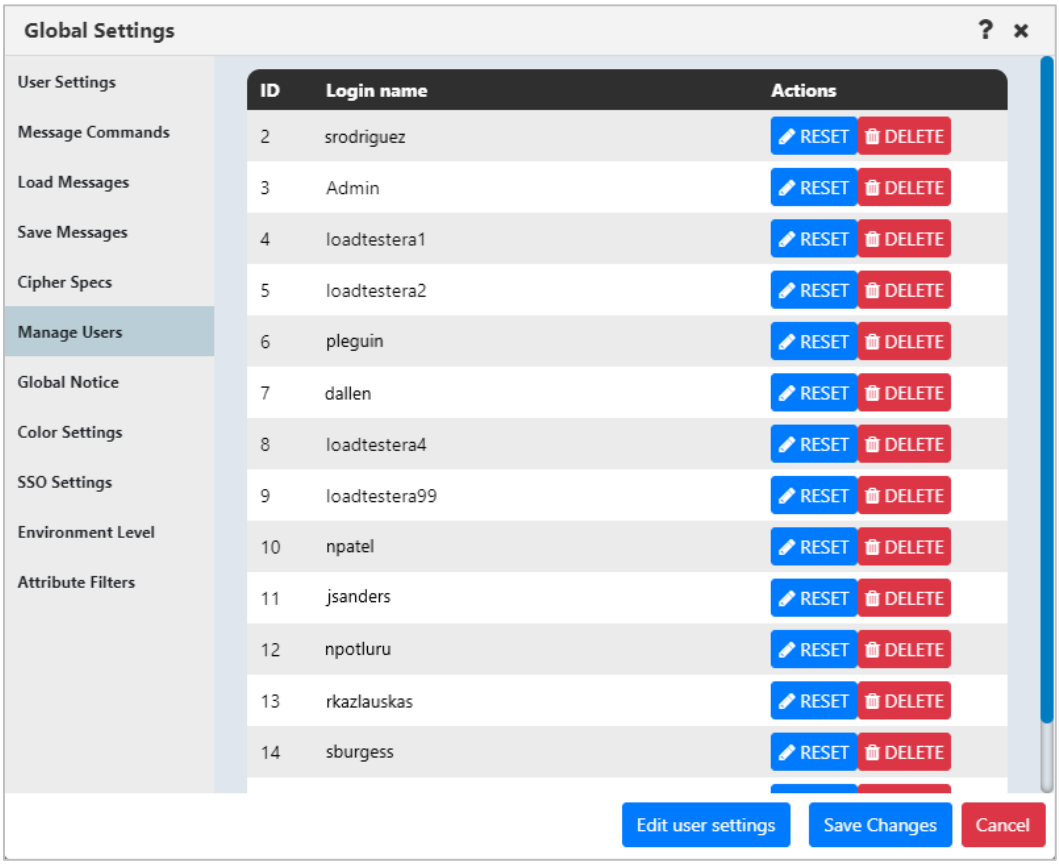


Figure 4.4.4.2.2-A. Manage Users

4.4.4.2.3 Global Notice Tab

The global notice feature on the *Global Settings* window allows administrators to add banner messages that display across the top of the application window. For example, a custom banner could be used to announce scheduled maintenance to all users. A user can close a banner message, but it will be displayed again the next time the user logs in. See the example below.

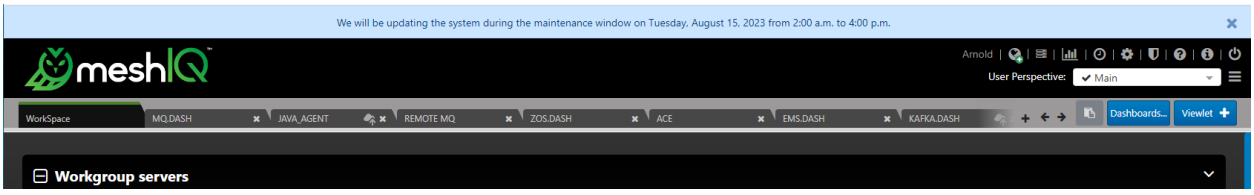


Figure 4.4.4.2.3-A. Custom Banner

Click the **Edit global settings** button located at the bottom of the *User Settings window*.

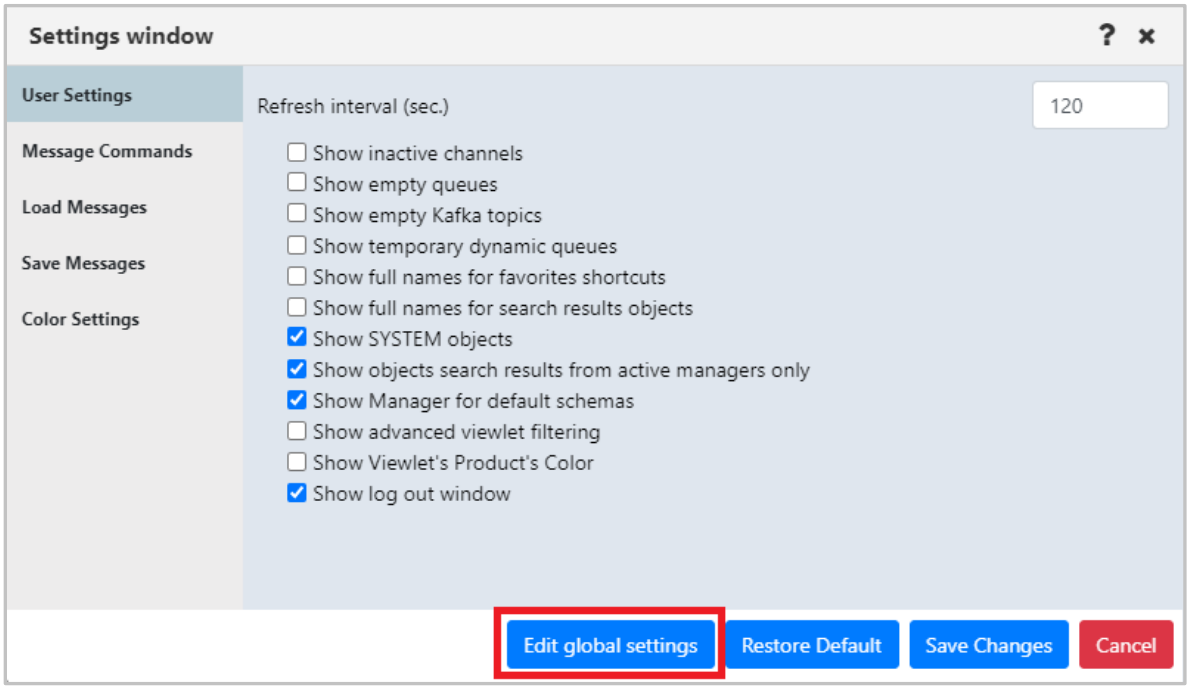


Figure 4.4.4.2.3-A. Edit Global Settings

Go to the **Global Notice** tab and enable the **Display custom notice** option. Enter the desired message within the text box. Please note, the message can have a maximum of 4000 characters.

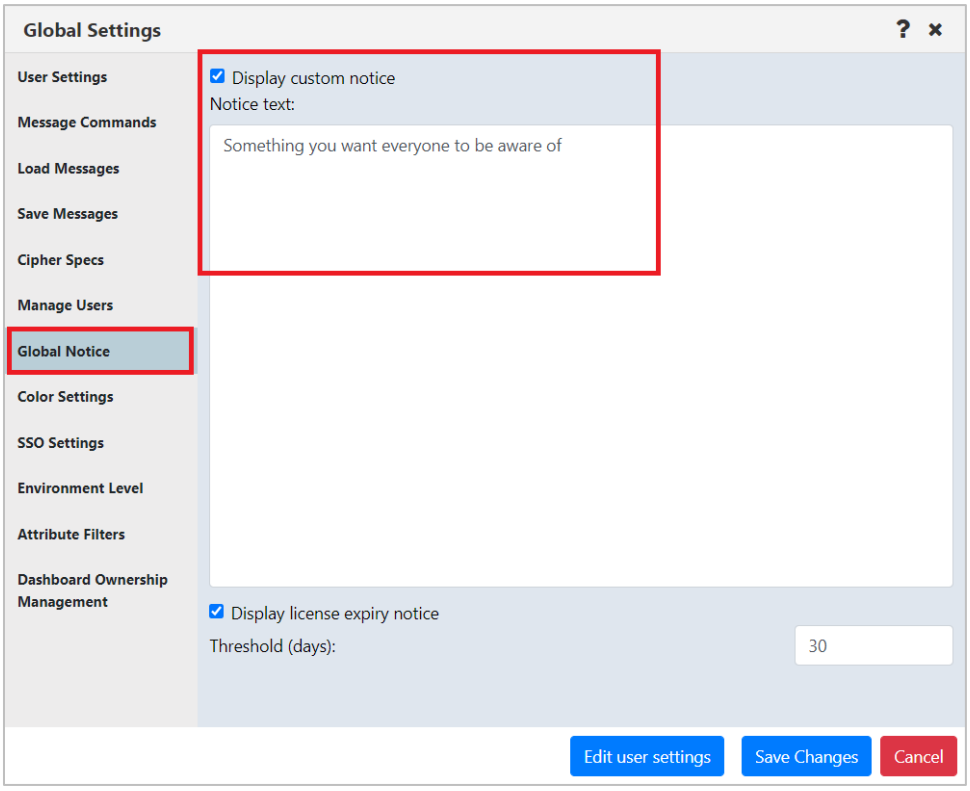


Figure 4.4.4.2.3-B. Enable Global Notice and Enter Message

Click **Save Changes** when finished. From this point forward, all users will see this message display at the top of their screen.

Administrators can also choose to display a warning banner at the top of the application window when a workgroup server license is approaching its expiration date. Select the **Display license expiry notice** check box, and enter the number of days in advance that you want the banner to be displayed (prior to the expiration date) in the **Threshold (days)** field. When the license of any connected workgroup server is due to expire in less than this number of days, a license expiration notice appears to inform users of the time remaining.

4.4.4.2.4 Environment Level Tab

On the **Environment Level** tab, located on the Global *Settings* window, administrators can help users identify which environment they are using by adding a label next to the logo, as shown below. You must have the **Manage Environment Level** right to perform the actions described in this section.

Figure 4.4.4.2.4-A. Environment Level Label Example

To turn on the label, select the **Display Environment Level** checkbox on the Environment Level tab.

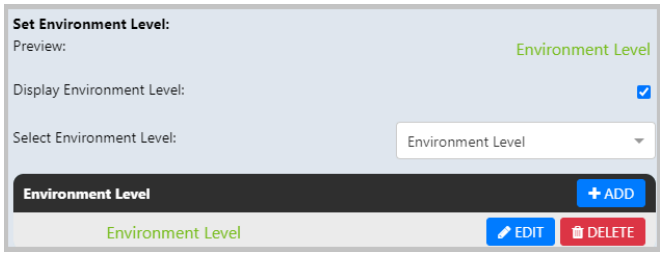


Figure 4.4.4.2.4-B. Set Environment Level

You can format this label whether or not it is currently turned on. Use the *Environment Level Properties* dialog to define a set of colors for the label for each environment, including text, optional text outline, and background color.

Select the **Environment Level** you want to format from the list, and click **Add** to format its label. Set the **Text Color**, **Text Outline**, **Background Color**, and **Text Size**. **Text Outline** and **Background Color** can be turned on and off using the checkboxes. The Preview area shows changes. Click **Save Changes** to return to the *Set Environment Level* dialog.

To edit a format, click the **Edit** button in its row. The *Environment Level Properties* dialog opens. Make changes and save them. To delete a format, click the **Delete** button in its row.

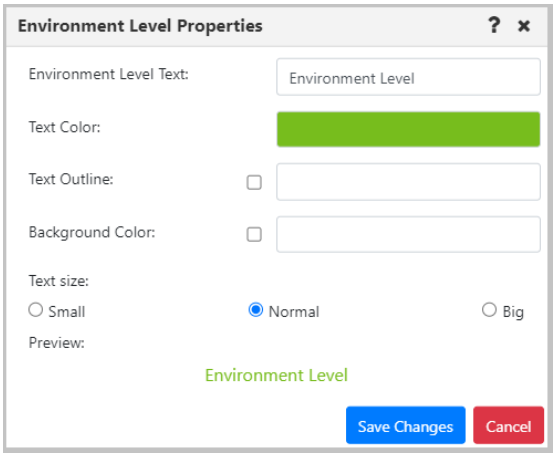


Figure 4.4.4.2.4-C. Environment Level Properties

4.4.4.2.5 Dashboard Ownership Management

Dashboard Ownership Management is located on the *Global Settings* window. This feature is intended to manage the dashboards of inactive users before the users' accounts are deleted. Administrators can use it to change the ownership of an inactive user's dashboard, assigning it to a different user. Dashboard Ownership Management provides access to any dashboard in the system. You can view all dashboards by clicking **Search**.

To search for specific dashboards, use the filter on the Dashboard Ownership Management tab (see Figure 4.4.4.2.5-A). You can search by the **Owner** of the dashboard, by its **Title**, or **All** (both **Owner** and **Title**). Searches are case-sensitive.

For shared dashboards, the Permissions column shows the groups that have been granted permissions for the dashboard. When the ownership of a dashboard changes, its permissions are carried through to the new owner. In the Permissions column, the following codes are used:

- The "(rw)" code means that the group has both read and write permission for that dashboard. This is equivalent to both read and write icons being selected: .
- The "(r)" code means that the group has read only permission for that dashboard. This is equivalent to the read icon being selected: .

To change dashboard ownership, select one or more dashboards that you want to change the owner of. Click **Change Owner** to open the *Change Dashboard Owner* dialog.

Search for a new Owner by entering part or all of the new Owner's name in the search field and clicking **Search**. Click the **Set Owner** button that corresponds to the Owner you want to assign to the dashboard. Read the warning message that is displayed carefully (see Figure 4.4.4.2.5-B). Click **Yes** to continue applying changes.

NOTE

If the changes you have made apply to your own account, you must log out and log in again for them to take effect.

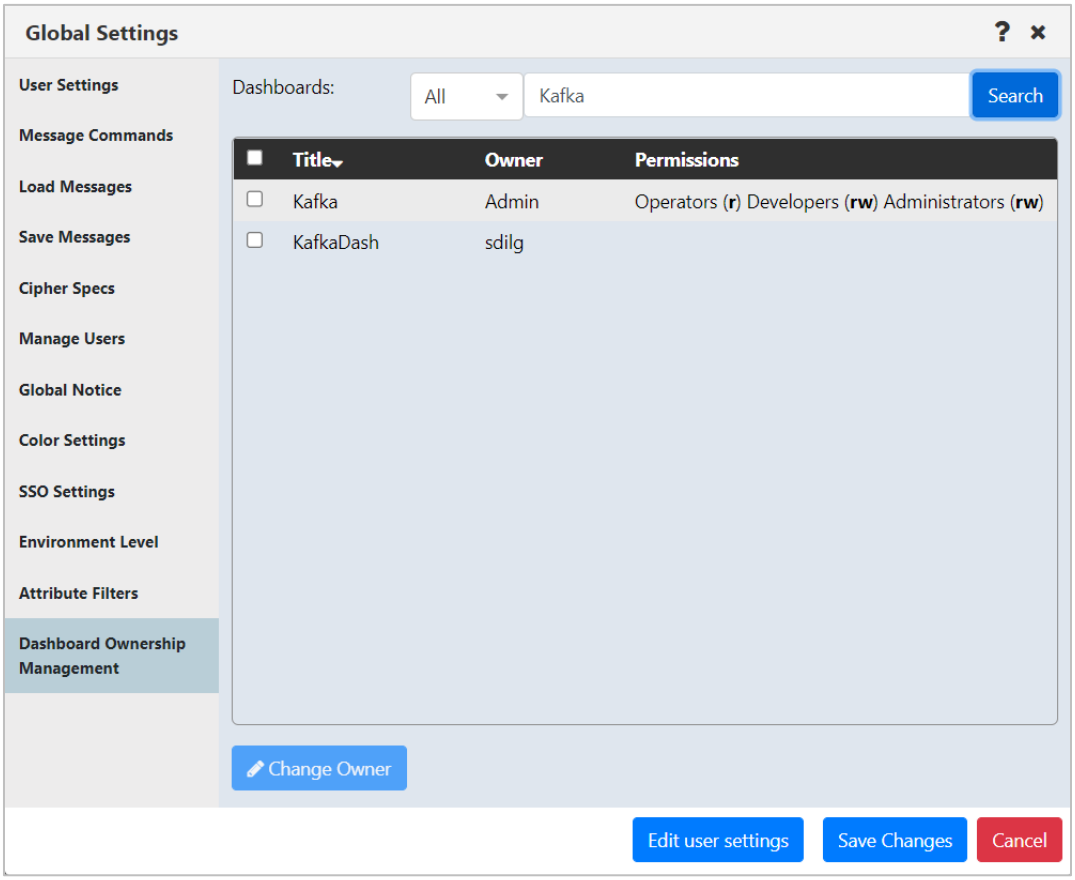


Figure 4.4.4.2.5-A. Dashboard Ownership Management

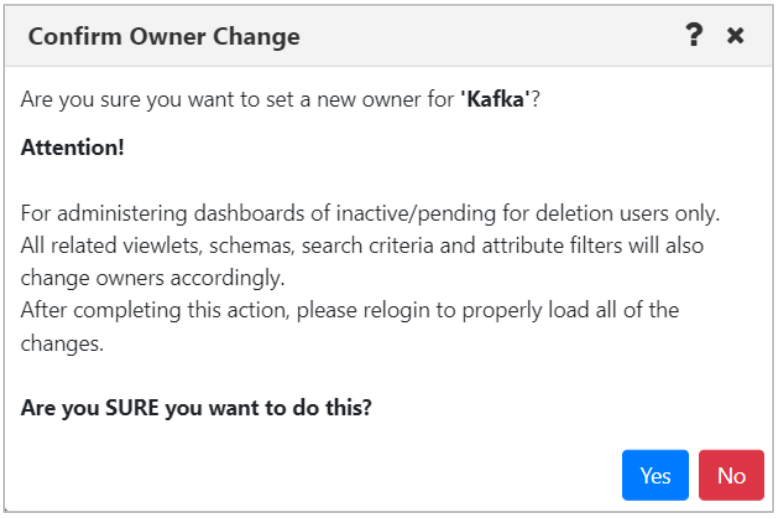


Figure 4.4.4.2.5-B. Confirm Owner Change dialog

4.4.4.2.6 User Object Ownership Management

The User Object Ownership Management feature, located on the *Global Settings* window, is intended to manage the attribute filters, display schemas, and message criteria of inactive users before the users' accounts are deleted. For example, administrators can use it to change the ownership of an inactive user's message criteria record, assigning it to a different user. User Object Ownership Management provides access to any object in the system.

The management of user objects is governed by the **Manage Global Attribute Filters**, **Manage Global Display Schemas**, **Manage Global Message Criteria**, **Manage Shared Attribute Filters**, **Manage Shared Display Schemas**, **Manage Shared Message Criteria**, **Manage Private Attribute Filters**, **Manage Private Display Schemas** and **Manage Private Message Criteria** rights. See Navigator GUI Feature Rights in the *Security Manager User Guide* for details.

To change the owner of a user object, click the User Settings icon , then click **Edit global settings**. Select the *User Object Ownership Management* vertical tab. Three horizontal tabs are displayed: *Attribute Filters*, *Display Schema*, and *Message Criteria*. Select the one that corresponds to the object that you want to change the owner of.

Search for objects using the following steps:

- **Attribute Filters:** Select the Product and Viewlet Type of the attribute filter you want to change the ownership of. Use the Filter list to choose a method to further narrow down results (by the attribute filter's Owner, Title, or All [either Owner or Title]). Enter a search value.
- **Display Schema:** Select the Product and Viewlet Type of the schema you want to change the ownership of. For products that include an Object Sub Type selection, the Object Sub Type *All* shows only schemas that apply to all Sub Types. Use the Filter list to choose a method to further narrow down results (by the schema's Owner, Title, or All [either Owner or Title]). Enter a search value.
- **Message Criteria:** You can view all message criteria records by clicking **Search**. Or use the Filter list to choose a method to further narrow down results (by the message criteria record's Owner, Title, or All [either Owner or Title]). Enter a search value.

Click **Search** to retrieve a list of results (see Figure 4.4.4.2.6-A).

You can view object details by clicking anywhere on the blue bar with the left arrow . (See Figure 4.4.4.2.6-B.) Click the right arrow to collapse details again.

Select one or more objects that you want to change the owner of. Click **Change Owner** to open the *Change User Object Ownership* dialog (see Figure 4.4.4.2.6-C).

Enter part or all of the new Owner's name in the search filter and click **Search**. Click the **Set Owner** button that corresponds to the Owner you want to assign to the object.

Read the warning message carefully. If you are sure you want to continue applying changes, click **Yes** to update the Owner Name for the object. Otherwise, click **No**.

NOTE

If the changes you have made apply to your own account, you must log out and log in again for them to take effect.

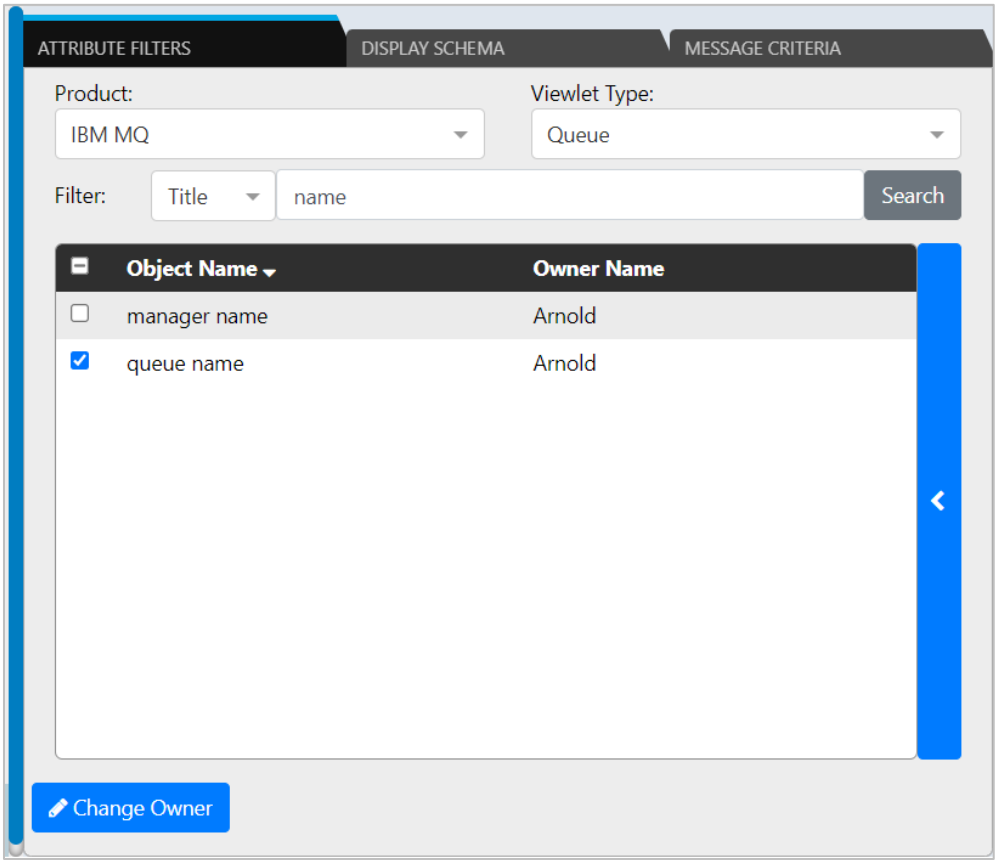


Figure 4.4.4.2.6-A. Object Search

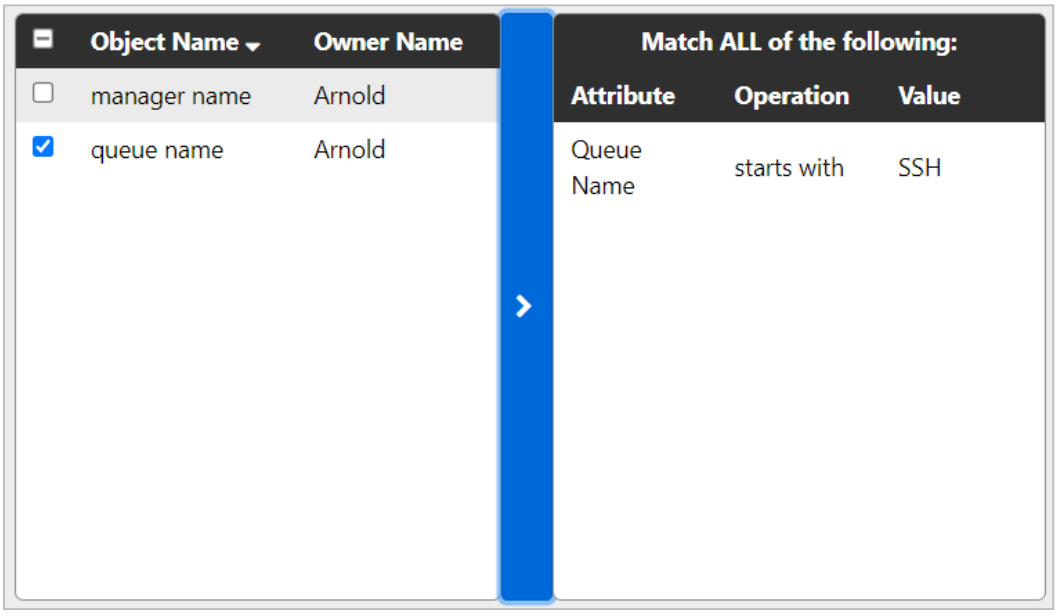


Figure 4.4.4.2.6-B. View Object Details

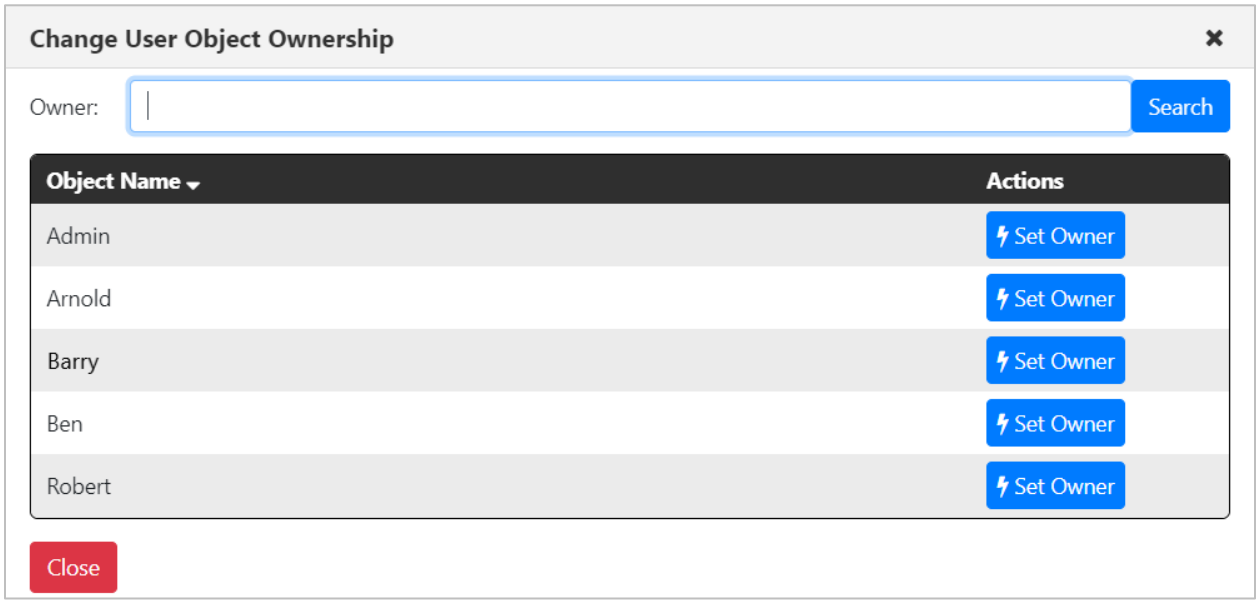


Figure 4.4.4.2.6-C. Set New Object Owner

4.4.5 Request History

Clicking the **Request History** button displays all running and completed tasks.

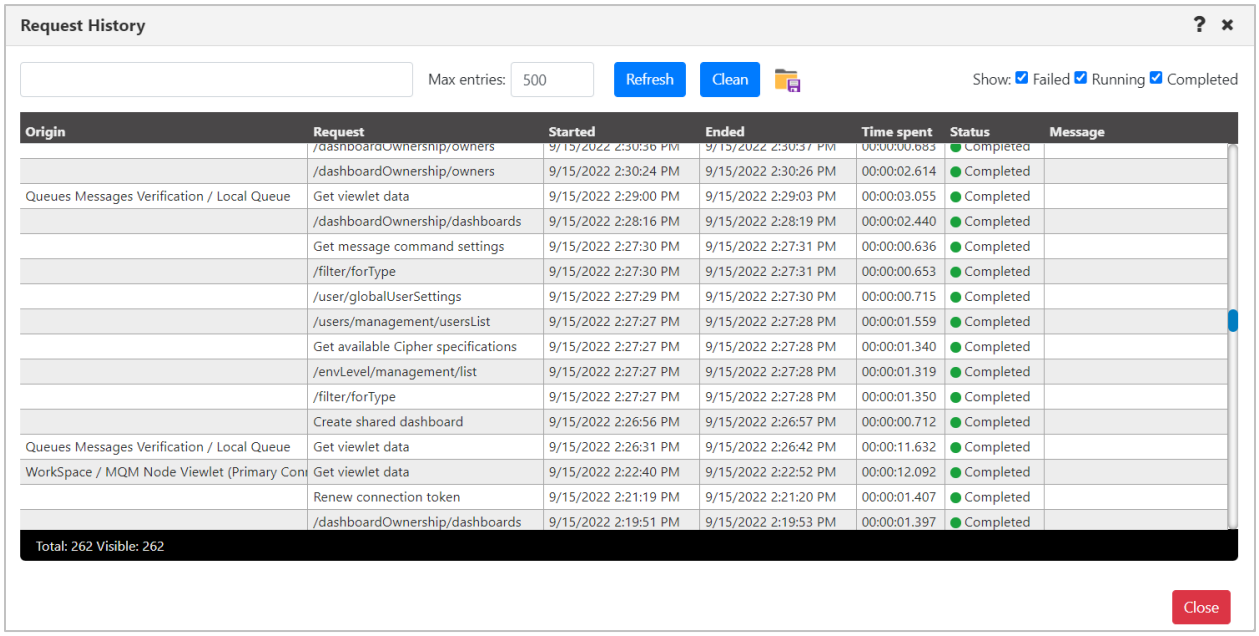


Figure 4.4.5-A. Request History Screen

Several options are available to handle the data displayed:

- Use the **Failed**, **Running** and **Completed** options to filter the history.
- Click the **Clean** button to clear all completed historical requests. Only the requests with a status of *Running* will be displayed.
- To export Request History data to a .csv file to facilitate troubleshooting efforts or investigate performance issues, click the **Save Table As CSV** button (identified by a red border in the screen shot below).

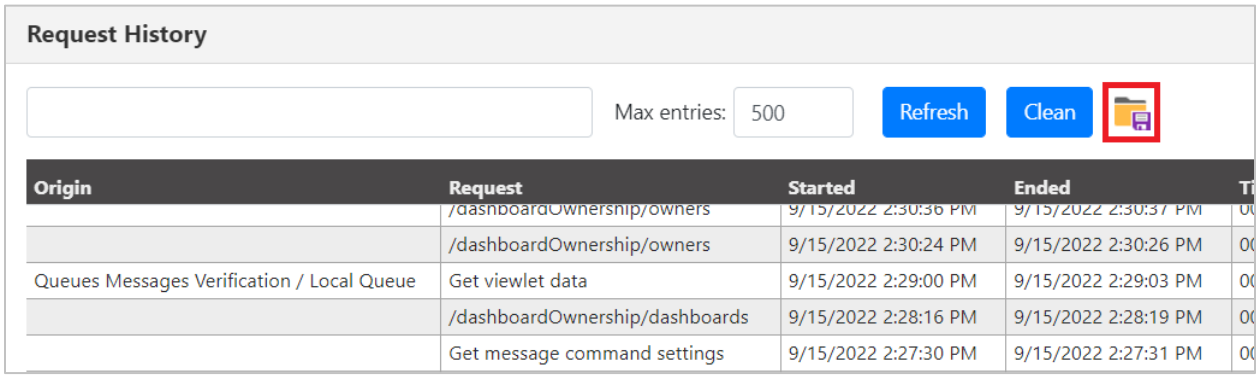


Figure 4.4.5-B. Save Table As CSV Button

4.5 Updating the Configuration File

Some settings are stored in a configuration file rather than on dialogs in the user interface. This section describes two of these settings: the length of time for which user tokens are valid, and the ability to cache key database queries to improve the performance of your system. Both of these configuration settings have default values, but these values can be changed. See the sections immediately below for more information.

4.5.1 Renewing Workgroup Server Tokens

After being inactive for 30 minutes (the default time period) the user will need to renew the workgroup server token. The below warning pop-up notification will appear, and the *Renew Token* dialog box will be displayed (*Figure 4.4.1-A*). Enter the workgroup server's password and click **Renew Token** to continue the session.

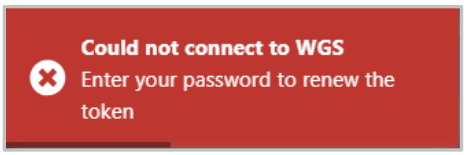


Figure 4.5.1-A. Could Not Connect to WGS

Changing the Token Validation Time Period

Open the **navigator.cfg** file located in:
`<tomcat_dir>\webapps\navigator-server\WEB-INF\classes`

Edit the `tokenLongevity` value to your desired time period, in minutes.

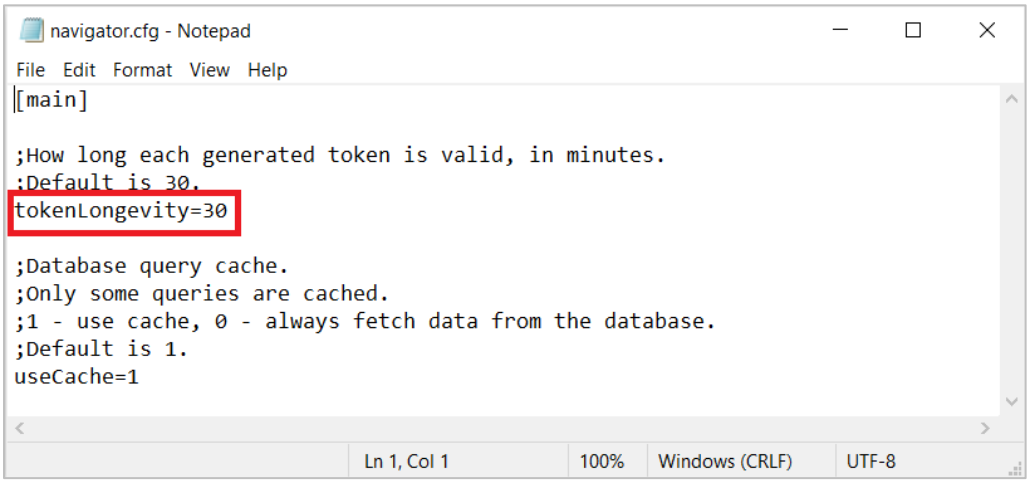


Figure 4.5.1-B. Navigator.cfg – tokenLongevity Value

4.5.2 Caching Key Database Queries

To improve system performance, by default a limited set of database queries are stored within the cache instead of being obtained from the database. These queries capture key information, such as the items listed below:

- User ID
- Global user timeout settings
- User settings

This cached information will expire 90 minutes after the end of your most recent session. After it has expired, values will be obtained from the database.

> NOTE
>
> When key database queries are cached, user permissions are also cached for the current session only. The permissions cache is then reset each time a user logs on. During a session, if that user's permission to perform an action is removed in the security application, and the action requires workgroup server involvement, then the user will not be able to complete the action.

Please keep in mind that, with the exception of user permissions, neither logging in nor logging out of the application has an immediate effect on this cached data. The cached information that is not related to permissions is only considered "expired" when one of the following takes place:

- The 90-minute lifespan of the cache instance (beyond the most recent user session) has elapsed.
- The application or server is restarted.

Changing the Database Query Cache Setting

As stated above, by default this setting is "on" (key queries are cached). If you would like to obtain this queried information from the database instead of from the cache, you can change this setting.

Open the **navigator.cfg** file located in:
`<tomcat_dir>\webapps\navigator-server\WEB-INF\classes`

Edit the `useCache` value to your desired setting: 0 (obtain values from the database) or 1 (used cached values).

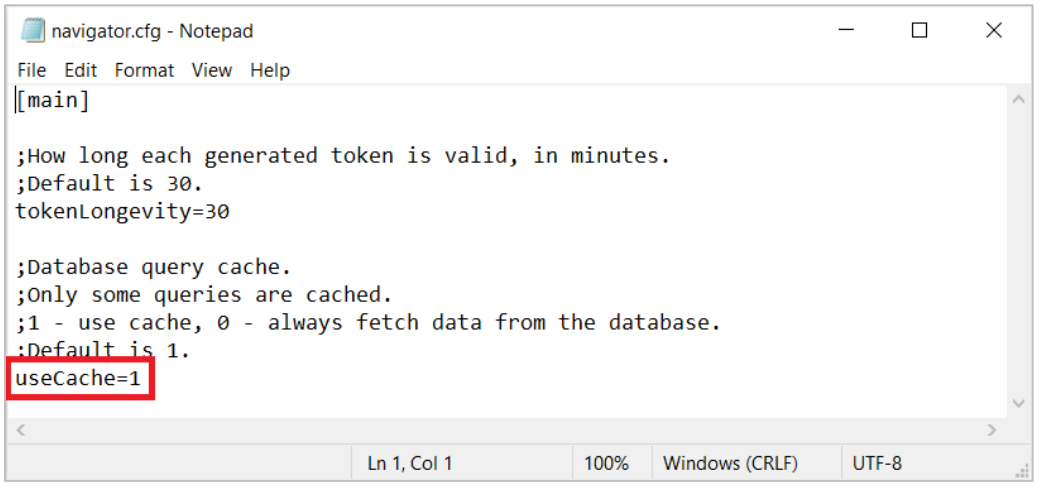


Figure 4.5.2-A. Navigator.cfg – useCache Value

4.6 Scheduling

When you schedule actions for objects, those actions can automatically take place at a later time, such as during a change or testing window.

Actions you can schedule include creating, deleting, modifying, starting or stopping objects. Message actions such as loading messages to a file or clearing a queue can also be scheduled.

> NOTE
>
> Before you can schedule actions, your workgroup server must have the Job Scheduler Expert. Please see the Resource Center article *How do I install the Job Scheduler Expert* for requirements and setup instructions.

4.6.1 Viewing an Object's Scheduled Jobs

There is a clock icon next to the name of each object. The color represents the status of the object's scheduled jobs.

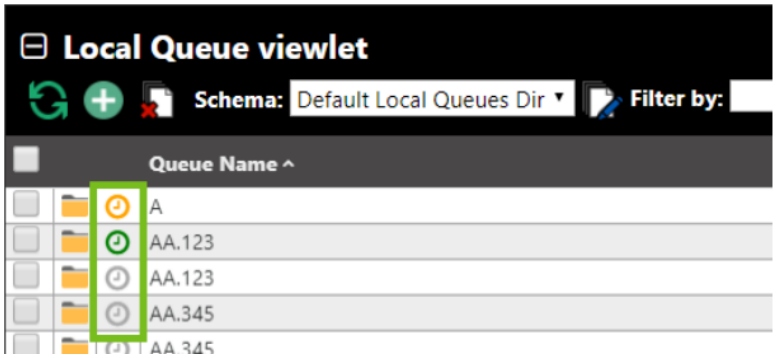


Figure 4.6.1-A. Schedule Icons

– no scheduled items found

– all scheduled items found are complete

– scheduled items are present, and none are pending

– scheduled items include some pending authorization

– some scheduled items failed

To view an object's scheduled jobs, click on its clock icon. A window similar to the following screenshot opens, displaying the object's past and future jobs.

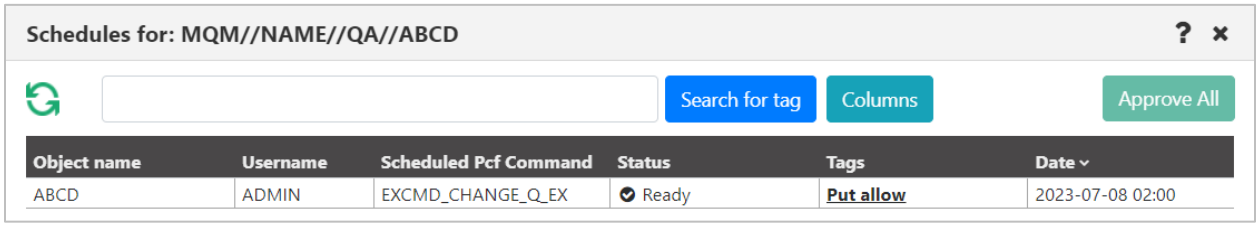


Figure 4.6.1-B. Schedule for an Object

The **Status** field displays the status of the job; potential statuses include Pending, Ready, Retrying, Cancelled, Success, or Failure. The **Tags** field displays the tag (job name) that you specified when the job was created.

4.6.2 Scheduling a Job

Select an object to open its pop-up menu and select the desired action you want to schedule. In the example below, the Start all WMQ objects action is going to be scheduled for two queue managers.

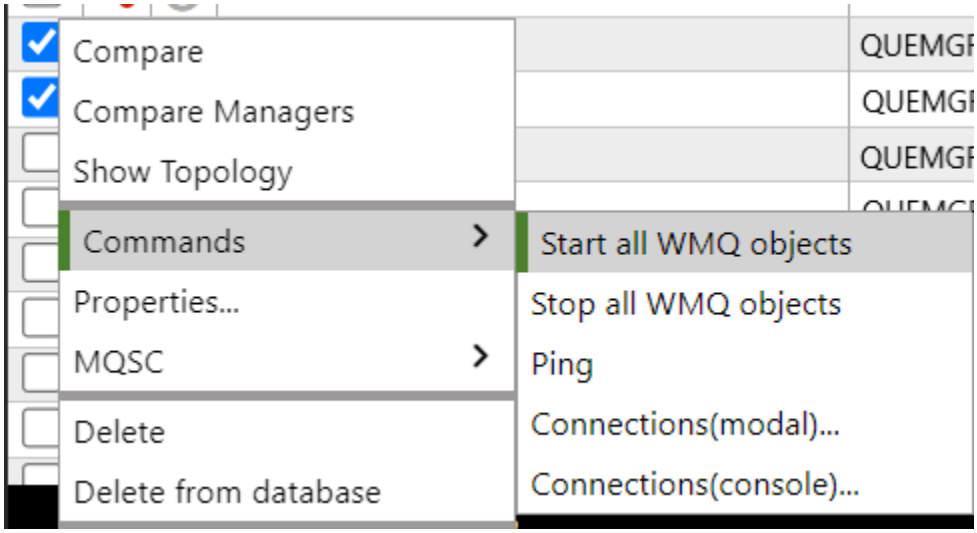


Figure 4.6.2-A. Action to Schedule

On the action window, click the green **Schedule** button.

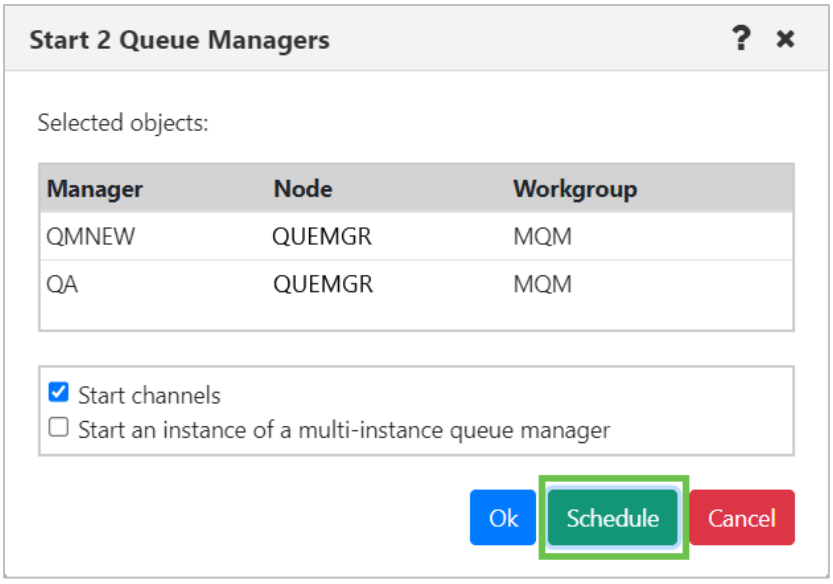


Figure 4.6.2-B. Schedule Button

The *Scheduler* window opens. Enter the date and time. Specify a name for the scheduled job in the **Tag for scheduled job** field. Click **Ok**. The action is now scheduled.

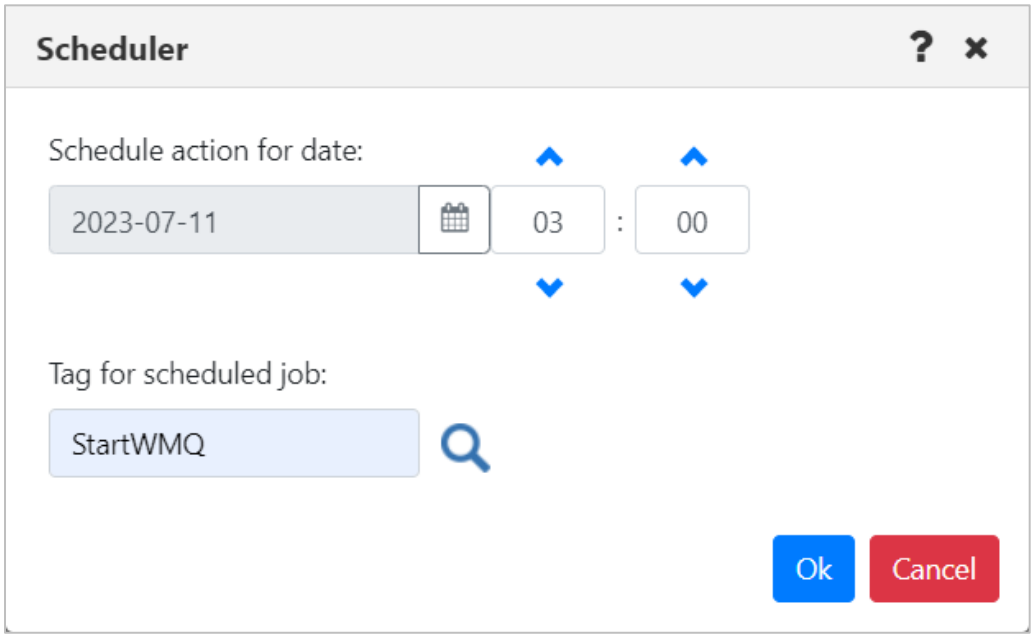


Figure 4.6.2-C. Scheduler Date, Time, and Tag

The object's clock icon will now appear yellow, signifying that the object has a job scheduled but that it has not yet been approved. See the following section for more information.

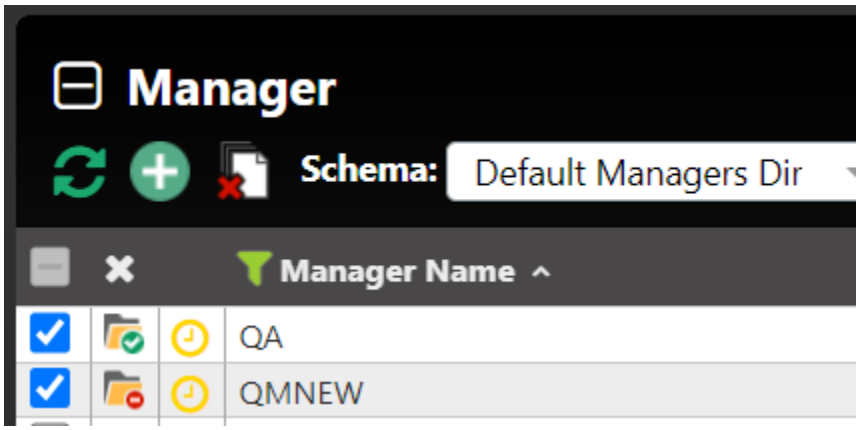


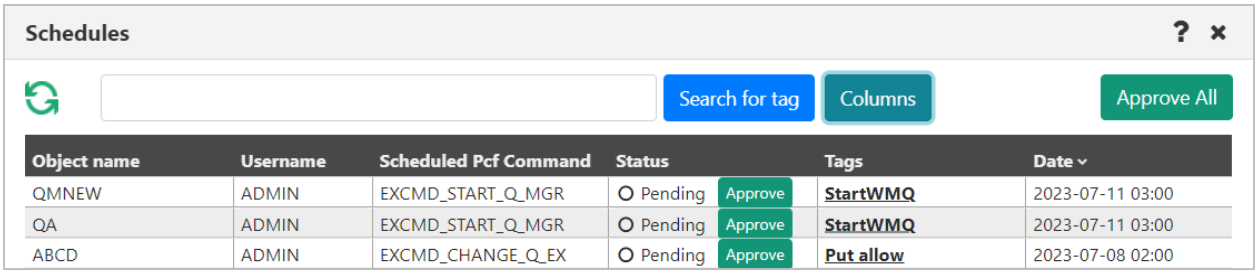
Figure 4.6.2-D. Pending approval

4.6.3 Approving Scheduled Jobs

You must have the **Approve Scheduled Job** right to perform the actions below.

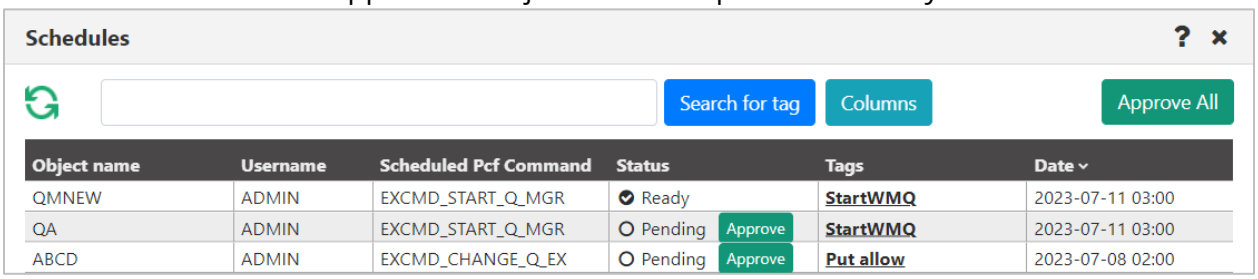
15. To view all scheduled jobs for all objects, click the clock icon from the toolbar at the top right of the screen. Jobs that are pending approval show a status of Pending and

are listed with an Approve button.

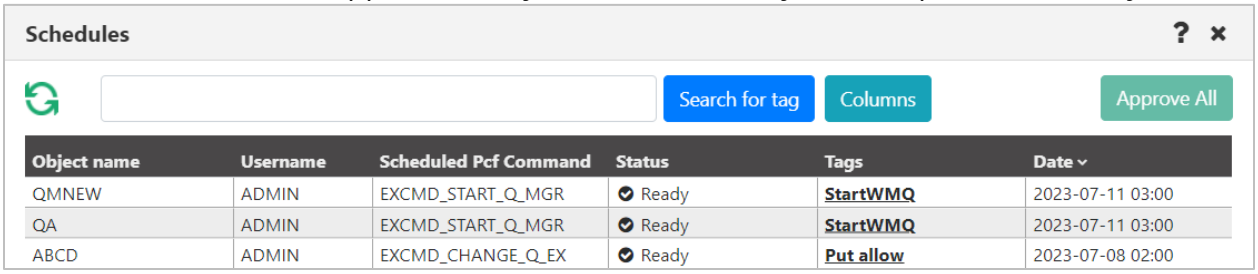


16. Choose one of the following:

- To approve a single job, click the Approve button that corresponds to that job. A Job Approval Action message is displayed.
  Click **Yes** to confirm the approval. The job Status is updated to Ready.



- To approve all Pending or Retrying jobs, click Approve All in the upper right corner of the dialog. A Job Approval Action message is displayed.
  Click **Yes** to confirm the approval. The job statuses for all jobs are updated to Ready.



The clock icons for the ready jobs are now green.

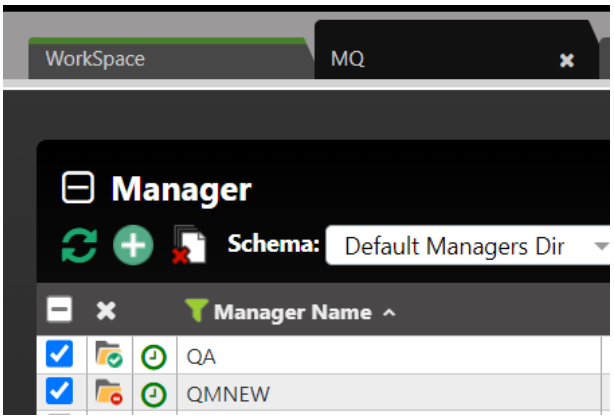


Figure 4.6.3-A. Manager with Approved Scheduled Task

4.6.4 Viewing All Scheduled Jobs

All past and future scheduled actions can be found by clicking the clock icon from the toolbar at the top right of the screen (*Figure 4.4-A*).

The **Schedules** window opens.

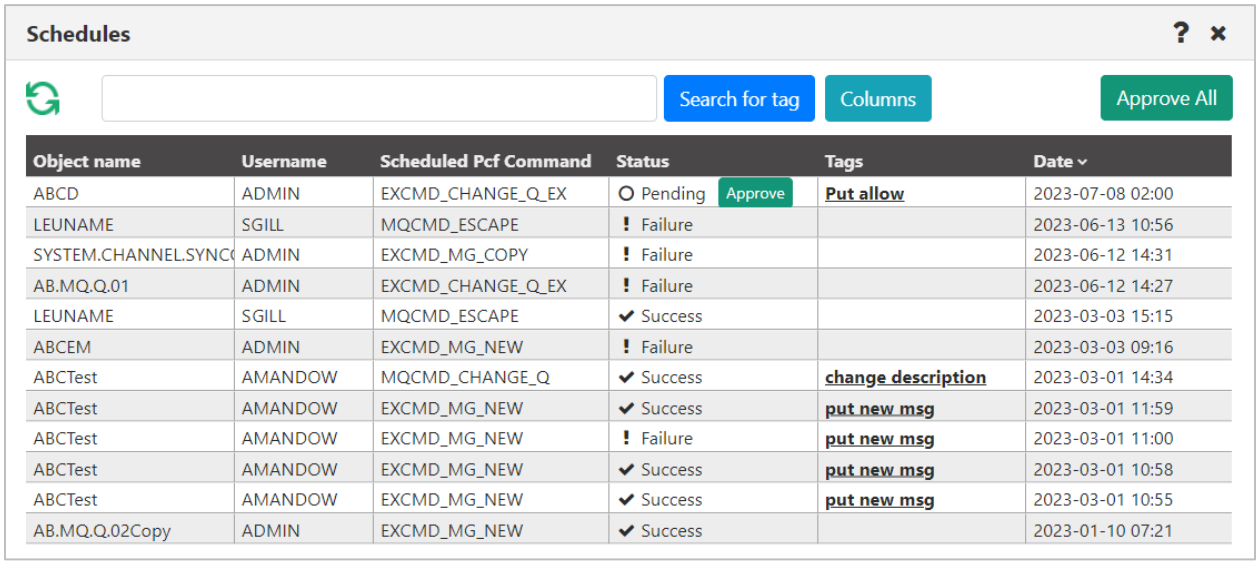


Figure 4.6.4-A. Schedules List

If you have scheduled a command but it does not appear in the list, click the **Refresh** button to reload the screen.

You can choose which columns to display on this dialog by clicking **Columns**. See Choosing Scheduler Columns.

Use the **Search** field to quickly filter and locate a scheduled task by entering its tag name and clicking the **Search for tag** button.

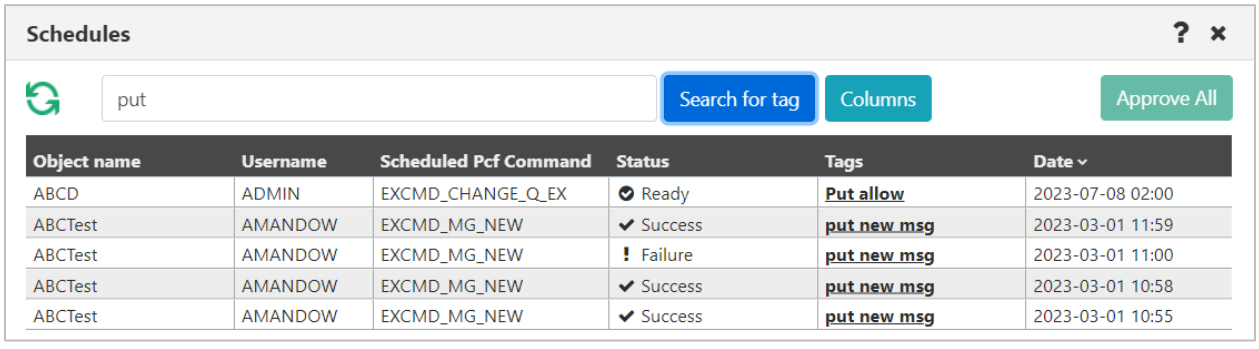


Figure 4.6.4-B. Search for Scheduled Jobs

Select a scheduled job to open the *Scheduled job info* screen where all of the job's details are displayed.

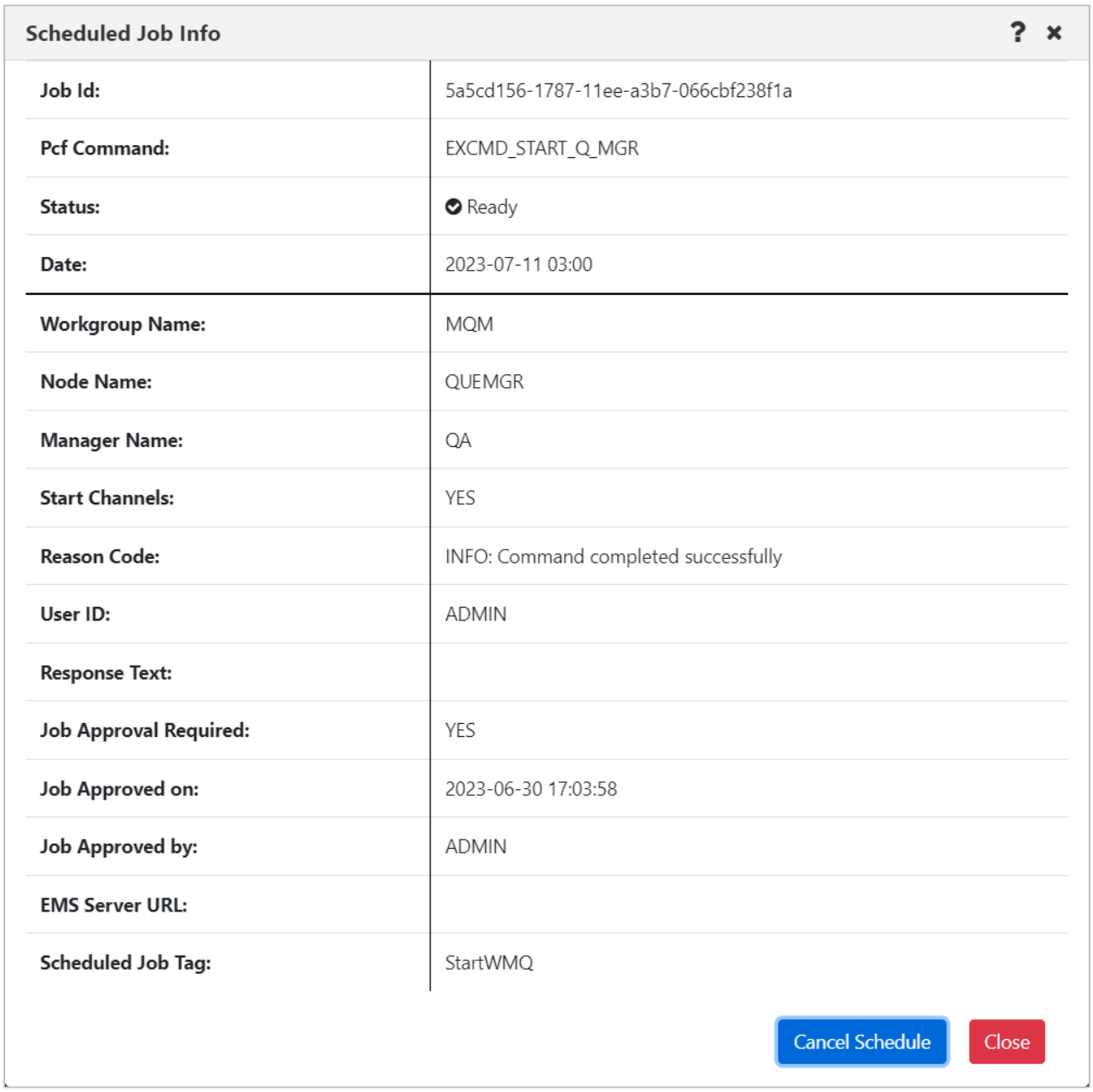


Figure 4.6.4-C. Scheduled Action Details

In version 11, scheduled job details (EXCMD_INQUIRE_JOB) also return EXCA_RESPONSE_TEXT. Response Text will only have a value if the scheduled request was an Escape command.

NOTE

The amount of data displayed in the Response Text row is limited to 2 KB.

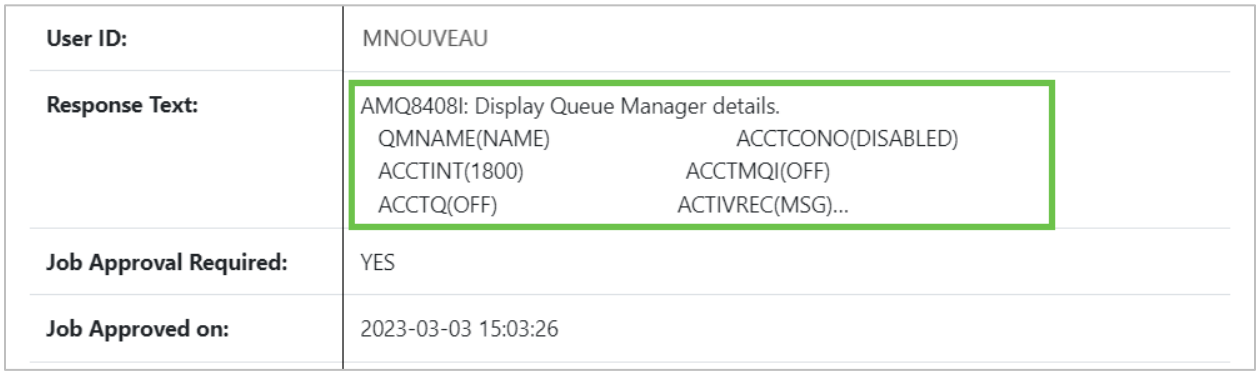


Figure 4.6.4-D. Response Text Details

You can then click the Response Text details to expand the row to include the full response.

4.6.5 Cancelling a Scheduled Job

Scheduled jobs can be cancelled from the *Scheduled job info* screen displayed above. Click the blue **Cancel Schedule** button at the bottom of the screen to cancel the job.

4.6.5.1 Choosing Scheduler Columns

To choose which columns you want to include on the table of scheduled jobs on the Schedules dialog, click **Columns** at the top of the dialog. Select the checkboxes of the columns you want to display, and clear the checkboxes of the columns you do not want to display. Click **OK**.

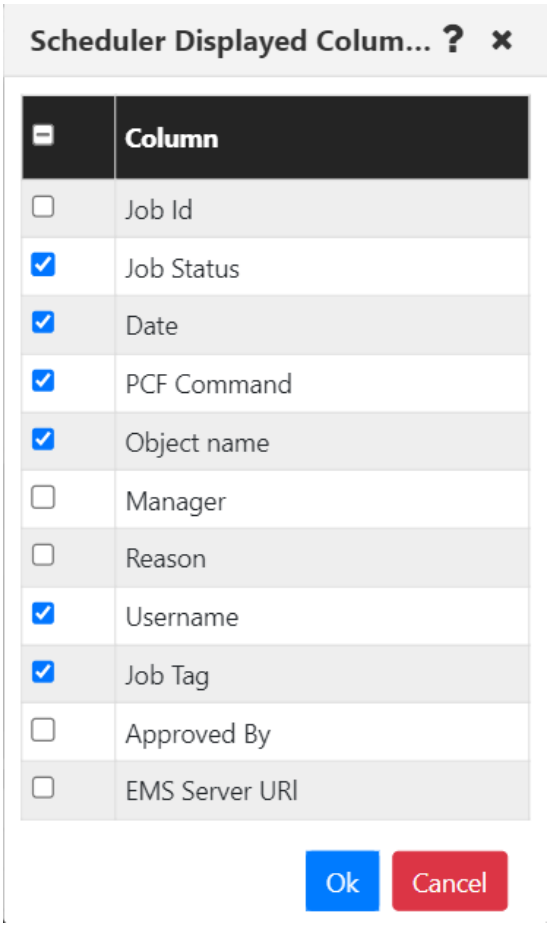


Figure 4.6.5.1-A. Selected Scheduler Window Columns

4.7 Create Objects

There are two methods to create objects which are discussed in the below sections. For information on creating nodes, remote queue managers and remote EMS managers, see sections *4.2.2.1.1*, Create a Node, *4.2.2.1.2*, Create Remote Queue Managers and *4.2.2.1.3*, Create Remote EMS Manager.

Method #1

Select the **Create** option from an object's pop-up menu. Objects created in this manner will automatically take on the path of the selected object. The dialog windows that will appear are described in sections *4.7.1* – *4.7.4* below.

Method #2

Click the **Add** button within an object's viewlet. The *Select object path* window opens allowing you to fully customize the path of the new object.

Select the workgroup server, node, and queue manager to create a specific path for the new object. Use the drop-down menus to select your options, or type your entries into the fields. Leave an asterisk to create a new object in every node and queue manager of the selected WGS.

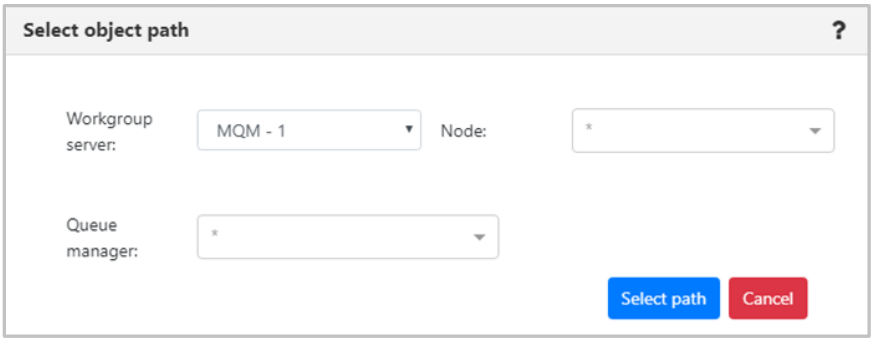


Figure 4.7-A. Select Object Path

Multiple nodes and queue managers can be selected at a time; a new object will be created in each selection. Remove unwanted items by simply clicking the **X** icon immediately to the left of an item's name or clear an entire field by clicking the **X** icon on the right side of the field.

Click **Select path** to save. The following sections discuss the dialog windows that appear for each object.

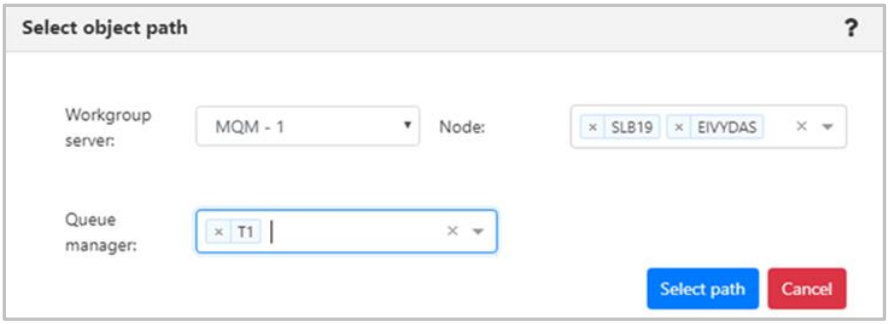


Figure 4.7-B. Select Object Path – Multiple

4.7.1 Create Process

In a Process viewlet, after clicking the **Add** button or selecting **Create Process** from the pop-up menu, the following window appears to customize the properties of the new process being created.

Populate the fields on the **General** and **Extended** tabs. Click **Ok** when finished to create the process.

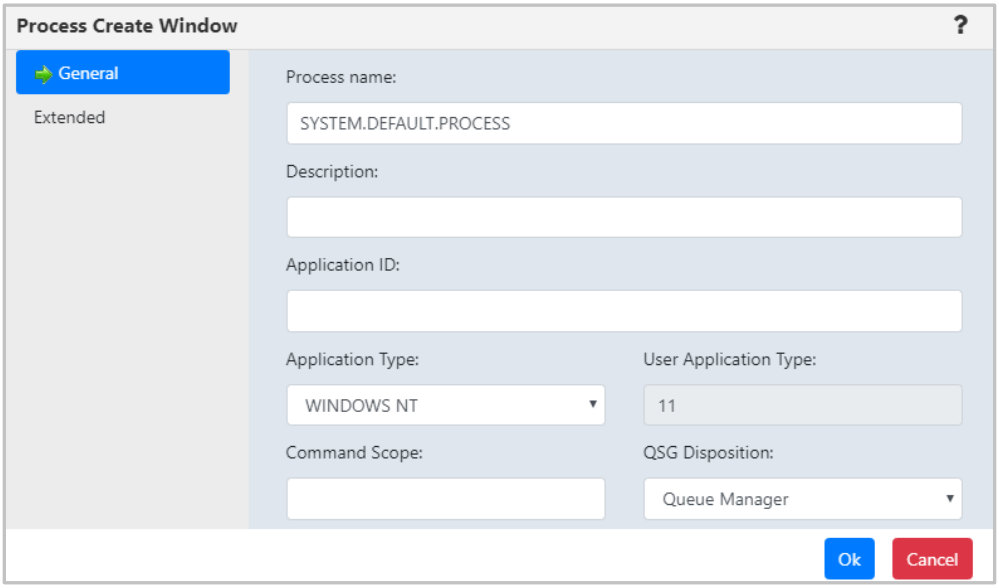


Figure 4.7.1-A. Process Create Window

4.7.2 Create Queue Manager

From a Queue Manager viewlet, select **Create Queue Manager** from the pop-up menu to open the *Queue Create Window*. Enter the new queue manager name (required) and populate other needed details. Enable the **Make this default queue manager** checkbox if you would like it to be the default queue manager the applications connect to when there is no queue manager specified. Click **Next** and update options on the proceeding windows as needed.

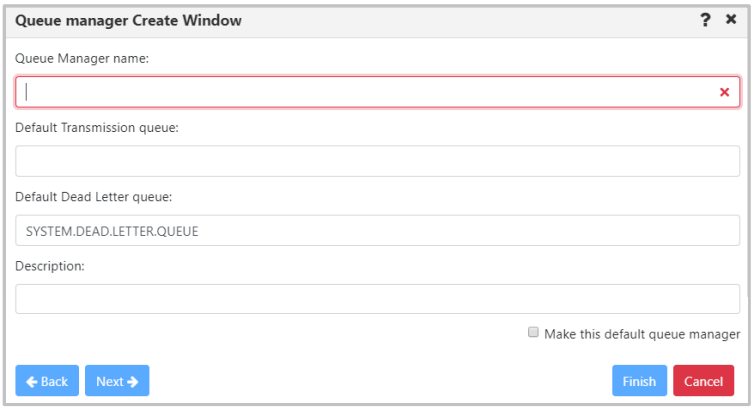


Figure 4.7.2-A. Create Queue Manager Window

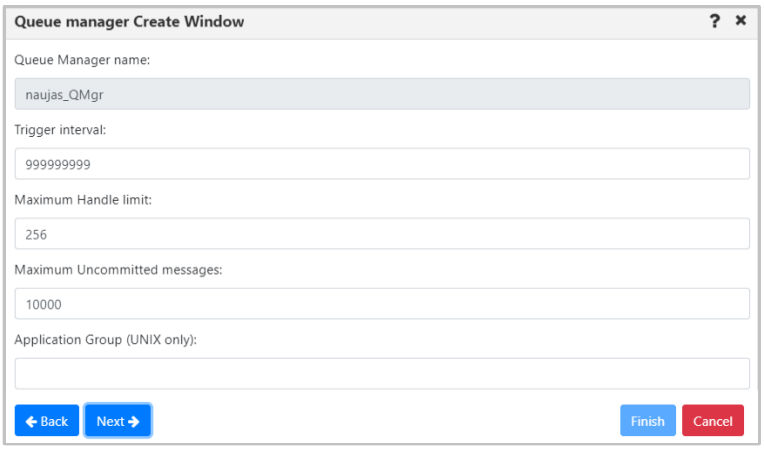


Figure 4.7.2-B. Create Queue Manager Window

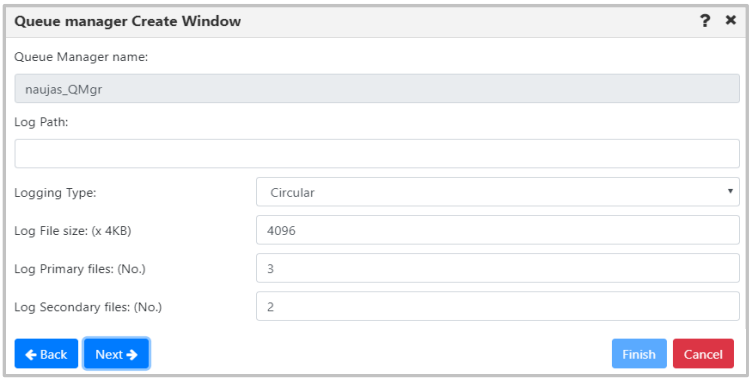


Figure 4.7.2-C. Create Queue Manager Window

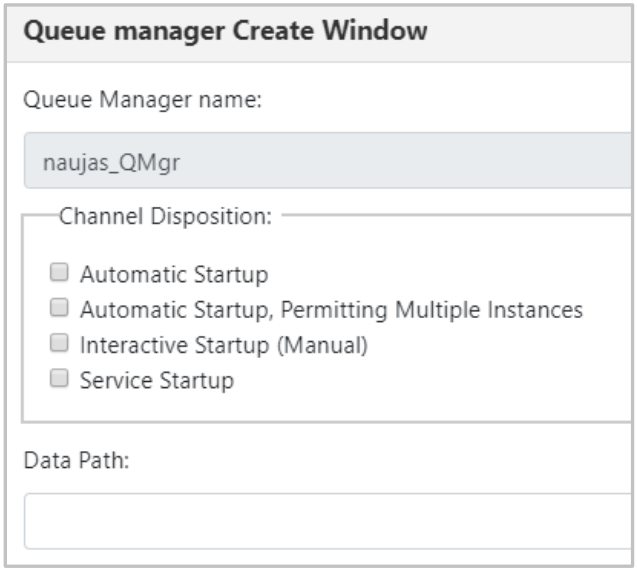


Figure 4.7.2-D. Create Queue Manager Window

On the last screen, click **Finish**. The new queue manager is now created.

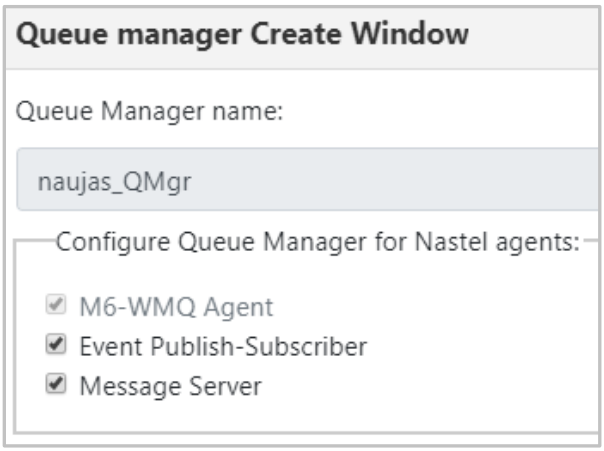


Figure 4.7.2-E. Create Queue Manager Window

4.7.3 Create Topic

For information on the properties which can be modified when creating a topic, please see the online IBM documentation: *https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.ref.adm.doc/q087060_.htm*

See *Custom Attributes* for information on adding custom attributes to a topic (done on the **Custom Attributes** tab).

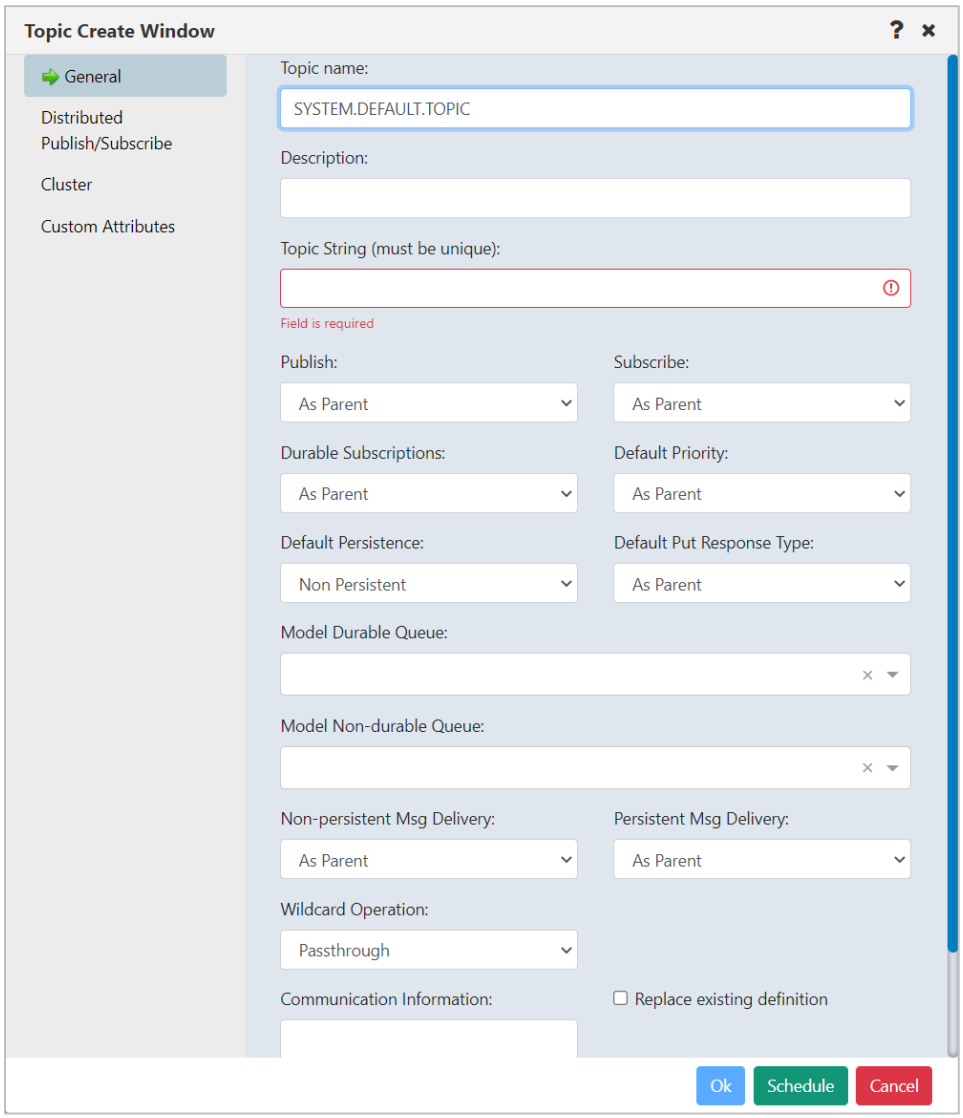


Figure 4.7.3-A. Topic Create Window

4.7.4 Create Queue

From a Queue viewlet, select **Create Queue** or **Create EMS Queue** from the queue's action menu or click the **Add** button.

Specify a Path for the New Queue

If the **Add** button was clicked, the *Select object path* window will open. Specify the workgroup server, node, queue manager (leave the asterisk to create a new queue in all of the workgroup server nodes and queue managers) and object subtype (*local*, *model*, *alias*, *remote* and *cluster* queues can be created). Click **Select path** to open the *Queue Create* window and move on to the next section.

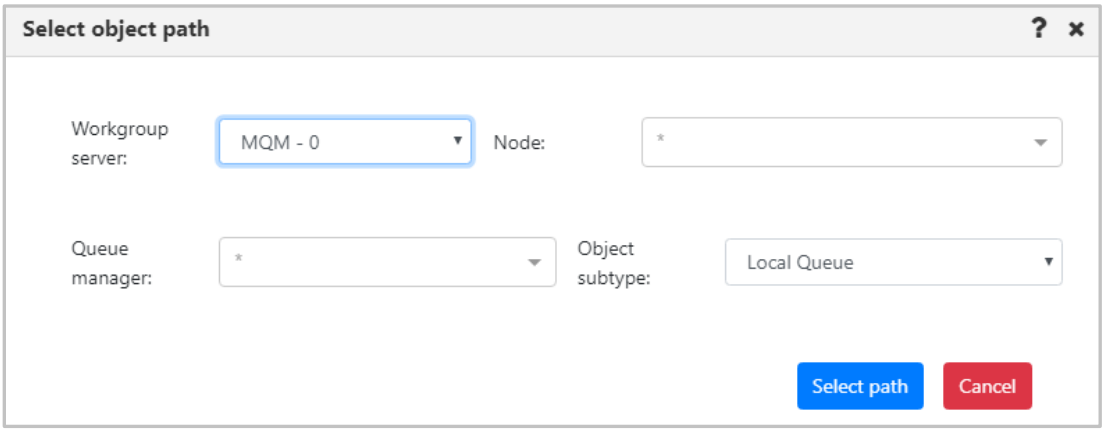


Figure 4.7.4-A Create Queue – Select Object Path

Specify Queue Properties

When the *Queue Create Window (Figure 4.7.4-B)* or *EMS Queue Create Window* (*Figure 4.7.4-C*) opens, enter a queue name (required), and specify all desired options. Please see section *4.3.4.2, Queue Properties,* for more information on the queue properties in the *Queue Create Window*.

See *Custom Attributes* for information on adding custom attributes to a queue (done on the **Custom Attributes** tab).

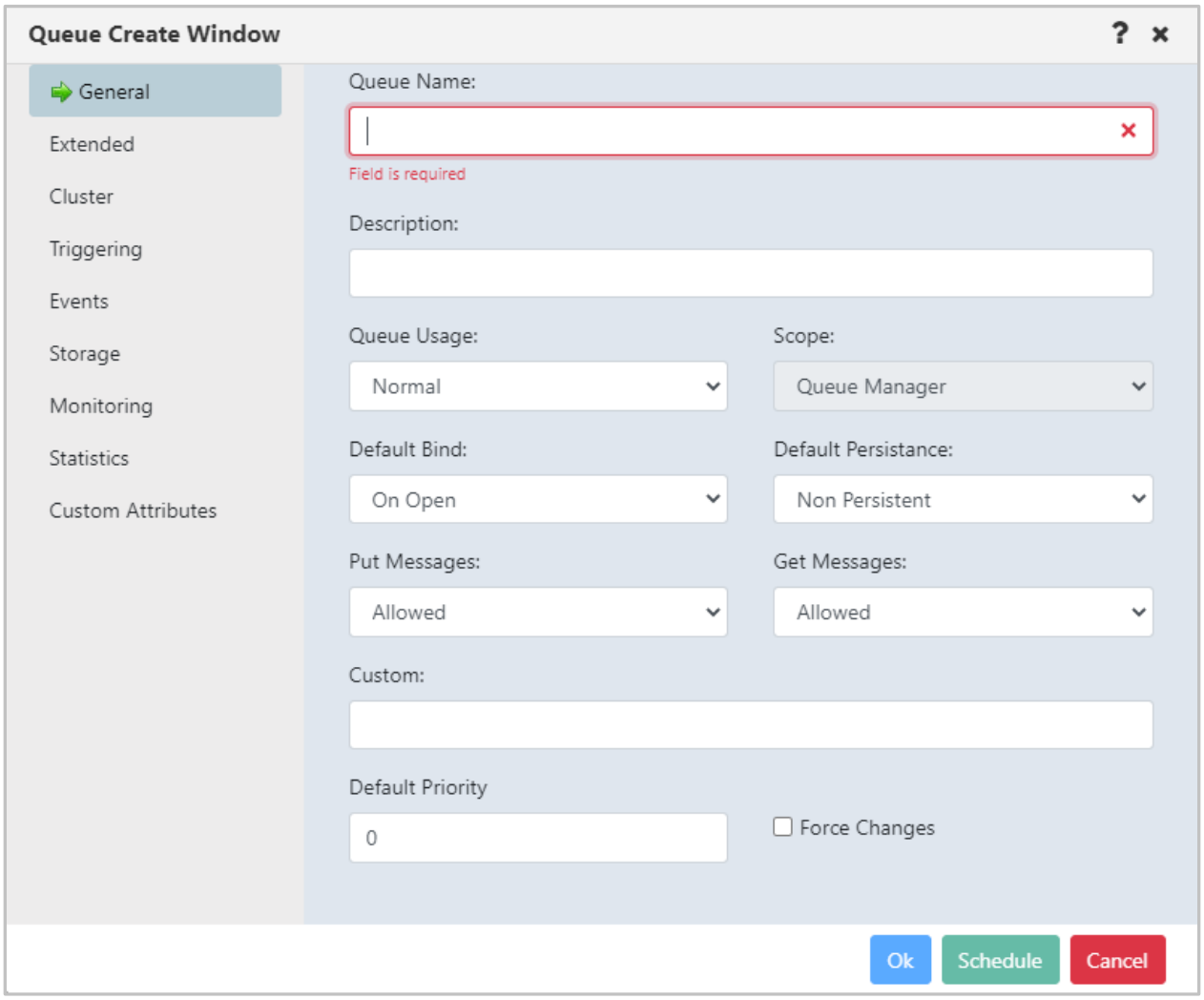


Figure 4.7.4-B. Queue Create Window

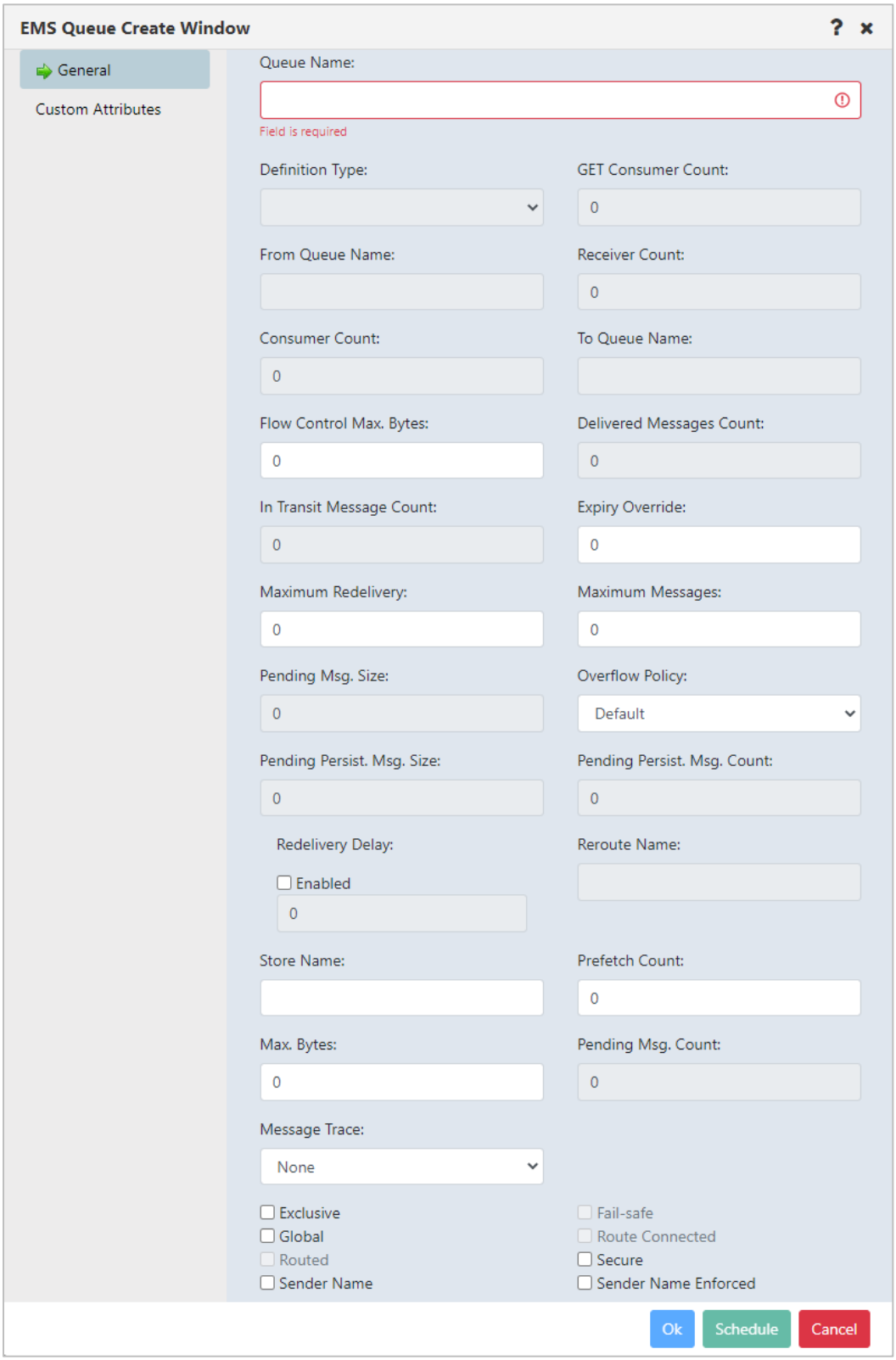


Figure 4.7.4-C. EMS Queue Create Window

TIP

If your newly created queue does not appear in a viewlet even after refreshing it, check if the **Show empty queues** option is selected in the **User/Global Settings** window **> User Settings** tab (Figure 4.4.4.1.1.1-A).

4.7.5 Create Listener

From a Listener viewlet, select **Create Listener** from the pop-up menu or click the **Add** button. The following window appears. Specify the properties of the new listener and click **Ok**.

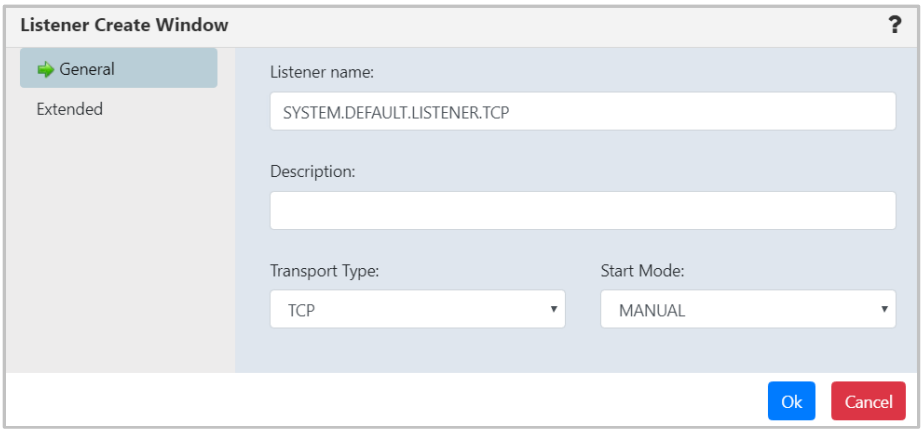


Figure 4.7.5-A. Listener Create Window

4.7.6 Create Subscription

From a Subscription viewlet, select **Create Subscription** from the pop-up menu or click the **Add** button. The following window appears. Specify the properties of the new subscription and click **Ok**.

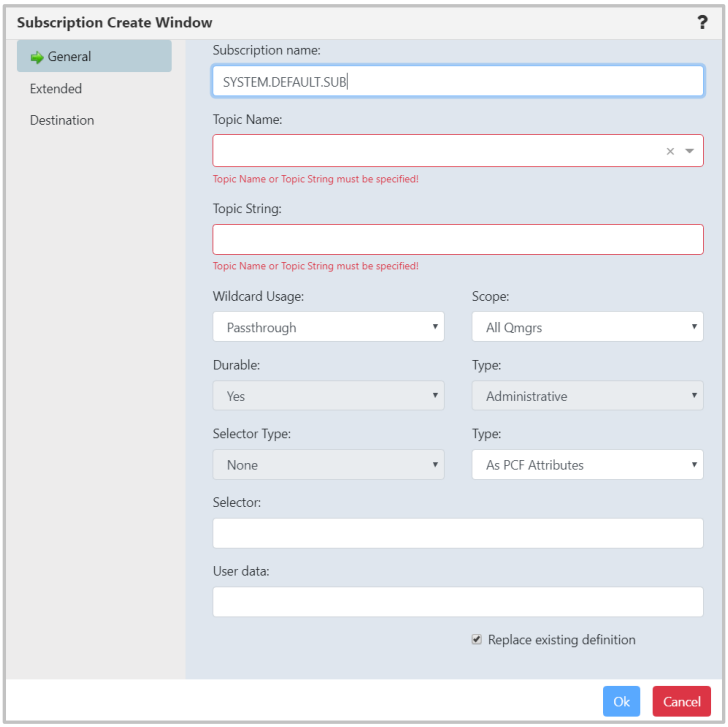


Figure 4.7.6-A. Subscription Create Window

4.7.7 Create Route

Within a Route viewlet, click the **Add** button. The *Select Object Path* window opens; specify the object path of the new route and click **Select path**.

The following window opens. Specify the configurations of the new route and click **Ok**.

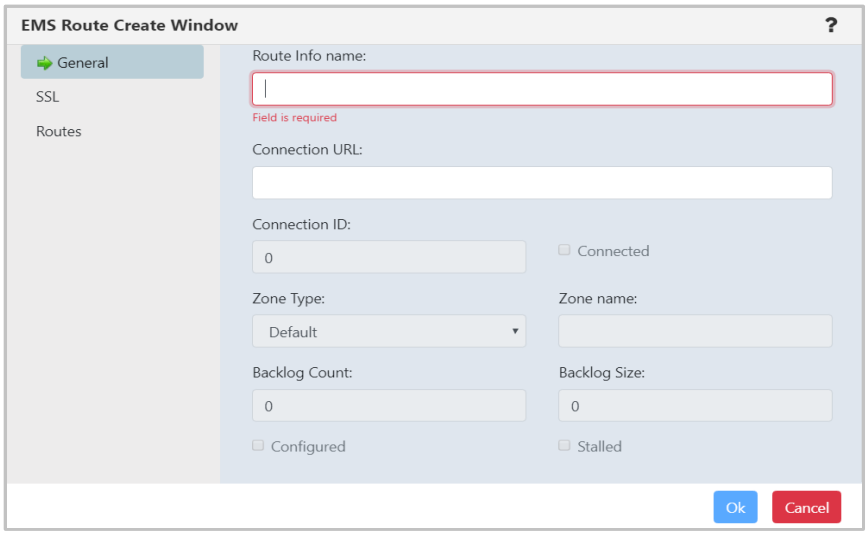


Figure 4.7.7-A. EMS Route Create Window

4.7.8 Create Bridge

Within a Bridge viewlet, click the **Add** button. The *Select Object Path* window opens; specify the object path of the new bridge and click **Select path**.

The following window opens. Specify the configurations of the new bridge and click **Ok**.

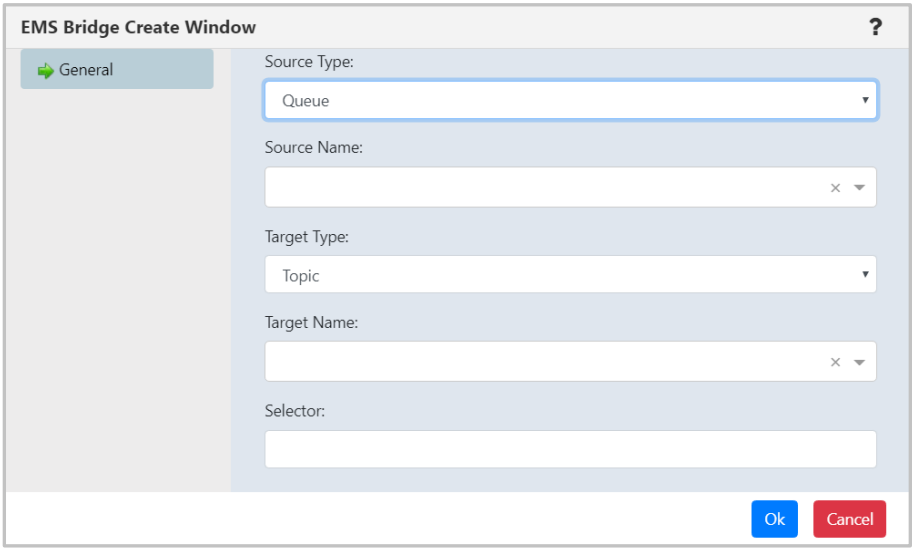


Figure 4.7.8-A. EMS Bridge Create Window

4.7.9 Create Durable

To create a durable, do one of the following:

- **Create a new durable from scratch:** Within a Durable viewlet, click the **Add** button. The *Select Object Path* window opens; specify the object path of the new durable and click **Select path**.
- **Create a new durable based on an existing one:** Select the checkbox for the existing durable. On the actions pop-up menu, select **Commands > Copy As**. Update the name for the new object in the Copy Durable Window.

The following window opens. Specify the configurations of the new durable and click **Ok**.

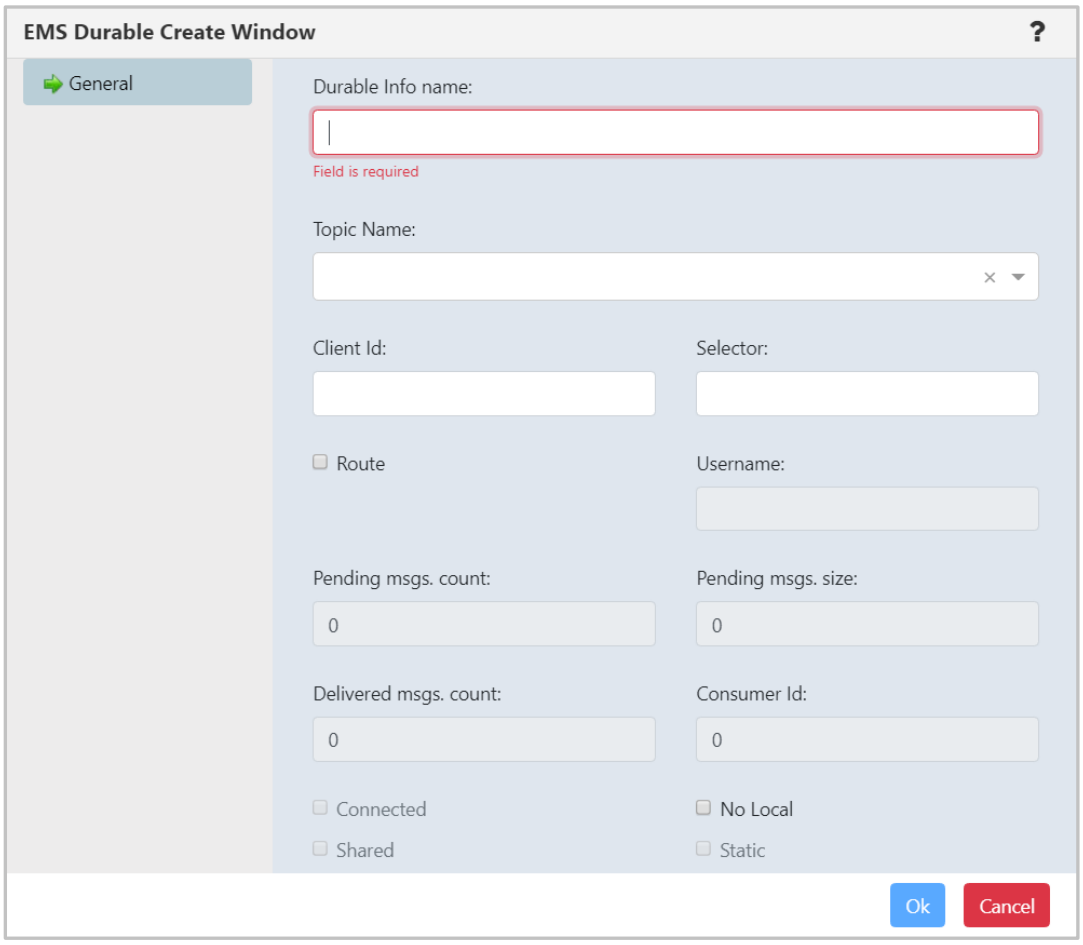


Figure 4.7.9-A. EMS Durable Create Window

4.7.10 Create Channel Authentication Record

Block User Map, *Block Address Map*, *SSL Peer Map*, *Address Map*, *User Map* or *Queue Manager Map* channel authentication record types can be created. To learn more about types, see the following IBM documentation: *https://www.ibm.com/docs/en/ibm-mq/9.0?topic=commands-set-chlauth*.

There are several ways to create a Channel authentication record.

- From a Channel authentication record (channel auth rec) viewlet:
    - Click the **Add** button. The *Select Object Path* window opens. Specify the workgroup server, node, queue manager (leave the asterisk to create a new channel authentication record in all queue managers of the workgroup server) and object subtype. Click **Select path.**
    - Select the checkbox of a Channel auth rec record of the Channel auth type that you want to create, then select **Create ChAuthRec** from the Action menu to create a new record of that type.
- From a Channel viewlet: Select **Create ChAuthRec** from the Action menu of a channel record. The Select ChAuthRec Type dialog opens. Select a **Type** and click **OK**.

The *Channel Authentication Record Create* window opens. For more information, please see the following IBM documentation:

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.0.0/com.ibm.mq.explorer.doc/e_properties_chlauth.html

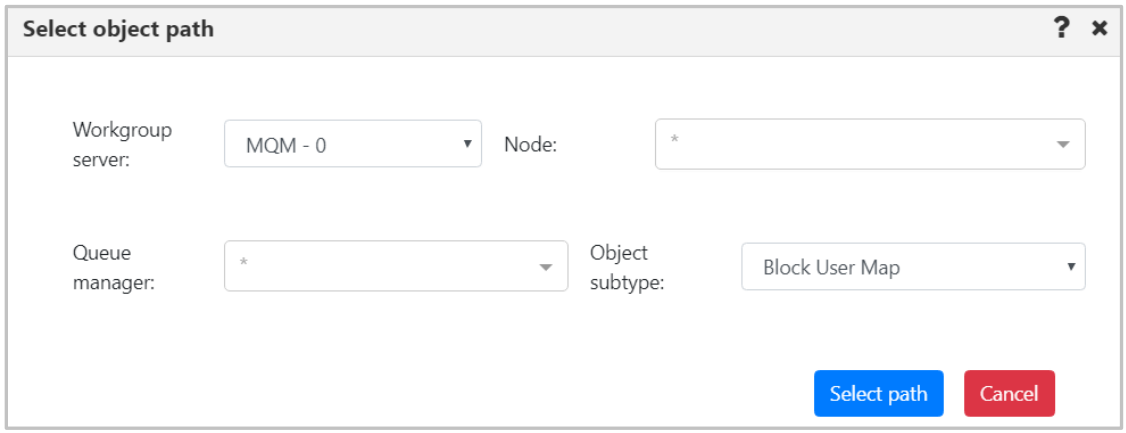


Figure 4.7.1-A. Select Path for Channel Authentication Record

Every channel auth rec type has two common tabs: **General** and **Extended**. On the **General** tab select the channel profile name and add the description. (On versions prior to 11, you must enter the name.)

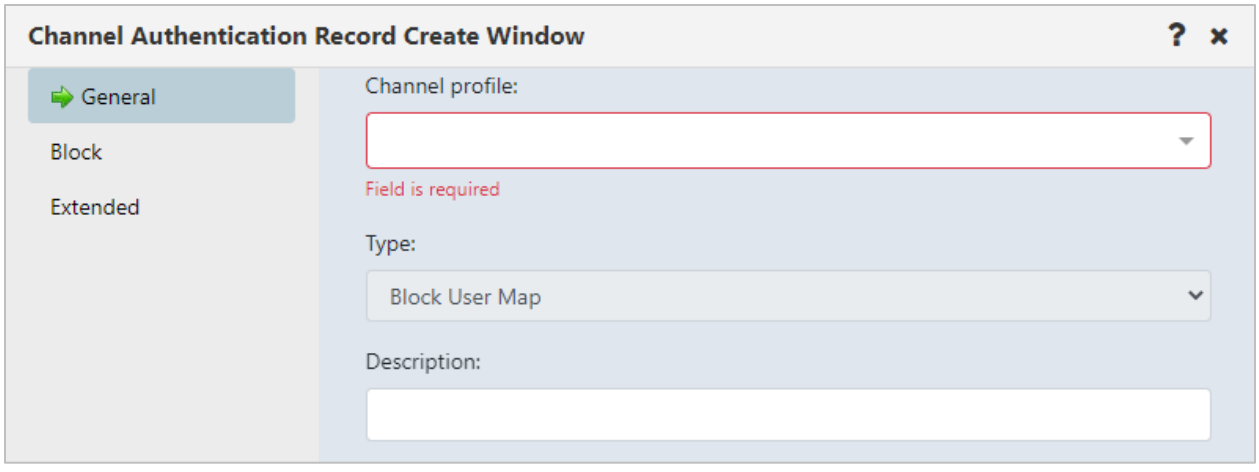


Figure 4.7.10-B. General Tab

On the **Extended** tab, specify **Yes** or **No** from the **Warning** drop-down. Setting this option to **Yes** will use a warning instead of blocking access.

Within the **Custom** field, enter new feature configurations before separate attributes have been introduced.

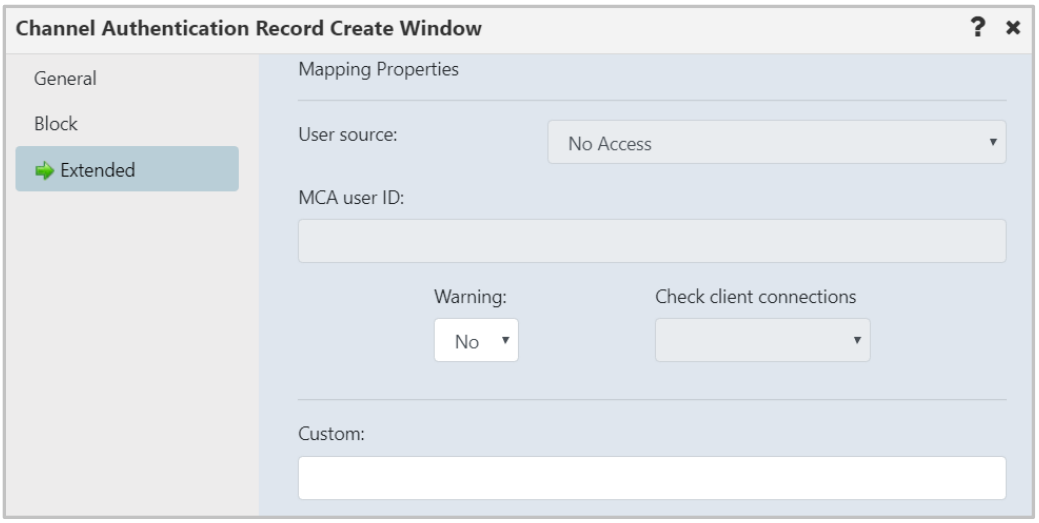


Figure 4.7.10-C. Extended Tab

Block channel auth recs will have the **Block** tab as seen below. Specify users who should not have access to this channel (or channels). Creation of a Block User Map authentication record is displayed in the figure below.

Figure 4.7.10-D. Block Tab

Instead of the **User list** field as seen above, the **Block** tab of a Block Address Map will have an **Address list** field. Enter the IP address(es) or IP address pattern(s) to be blocked from connecting to this queue manager using any channel. The IP address pattern(s) can also include an asterisk as a wildcard to represent one or more parts of the address.

Figure 4.7.10-E. Block Tab

SSL Peer Map, Address Map, User Map and Queue Manager Map records have the **Address** tab. An **Address** field appears on this tab which is used as a filter. Specify the filter to be used to compare with the client or partner queue manager's IP address at the other end of the channel.

Figure 4.7.10-F. Address Tab

SSL Peer channel auth recs have the **SSL Peer** tab. This tab has fields to specify *SSL Peer* and *SSL/TSL Issuer's Distinguished Name*.

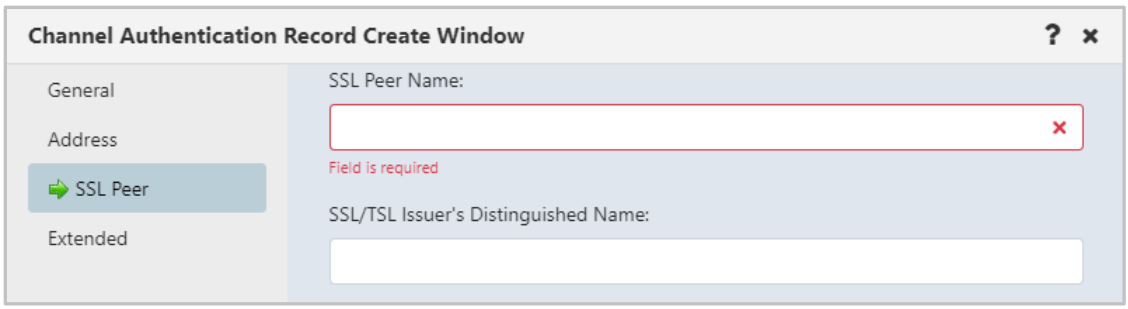


Figure 4.7.10-G. SSL Peer Tab

User Map channel auth recs also have a **ClientUser** tab to specify *Client user ID*.

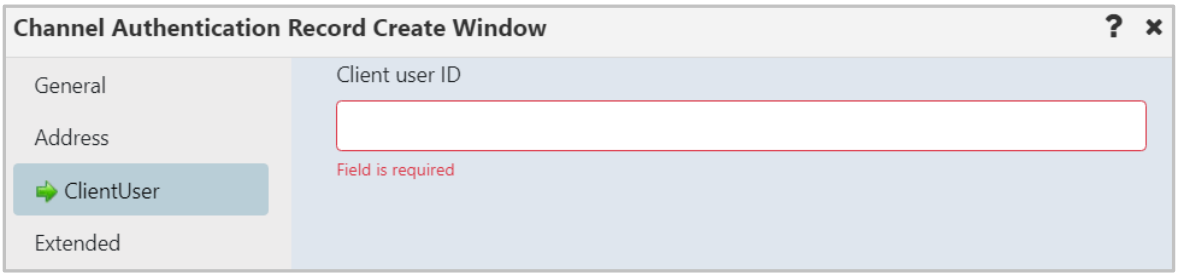


Figure 4.7.10-H. ClientUser Tab

Queue Manager Map records have the **Queue Manager** tab to specify the *Remote queue manager*.

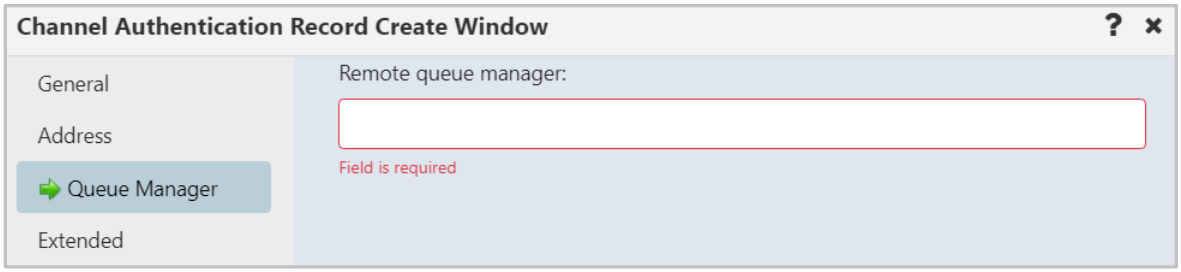


Figure 4.7.10-I. Queue Manager Tab

4.7.10.1 Copy Channel Authentication Record

You can create an exact copy of a channel authentication record or use an existing record as a basis for a new one.

- Use Copy to create an exact duplicate.
- Use Copy As to use an existing record to create a new one with a different name than the original.

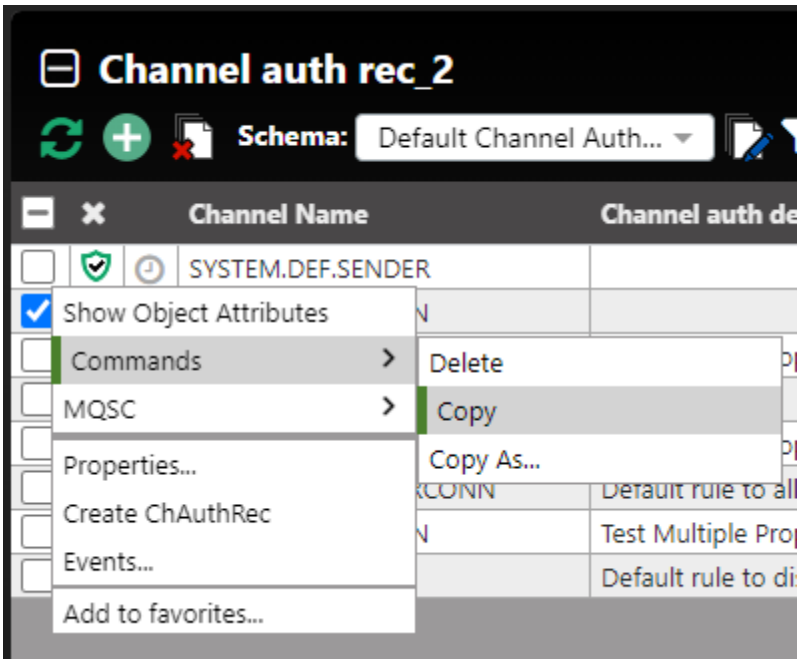


Figure 4.7.10.1-A. Channel Authentication Record Action Menu

To copy a channel authentication record, select **Commands > Copy** from a Channel auth record's pop-up action menu. The **Copy objects to selected path** icon changes color from grey to orange: . Click the **Copy objects to selected path** icon. Choose a path for the new object using the lists provided. Click **Paste**. After the object has been pasted successfully, a green Success Message is temporarily displayed in the lower right corner of the window and the new record appears in the viewlet.

To create a duplicate channel authentication record with a new name, select **Commands > Copy As...** from a Channel auth record's pop-up action menu. The Channel Authentication Records dialog opens.

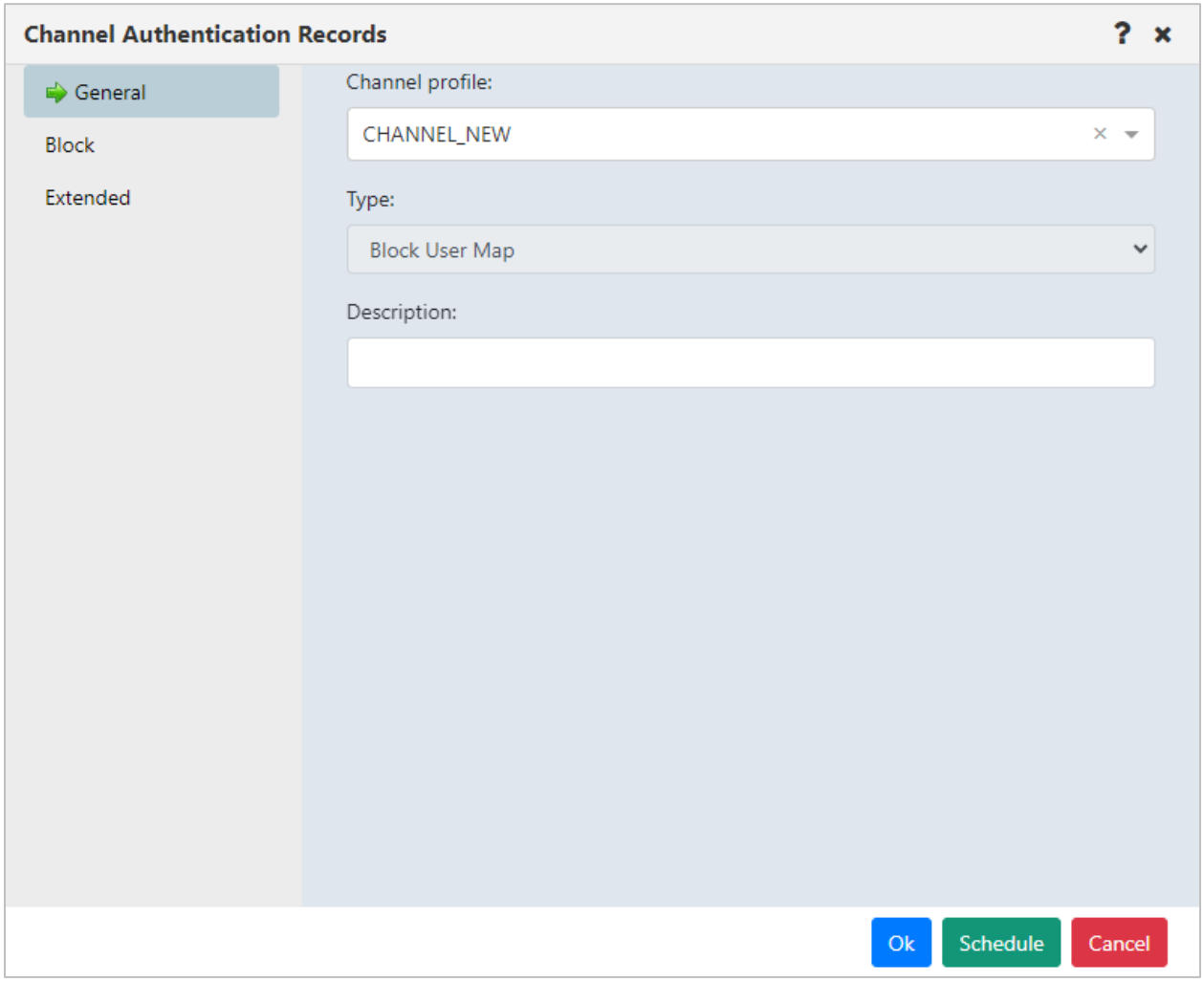


Figure 4.7.10.1-A. Channel Authentication Records Dialog

Type a name for the new record in the **Channel profile** field. Fill in other tabs and fields as needed. See *Channel Authentication Record* for more information.

Click **OK**. After the new record has been created successfully, a green Success Message is temporarily displayed in the lower right corner of the window, and the new record appears in the viewlet

4.7.11 Create Channel

Within a Channel viewlet, click the **Add** button to create a new channel. The *Select object path* window opens. Specify the channel's path and select its subtype from the drop-down menu. Click **Select path**.

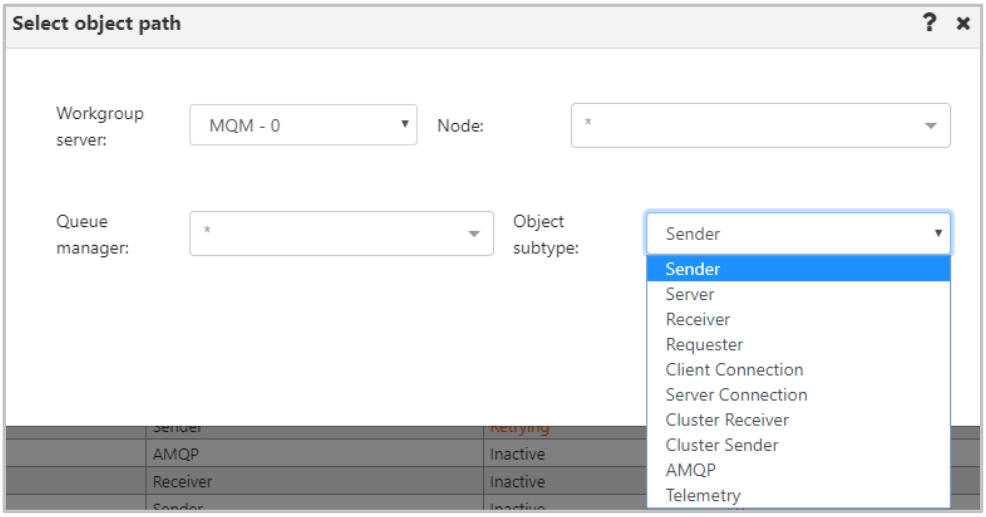


Figure 4.7.11-A. Select Object Path for a New Channel

The *Channel Create Window* opens. Specify the channel's properties.

NOTE

The tabs of the **Channel Create Window** differ according to the channel's type. Consult IBM documentation for the descriptions of channel properties:

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_7.5.0/com.ibm.mq.explorer.doc/e_properties_channels.htm

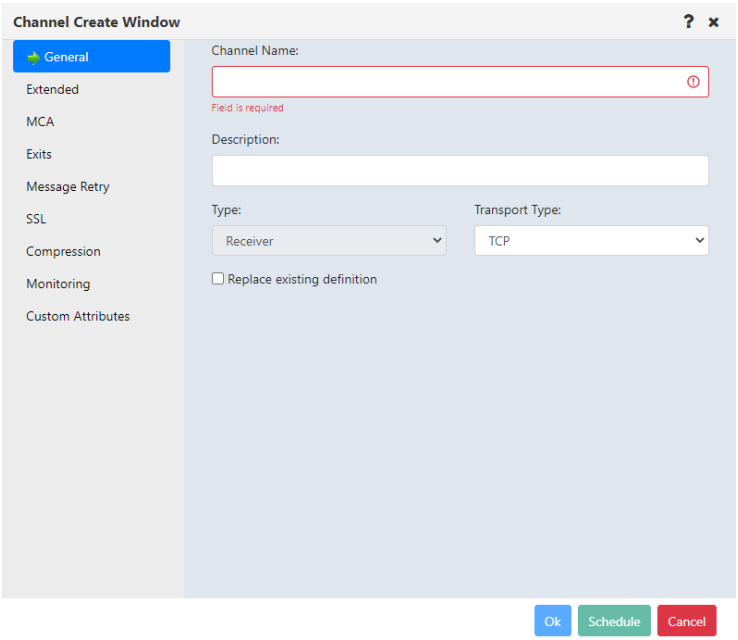


Figure 4.7.11-B. Channel Create Window – General Tab

4.7.12 Create Consumer

When creating viewlets (section *Adding and Maintaining Viewlets*), go to the **Consumer** tab and enter all details.

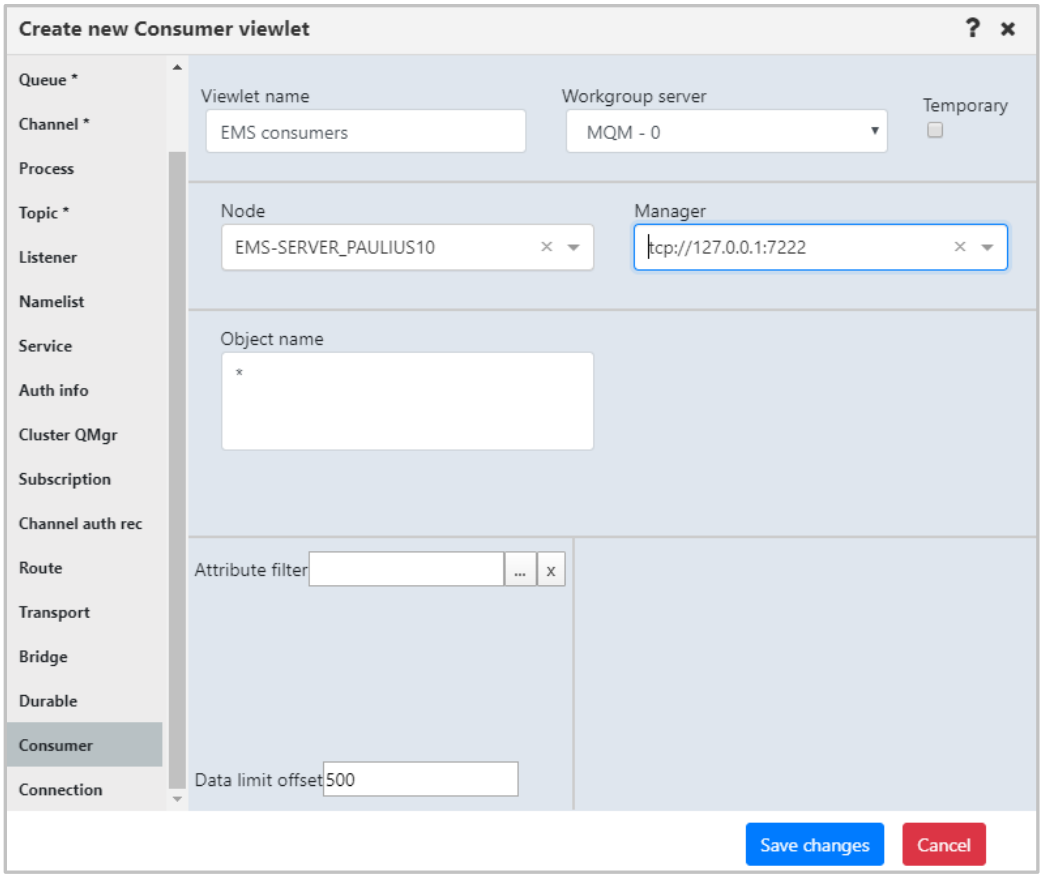


Figure 4.7.12-A. New Consumer

4.7.13 Create Connection

When creating viewlets (section *Adding and Maintaining Viewlets*), go to the **Connection** tab and enter all details.

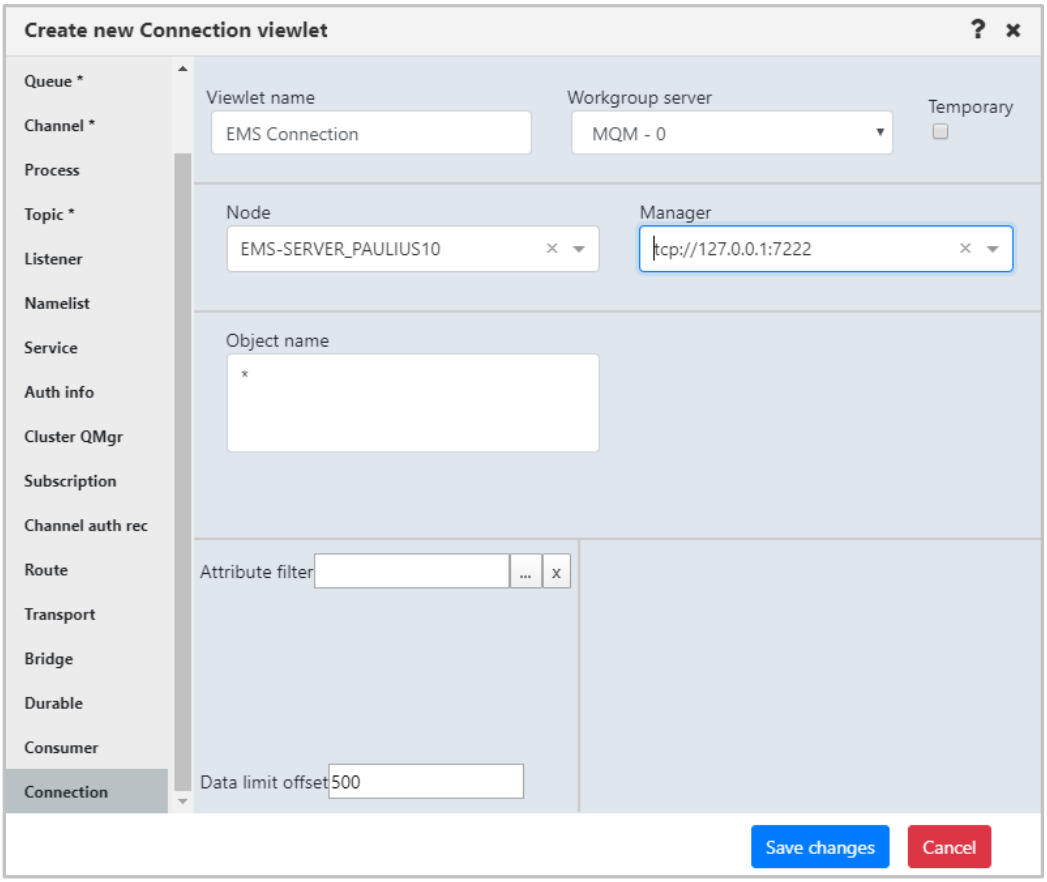


Figure 4.7.13-A. New Connection

4.8 Copy Objects

Select the object(s) to copy and use one of the following methods:

- click **Copy** in the object(s) pop-up menu

-or-

- use the keyboard shortcut keys, **Ctrl** + **C**

After performing one of the above actions, the **Paste** button located at the top right corner of the screen becomes enabled and appears in yellow . Click this button to open the *Select object path* window and specify the workgroup server, node, and queue manager the selected object(s) should be copied to and click the **Copy** button. Refresh the viewlet to see the changes.

NOTE

The copy option is available for queues, listeners, and processes.

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Appendix A: References

A.1 meshIQ Documentation

The following documents relevant to meshIQ management applications can be found in the *Resource Center*.

Table A-1. meshIQ Documentation

Document Number (or higher)	Title
NAV/WGS 101.036	*Workgroup Server Expert*
NAV/COMP 101.018	*Components Installation Guide*
NAV-SM 667.008	*Security Manager V6 – User's Guide*
M6/MQ 600.005	*AutoPilot® M6 Plug-in for IBM MQ*
APM6/INS 625.002	*AutoPilot M6 Installation Guide*
APM6/USR 625.003	*AutoPilot M6 User's Guide*

A.2 Tomcat

http://jakarta.apache.org/tomcat/tomcat-4.1-doc/index.html

A.3 Java™

http://java.sun.com/products/JavaManagement/reference/docs/index.html
http://www.hp.com/products1/unix/java/infolibrary/index.html

A.4 MS Windows

http://www.microsoft.com/windows/default.mspx

A.5 UNIX

http://www.unix.org/

A.6 Solaris

http://www.sun.com/software/solaris/

A.7 Linux

http://www.linux.org/

Appendix B: Objects

The following table is a list of objects and their descriptions.

Table B-1. Objects		
Icon	**Name**	**Description**
	Node	A computer in a workgroup server. An EMS node contains EMS queue managers.
	Manager	Queue (or EMS) managers maintain their queues and provide queuing services to applications.
Queues		An IBM MQ queue is an object in which applications can put and get messages from.
	Local	Transmission, initiation, dead-letter, command, default, channel, and event queues are types of local queues. A queue is known to a program as local if it is owned by the queue manager to which the program is connected. You can get messages from, and put messages on, local queues.
	Model	A model queue is a queue definition template used when creating dynamic queues.
	Alias	An alias queue is an IBM MQ object that you can use to access another queue or a topic. This means that more than one program can work with the same queue, accessing it using different names.
	Remote	To a program, a queue is remote if it is owned by a different queue manager to the one to which the program is connected.
	Cluster	A cluster queue is a queue that is hosted by a cluster queue manager and made available to other queue managers in the cluster.
	Channel	A channel is a communication link used by distributed queue managers. Channels are objects that provide a communication path from one queue manager to another.
	Process	Process definition object is an IBM MQ object that contains the definition of an MQ application. Process definition objects allow applications to be started without the need for operator intervention by defining the attributes of the application for use by the queue manager.
	Topic	A topic object is an IBM MQ object that allows you to assign specific, non-default attributes to topics. Topics can be subscribed to and can be linked with particular messages.
	Listener	Listeners are processes that accept network requests from other queue managers, or client applications, and start associated channels.
	Namelist	A namelist is an IBM MQ object that contains a list of cluster names, queue names or authentication information object names. In a cluster, it can be

Table B-1. Objects		
		used to identify a list of clusters for which the queue manager holds the repositories.
	Service	Service objects are a way of defining programs to be run when a queue manager starts or stops.
	Auth info	An authentication information object provides the definitions required to perform certificate revocation checking. There are four types: CRL(LDAP), OCSP, IDPW(OS) and IDPW(LDAP)
	Cluster QMgr	A cluster queue manager is a queue manager that is a member of a cluster.
	Subscription	An object which requests topic information.
	Channel auth rec	Channel authentication records allow for more precise control over user access to connecting systems at a channel level.
	Comm Info	Communication information
EMS Objects		
	EMS Queue	Encapsulates a provider-specific queue name.
	EMS Topic	Subjects containing a set of related messages.
	EMS Channel	Each EMS channel is a client of an EMS server, which acts as a store-and-forward intermediary for all messages through the channel.
	Route	The configuration and optionally statistical data about the routed server are represented by an object of this class.
	Transport	The data and behavior common to transports of all types that are configured on the EMS server is represented by this abstract class. Transports are mechanisms for importing and exporting messages between EMS and other messaging systems. TIBCO Rendezvous and Rendezvous Certified Messaging are currently the only two types of transports supported.
	Bridge	Consists of a source destination name and type and 1 or more BridgeTarget objects.
	Durable	Represents a durable subscription on the Tibjms server which may be active and receiving messages or it may be dormant, with its messages being stored on the server until it is active again.
	Server Properties	A TIBCO Enterprise Management Service (EMS) server provides messaging services for applications that communicate by monitoring queues. It ensures that sent messages are directed to the correct receive queue or

Table B-1. Objects		
		that messages are routed to another queue manager.
	Users	Users are specific IDs that allow you to identify yourself to the server. When logging in, the connect request should be accompanied by a username and password.
	Groups	Groups are classes of users. A user can belong to multiple groups. The rights of a user are a combination of the rights of the groups the user belongs to, in addition to any rights granted to the user directly.
	Access Control Lists	This file defines all rights on topics and queues for all users and groups.
	Consumers	List of EMS Connections.
	Connections	List of EMS Connections.
Kafka Objects		
	Broker	The Kafka server (identified by its cluster and integer number), known by its number "0"
	Cluster	A group of Kafka brokers sharing a configuration. The identity of a cluster is generated GUID.
	Topic	The container for Kafka messages. The identity of a topic is a user defined name. All brokers in a cluster treat the topic as a single entity.
	Partition	Where the data is stored, a topic will typically be spread across multiple partitions.
	Message	The data. The identity of a message is a Kafka topic, partition, and sequence number.
	Log	Refers to all of the messages collected for Kafka that are stored in a log. A unique aspect of Kafka is that the messages are not removed when they are read but are aged off the log based on time or size of log.
	Replicas	For recovery, Kafka may keep additional copies of the log in case of a media failure.

Table B-1. Objects		
	Producer	An application writing messages to a topic.
	Consumer	A single application reading a Kafka topic.
	Consumer Group	A collection of applications that share reading a Kafka topic.
	Stream	A conduit between Kafka and other products, such as MQ or a database.
	Connector	Connector object, associated with Apache Kafka Connect.
	Schema	Confluent Kafka. The Schema registry helps keep track of changes to schemas over time.
	Schema Subject	Confluent Kafka. Schema subjects name schemas according to a strategy.
	Schema Subject Version	Confluent Kafka. Versions keep track of the evolution of schemas.
	KSQL	Confluent Kafka. KSQL endpoints.
IIB Objects		
	Broker	A set of execution processes that hosts one or more message flows to route, transform, and enrich in flight messages.
	Servers	A named grouping of message flows that have been assigned to an integration node.
	Applications	A deployable container that provides isolation at runtime.
	Services	An application with a well-defined interface. It implements flows for each service operation.
	Rest APIs	An application that implements a RESTful interface. A REST API is defined by importing a Swagger 2.0 document.
	Library	A logical grouping of related code, data, or both. Each reference to this object is deployed with a copy of this object. Any change will not be visible after an update in referenced objects and redeploy is necessary.
	Shared Library	A logical grouping of related code, data, or both. Deployed directly to an integration server. Any change to the library will be seen in all other referenced objects.

Table B-1. Objects		
	Message Flow	A sequence of processing steps that run in the integration node when an input message is received.
	Sub Flow	A common sequence of actions to be used by several message flows, applications, or integration services.
	Resource	The projects, folders, and files.
ACE Objects		
	Integration Node	A set of execution processes that hosts one or more message flows to route, transform, and enrich in-flight messages.
	Servers	Object used to provide an isolated runtime environment for a set of deployed message flows and resources.
	Applications	A deployable container that provides isolation at runtime.
	Services	An application with a well-defined interface. It implements flows for each service operation.
	Rest APIs	An application that implements a RESTful interface.
	Library	A logical grouping of related code, data, or both. Each reference to this object is deployed with a copy of this object. Any change will not be visible after an update in referenced objects and redeploy is necessary.
	Shared Library	A logical grouping of related code, data, or both. Deployed directly to an integration server. Any change to the library will be seen in all other referenced objects.
	Message Flow	A message flow is a sequence of processing steps that run in the integration node when an input message is received.
	Sub Flow	A common sequence of actions to be used by several message flows, applications, or integration services.
	Resource	The projects, folders, and files.
	Link	Object describing a connection(reference) between two objects.
Solace Objects		
	Node	
	Remote Queue	

Table B-1. Objects		
	Manager	
	Broker	An event broker transmits events between producers and consumers.
	Message VPN	Message VPNs are used for client connections. They create separate domains on a broker so that topics and messages are separated. They control which clients can see which messages by grouping clients: each group of clients sees only messages that are published to their group.
	Queue	A queue receives published messages, either directly, or through a topic to which it is subscribed.
	Queue Template	A queue template can facilitate the process of creating queues. Set up a queue template with the desired configuration, then applications can use that template when creating new queues.
	Topic Endpoint	Name of a unique topic endpoint in a Message VPN.
	Topic Endpoint Template	A Topic Endpoint Template facilitates the process of creating topic endpoints. The template is set up with attributes that are copied to new endpoints that are created dynamically through an API.
	Bridge	Message VPN bridges connect two Message VPNs, so that messages published to one are delivered to the other, based on the topic subscriptions that are assigned to the bridge. Message traffic can flow through bridges in one direction or in both directions.
	Client Profile	A client profile is a set of configuration properties for a client application. Client application configuration is streamlined through client profiles: changes to the client profile affect the applications that are assigned to that profile.
	ACL Profile	The ACL profile that is assigned to a client controls which event brokers it can connect to and which topics it can publish and subscribe to.
	Client UserName	Client usernames are the means through which clients are authorized to connect to a Message VPN. Client usernames must be assigned to a client.
	JNDI Connection Factory	Provides a means of configuring the connection between JMS clients and event brokers. The Connection Factory is looked up from the JNDI store on the broker.
	JNDI Queue	A queue object in the Solace JNDI store
	JNDI Topic	A topic object in the Solace JNDI store
	Client Certificate	The Client Certificate CA (Certificate Authority) list is contained in the trust store. For incoming TLS connections, clients who present a valid client

Table B-1. Objects		
	Authority	certificate can authenticate using Client Certificate CAs.
	Client	Application or device that connects to an event broker. Clients can send messages, receive messages, or do both.
	MQTT Session	Session resulting from an MQTT connection.
	RDP	A REST delivery point (RDP) on the Message VPN facilitates message delivery to REST consumers.
	Rest Consumer	A client or endpoint that receives messages through an RDP.
	Distributed Cache	A collection of one or more Cache Clusters on a Message VPN.
	Cache Cluster	Collection of Cache Instances that subscribe to the same topics.
	Cache Instance	A process that listens for and caches live data messages based on the topic subscriptions that are configured for its parent Cache Cluster.
	DMR Cluster	A DMR cluster on an event broker contains global DMR configuration parameters.
	CSPF Neighbor	An event broker that, based its topology, is considered the best node through which to forward a message to its destination event broker.

Appendix C: Object Menus

A pop-up menu appears when an object is selected within a viewlet. The following table explains the menu options.

NOTE

Your pop-up menu options may differ according to your user permissions, which are managed by an admin.

Table C-1. Object Menu Options

Object	Option	Description
Workgroup Server	**Delete workgroup server**	Delete selected workgroup server. A window will appear confirming this action.
	Edit workgroup server	Edit the workgroup server settings. The *Edit workgroup server dialog box* is similar to the *Add new workgroup server* screen (see *Figure 3.2.1-A*).
	Default Connection	Sets the selected workgroup server as a primary connection for all users. This eliminates the requirement for users to select workgroup server connections upon logging in for the first time. Multiple workgroup server connections can be set as defaults. The **Default Connection** column within the *Workgroup Servers* viewlet displays the workgroup server connections that are set as a default. To remove a workgroup server as a default connection, simply select the **Default Connection** option to disable the default setting. Only users with the **Add/Remove Default Connection** right enabled in the security application will have this ability; all other users will not have the **Default Connection** option and cannot edit or remove these connections. However, they can create new (non-default) workgroup server connections.
	Create > Node	Create a node. See *section 4.2.2.1.1, Create a Node*.
	Remote Queue Managers	Create a remote queue manager. Includes edit and delete options (*section 4.2.2.1.2*).
	Remote EMS Managers	Create a remote EMS manager connection. Includes edit and delete options (*section 4.2.2.1.3*).
	Remote Kafka Managers	Create a remote Kafka manager connection. Includes edit and delete options (*section 4.2.2.1.4*).

Table C-1. Object Menu Options

Object	Option	Description
	Remote ACE/IIB Managers	Create a remote ACE or IIB manager connection. Includes edit and delete options (*section* 4.2.2.1.5).
	Remote Solace Managers	Create a remote Solace manager connection. Includes edit and delete options (*section* 4.2.2.1.6).
Node	Show Object Attributes	Displays the node's *Attribute* viewlet.
	Show Topology	See *Topology*
	Create Queue Manager	See *Create Topic*
	Events	Opens a Console viewlet displaying events which occurred within the selected node.
	Manage	Select the **Manage** option to activate an inactive node. Unselect this option to make a node inactive. When unselected, the **Delete** and **Properties** options become available in the node menu. Note: An active node may need to be reactivated by unselecting and reselecting the **Manage** option.
	Commands > Start All WMQ Objects	Starts node's WMQ objects (section 4.3.2.2).
	Stop All WMQ Objects	Stops node's WMQ objects.
	Shutdown	Stops the node completely.
	Discover Now > Incremental Full	See the next section, Manager, for more information on discovery modes.
	Add to Favorites	Create a shortcut to the selected node in a *Favorites* viewlet. (Section 4.3.3.1.5.)
	Delete	Displays in the menu when the node is not active (un-managed). Deletes the selected node.
	Properties	This option is available in the menu when the node is inactive (unmanaged). Opens the Properties window where you can view and/or edit the node's configurations.
Manager	Show Object Attributes	Displays the MQ or EMS object manager's Attribute viewlet (section 4.3.3.1.1).

Table C-1. Object Menu Options		
Object	**Option**	**Description**
(Queue or EMS)	EMS Scripts	Run EMS commands.
	Manage	Select either User Groups, Users or ACLs to manage these EMS aspects.
	Show Topology	View a graphic representation of queue relationship (see *Topology*)
	Show Status	Opens a **Status** viewlet within the *Console* panel.
	Create Queue Manager	Create a new Queue Manager (see section 4.7.2)
	Commands > Start all WMQ objects	Allows you to start WMQ objects (section 4.3.3.1.2). Not available for EMS queue managers.
	Stop all WMQ objects	Allows you to select the shutdown method (section 4.3.3.1.2). Not available for EMS queue manager.
	Ping	Ping the selected queue manager (section 4.3.3.1.11, Ping).
	Security	View or set authority for queue manager's objects (section 4.3.3.1.7). Can also browse authority records.
	View Error Log	View and export error log files (section 4.3.3.1.8).
	Connections (Modal), Connections (Console)	View, filter, stop, and refresh connections and connection handles (section 4.3.3.1.9).
	Cluster membership > Join	Joins the selected queue manager to a cluster. Includes cluster create option (sections 4.3.3.1.10.1 and 4.3.3.1.10.2).
	Refresh	Refreshes queue manager clusters and repositories (section 4.3.3.1.10.3).
	Suspend	Temporarily reduce the inbound cluster activity to this queue manager.
	Resume	Informs other queue managers in a cluster that the local queue manager is available again for processing and can be sent messages. It reverses the action of the Suspend command.
	Leave	Removes the selected queue manager from the queue manager cluster (section 4.3.3.1.10.4).
	Properties	Displays the Properties window (section 4.3.3.1.3)

Table C-1. Object Menu Options

Object	Option	Description
	MQSC / EMS	Select **Apply script**, **Console** (*Figure 4.3.3.1.6-A* or *Figure 4.3.3.2.2-A*), **Snapshot**, or **z/OS Reports**.
	Discover Now (only available for MQ queue managers)	**Incremental**: the WGS maintains the last discovery time for each queue manager and sends this time with each discovery command. Incremental discovery logic will work only if initial discovery is completed and queue managers are fully discovered.
		Full: when the WGS starts up, it sends a query on every object to the agent. The Workgroup Server re-connects to each agent and sends an **EXCMD_MQ_DISCOVER** command. Since the agent thread or process for a given queue manager has just started, while servicing the discover command, the agent allows every inquire object reply from the IBM WMQ command server to be sent to the WGS.
	Delete	Remove the queue manager.
	Delete from Database	Allows you to delete the queue manager from the database. Please note that there is no confirmation dialog box for this action.
	Events	Displays the Events viewlet (section *4.3.3.1.4*).
	MQ Statistics	Displays a statistics viewlet generated by a SQL query (section *4.3.10*).
	Create Dashboard	Create a new dashboard for the queue manager using a default dashboard template (*section 4.2.11*).
	Add to favorites	Allows you to create a shortcut for a MQ or EMS manager in a *Favorites* viewlet (section *4.3.3.1.5*).
Queue	Browse messages	Displays a list of messages. (*Figure 4.3.4.3-A*)
	Show Object Attributes	Displays the object attributes. (*Figure 4.3.3.1-A*)
	Show Queue Status / Show EMS Queue Status	Displays queue status. *(Figure 4.3.4.1-A)*
	Create Queue / Create EMS Queue	Opens the window to create a queue. (Section *4.7.4*)
	Messages	**Put New Message:** Displays the *Put New* window (*Figure 4.3.4.3.1-A*) to create and put new message(s) into the selected queue.
		Load From File: If loading single or multiple

Table C-1. Object Menu Options

Object	Option	Description
		messages from .mmf files, .txt files, or files created by the IBM dmpmqmsg utility (*Figure 4.3.4.3.5-A*), opens the Command Settings dialog box to continue or configure settings. If loading messages from shared storage, opens the Select Files dialog.
		Export All Messages: Exports all messages as .mmf or .txt files, or to shared storage (*Figure 4.3.4.3.6-A*).
		Copy All: Displays the *Copy messages* window (*Figure 4.3.4.3.3-A*) where a user can define how and where messages should be copied. Message criteria can be selected to only copy messages which meet the criteria specifications.
		Move All: Displays the *Move messages* window (*Figure 4.3.4.3.3-B*) where a user can define how and where messages should be moved. Message criteria can be selected to only move messages which meet the criteria specifications.
		Delete All: Allows the user to delete all messages within the selected queue. The system reads then deletes one message at a time. This function does not recognize uncommitted messages, which means that there could still be uncommitted messages on the queue. Also, the command might fail if the queue is already exclusively opened by another application. Message criteria can be selected to only delete messages which meet the criteria specifications.
		Clear All: This option will clear an entire queue without reading the messages. Please note that this function will not work if the queue is open by another application or if the queue contains uncommitted messages.
	Commands > Copy As	Creates a new object based on the definition of the currently selected object. (*Figure 4.3.4.4-A*)
	Delete Queue	Allows users to delete the queue. (*Figure 4.3.4.4-B*)
	Force Update	Triggers the WGS to retrieve the most recent copy of the data (see section *4.3.4.4*).
	Allow or Inhibit Get and Put	Set a queue to allow or inhibit get and put message

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Table C-1. Object Menu Options		
Object	**Option**	**Description**
	Messages	operations.
	Security	View and set authority for MQ Queue objects. (Section 4.3.3.1.7.)
	Copy	Copy the selected object to a specified path (the yellow **Paste** button needs to be used, see section 4.8 Copy Objects).
	Properties	Displays the queue properties. (Figure 4.3.3.1.3-A)
	Events	Displays the Events viewlet (Figure 4.3.3.1.4-A)
	MQ Statistics	Displays a statistics viewlet generated by a SQL query (section 4.3.10).
	Add to favorites	Allows you to add the selected queue to a *Favorites* viewlet. (Figure 4.3.1.2-A)
Channel	Show Object Attributes	Displays the selected channel's Attribute viewlet (section 4.3.5.1).
	Show Channel Status	Displays the selected channel's Status viewlet (section 4.3.5.2).
	Commands	Gives the option to Start, Stop, Ping, Resolve or Reset the selected channel (section 4.3.5.3) and to view or edit Security permissions (section 4.3.3.1.7).
	Properties	Displays the selected channel's Properties window (section 4.3.5.4).
	Create ChAuthRec	Create channel auth rec (section 4.7.10).
	Events	Displays the selected channel's Events viewlet (section 4.3.5.5).
	MQ Statistics	Displays a statistics viewlet generated by a SQL query (section 4.3.10).
	Add to favorites	Allows you to create a shortcut for the channel on a *Favorites* viewlet (section 4.3.5.6).
Process	Show Object Attributes	Displays the selected process' *Attribute* viewlet.
	Commands	Gives the option to Copy As, Rename, Delete, or manage Security for the selected process (section 4.3.3.1.7).
	Create Process	Create a new process (section 4.7.1).

Table C-1. Object Menu Options		
Object	**Option**	**Description**
	Properties	Opens the *Properties* window for the selected process.
	Copy	Select to copy a process (section 4.8).
	Events	Displays the selected processes *Events* viewlet.
	Add to favorites	Create a shortcut in a Favorites viewlet. (Section 4.3.3.1.5.)
Topic	Show Object Attributes	Displays the selected topic's *Attribute* viewlet.
	Create Topic Commands > Copy As	Create a new topic (section 4.7.3)
	Create Topic Commands > Copy As Delete	Creates a new topic based on the definition of the currently selected topic. Specify the topic string (optional).
	Delete	Deletes selected topic(s).
	Force Update	Triggers the WGS to retrieve the most recent copy of the data, see *section* 4.3.4.4.
	Publish	Puts an IBM MQ message (containing information for the application) to a topic with a related subject.
	Security	Gives the option to view/edit Security permissions (section 4.3.3.1.7).
	Properties	Displays the selected topic's *Properties* window.
	Events	Displays the selected topic's *Events* viewlet.
	Add to favorites	Allows you to create a shortcut for the listener in a *Favorites* viewlet.
Listener	Show Object Attributes	Displays the selected listener's *Attribute* viewlet.
	Create Listener	Create a new listener (section 4.7.5).
	Commands	Gives the option to Start, Stop, Copy As, Rename, Delete or view/edit Security permissions (section 4.3.3.1.7).
	Properties	Displays the selected listener's *Properties* window.

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	Copy	Select to copy the listener (section 4.8).
	Events	Displays the selected listener's *Events* viewlet.
	Add to favorites	Allows you to create a shortcut for the listener in a *Favorites* viewlet.
Namelist	Show Object Attributes	Displays the selected namelist's *Attribute* viewlet.
	Commands	Gives the option to Copy As, Rename, Delete or View/edit Security permissions (section 4.3.3.1.7).
	Events	Displays the selected namelist's *Events* viewlet.
	Add to favorites	Allows you to create a shortcut for the namelist in a *Favorites* viewlet.
Service (IBM MQ)	Show Object Attributes	Displays the selected service's *Attribute* viewlet.
	Commands	Gives the option to Start, Stop, Copy As, Rename, Delete or view/edit Security permissions (section 4.3.3.1.7).
	MQSC	Run MQSC commands.
	Events	Displays the selected service's *Events* viewlet.
	Properties	Displays the *Properties* window.
	Add to favorites	Allows you to create a shortcut for the services in a *Favorites* viewlet.
Auth Info	Show Object Attributes	Displays the selected auth info's *Attribute* viewlet. There are four types: CRL(LDAP), OCSP, IDPW(OS) and IDPW(LDAP)
	Commands	View/edit Security permissions (section 4.3.3.1.7).
	Events	Displays the selected auth info's *Events* viewlet.
	Add to favorites	Allows you to create a shortcut for the auth info in a *Favorites* viewlet.
Cluster QMgr	Show Object Attributes	Displays the selected cluster queue manager's *Attribute* viewlet.
	Events	Displays the selected cluster queue manager's *Events* viewlet.
	Add to favorites	Allows you to create a shortcut for the cluster queue manager in a *Favorites* viewlet.
Subscriptio	Show Object Attributes	Displays the selected subscription's *Attribute* viewlet.

n	Commands	Gives the option to Copy As, Rename or Delete.
	Create Subscription	Create a subscription (section 4.7.6).
	Properties	Displays the selected subscription's *Properties* dialog box window.
	Events	Displays the selected subscription's *Events* viewlet.
	Add to favorites	Allows you to create a shortcut for the subscription in a *Favorites* viewlet.
Route	Show Routes Attributes	Displays the selected route's *Attribute* viewlet.
	Show Routes Status	Displays the selected route's *Status* viewlet.
	Commands > Delete	Delete the selected route.
	Properties	Displays the selected route's *Properties* window.
	Events	Displays the selected route's *Events* viewlet.
	Add to Favorites	Allows you to create a shortcut for the route in a *Favorites* viewlet.
Transport	Show Transport Attributes	Displays the selected transport's *Attribute* viewlet.
	Properties	Displays the selected transport's *Properties* window.
	Events	Displays the selected transport's *Events* viewlet.
	Add to Favorites	Allows you to create a shortcut for the transport in a *Favorites* viewlet.
Bridge	Show Bridge Attributes	Displays the selected bridge's *Attribute* viewlet.
	Commands > Delete	Delete selected bridge.
	Properties	Displays the selected bridge's *Properties* window.
	Events	Displays the selected bridge's *Events* viewlet.
	Add to Favorites	Allows you to create a shortcut for the bridge in a *Favorites* viewlet.
Consumer	Add to Favorites	Allows you to create a shortcut to consumers in a *Favorites* viewlet.
Connection	Command > Destroy	Deletes the connection.

	Add to Favorites	Allows you to create a shortcut to connections in a *Favorites* viewlet.
Durable	Show Durable Attributes	Displays the selected durable's *Attribute* viewlet.
	Commands > Delete	Delete selected durable object.
	Purge	Purge messages in selected durable(s).
	Properties	Displays the selected durable's *Properties* window.
	Events	Displays the selected durable's *Events* viewlet.
	Add to Favorites	Allows you to create a shortcut to durables in a *Favorites* viewlet.
Channel auth rec	Add to Favorites	Allows you to create a shortcut for a channel auth rec in a *Favorites* viewlet.
	Commands > Delete	Delete selected channel auth rec object.
	Properties	Displays the selected channel auth rec's *Properties* window.
	Create ChAuthRec	Create channel auth rec (section *4.7.10*).
	Events	Displays the selected channel auth rec's events viewlet.
Comm Info	Show Object Attributes	Displays the selected comm info's object attributes. Also allows you to compare multiple comm info attributes.
	Properties...	Displays the selected comm info's *Properties* window which includes general information and alteration date and time statistics.
	Copy As...	Make a copy of the selected comm info.
	Delete	Delete the comm info.
	Add to favorites...	Allows you to create a shortcut for comm info in a *Favorites* viewlet.
Broker (IIB)	Show Object Attributes	Displays the selected broker's object attributes. Also allows you to compare multiple broker attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)

	Admin Logs	View the administrative logs.
	Add to favorites	Allows you to create a shortcut to the broker in a *Favorites* viewlet.
Server (IIB)	Show Object Attributes	Displays the selected server's attributes. Also allows you to compare multiple server attributes.
	Start	Start the selected server.
	Start All Application Types	Start the selected server's application types.
	Start All Message Flows	Start the selected server's message flows.
	Stop	Stop the selected server.
	Stop All Application Types	Stop the selected server's application types.
	Stop All Message Flows	Stop the selected server's message flows.
	Delete All Content	Delete all of the selected server's content.
	Delete	Delete the selected server.
	Deploy	Deploys objects by bar file into the server.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Statistics On	Turn the server's statistics on.
	Statistics Off	Turn the server's statistics off.
	Resource Statistics On	Turn resource statistics on.
	Resource Statistics Off	Turn resource statistics off.
	Add to favorites...	Allows you to create a shortcut to the server in a *Favorites* viewlet.
Application (IIB)	Show Object Attributes	Displays the selected application's attributes. Also allows you to compare multiple application attributes.
	Start	Start the selected application.
	Stop	Stop the selected application.
	Delete	Delete the selected application.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)

	Statistics On	Turn statistics on.
	Statistics Off	Turn statistics off.
	Start Flow Monitoring	Enable flow monitoring.
	Stop Flow Monitoring	Disable flow monitoring.
	Add to favorites…	Allows you to create a shortcut to the application in a *Favorites* viewlet.
Service (IIB)	Show Object Attributes	Displays the selected service's attributes. Also allows you to compare multiple service attributes.
	Start	Start the selected service.
	Stop	Stop the selected service.
	Delete	Delete the selected service.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Statistics On	Turn statistics on.
	Statistics Off	Turn statistics off.
	Start Flow Monitoring	Enable flow monitoring.
	Stop Flow Monitoring	Disable flow monitoring.
	Add to favorites…	Allows you to create a shortcut to the service in a *Favorites* viewlet.
REST API (IIB)	Show Object Attributes	Displays the selected REST API's attributes. Also allows you to compare multiple REST API attributes.
	Start	Start the selected REST API.
	Stop	Stop the selected REST API.
	Delete	Delete the selected REST API.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Statistics On	Turn statistics on.
	Statistics Off	Turn statistics off.
	Start Flow Monitoring	Enable flow monitoring.
	Stop Flow Monitoring	Disable flow monitoring.
	Add to favorites…	Allows you to create a shortcut to the REST API in a

		Favorites viewlet.
Library (IIB)	Show Object Attributes	Displays the selected library's attributes. Also allows you to compare multiple library attributes.
	Delete	Delete the selected library.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the library in a *Favorites* viewlet.
Shared Library (IIB)	Show Object Attributes	Displays the selected shared library's attributes. Also allows you to compare multiple share library attributes.
	Delete	Delete the selected shared library.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the shared library in a *Favorites* viewlet.
Message Flow (IIB)	Show Object Attributes	Displays the selected message flow's attributes. Also allows you to compare multiple message flow attributes.
	Start	Start the message flow.
	Stop	Stop the message flow.
	Force Stop	Force the message flow to stop.
	Activity Logs	Displays the message flow activity log.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Stop Recording	Stop recording message flow.
	Statistics On	Turn statistics on.
	Statistics Off	Turn statistics off.
	Start Flow Monitoring	Start flow monitoring for the selected message flow.
	Stop Flow Monitoring	Stop flow monitoring for the selected message flow.
	Add to favorites…	Allows you to create a shortcut to the message flow in a *Favorites* viewlet.

Sub Flow (IIB)	Show Object Attributes	Displays the selected sub flow's attributes. Also allows you to compare multiple sub flow attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the sub flow in a *Favorites* viewlet.
Resource (IIB)	Show Object Attributes	Displays the selected resource's attributes. Also allows you to compare multiple resource attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the resource in a *Favorites* viewlet.
Integration Node (ACE)	Show Object Attributes	Displays the selected integration node's attributes. Also allows you to compare multiple integration node attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Admin Logs	View the administrative logs.
	Add to favorites…	Allows you to create a shortcut to the integration node in a *Favorites* viewlet.
Integration Server (ACE)	Show Object Attributes	Displays the selected server's attributes. Also allows you to compare multiple servers' attributes.
	Start	Start Integration Server
	Stop	Stop Integration Server
	Shutdown	Shutdowns the Integration Server
	Delete	Deletes the Integration Server
	Delete All Content	Deletes all deployed objects in the Integration Server
	Deploy	Deploys content by bar file to Server
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Start Service Trace	Starts server's service trace
	Rest Service Trace	Resets server's service trace
	Stop Service Trace	Stops server's service trace

	Start User Trace	Starts server's user trace
	Reset User Trace	Resets server's user trace
	Stop User Trace	Stops server's user trace
	Flow Statistic On	Enables flow statistics
	Flow Statistic Off	Disables flow statistics
	Resource Statistics On	Enables resource statistics
	Resource Statistics Off	Disables resource statistics
	Admin Logs	View the administrative logs
	Start Flow Monitoring	Enables flow monitoring
	Stop Flow Monitoring	Disables flow monitoring
	Add To Favorites	Allows you to create a shortcut to the Integration Server in a *Favorites* viewlet.
Application (ACE)	Show Object Attributes	Displays the selected application's attributes. Also allows you to compare multiple application attributes.
	Start	Start the application.
	Stop	Stop the application.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Delete	Delete the application.
	Set Up	Configure the application.
	Teardown	Tears down the application.
	Validate	Validates the application.
	Add to favorites...	Allows you to create a shortcut to the application in a *Favorites* viewlet.
Service (ACE)	Show Object Attributes	Displays the selected service's attributes. Also allows you to compare multiple service attributes.
	Start	Start the service.
	Stop	Stop the service.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)

	Delete	Delete the service.
	Set Up	Configure the service.
	Teardown	Tears down the service.
	Validate	Validates the service.
	Add to favorites…	Allows you to create a shortcut to the service in a *Favorites* viewlet.
REST API (ACE)	Show Object Attributes	Displays the selected REST API's attributes. Also allows you to compare multiple REST API attributes.
	Start	Start the REST API.
	Stop	Stop the REST API.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Delete	Delete the REST API.
	Set Up	Configure the REST API.
	Teardown	Tears down the REST API.
	Validate	Validates the REST API.
	Add to favorites…	Allows you to create a shortcut to the REST API in a *Favorites* viewlet.
Library (ACE)	Show Object Attributes	Displays the selected library's attributes. Also allows you to compare multiple library attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the library in a *Favorites* viewlet.
Shared Library (ACE)	Show Object Attributes	Displays the selected shared library's attributes. Also allows you to compare multiple shared library attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Delete	Delete the shared library.
	Add to favorites…	Allows you to create a shortcut to the shared library in a *Favorites* viewlet.
Message Flow	Show Object Attributes	Displays the selected message flow's attributes. Also allows you to compare multiple message flow

(ACE)		attributes.
	Start	Start the message flow.
	Stop	Stop the message flow.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Activity Logs	View the message flow's activity log.
	Set Up	Configure the message flow.
	Teardown	Tears down the message flow.
	Validate	Validates the message flow.
	Add to favorites…	Allows you to create a shortcut to the message flow in a *Favorites* viewlet.
Sub Flow (ACE)	Show Object Attributes	Displays the selected sub flow's attributes. Also allows you to compare multiple sub flow attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the sub flow in a *Favorites* viewlet.
Resource (ACE)	Show Object Attributes	Displays the selected resource's attributes. Also allows you to compare multiple resource attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the resource in a *Favorites* viewlet.
Link (ACE)	Show Object Attributes	Displays the selected link's attributes. Also allows you to compare multiple link attributes.
	Force Update	Forcibly retrieves the object's value (required if needed to quickly refresh data)
	Add to favorites…	Allows you to create a shortcut to the link in a *Favorites* viewlet.
Broker (Solace)	Show Object Attributes	Display object's attributes
	Statistics	Display object's statistics
	Properties	Edit object
	Force Update	Forcibly update object's properties

	Events	Make inquiries about and display events
	Add to favorites	Add object to favorite viewlet
Message VPNs	Show Object Attributes	Display object's attributes
	Properties	Edit object
	Status > Start	Start object
	Status > Stop	Stop object
	Status > Start DMR	Start dynamic message routing
	Status > Stop DMR	Stop dynamic message routing
	Commands >Delete	Delete object
	Commands > Clear Statistics	Clear object's statistics
	Commands > Clear Guaranteed Statistics	Clear object's guaranteed statistics
	Statistics	Display object's statistics
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Queue	Show Object Attributes	Display object's attributes
	Properties	Edit object
	Commands > Delete	Delete object
	Commands > Clear Statistics	Clear object's statistics
	Commands > Start Replay	Start replay
	Commands > Cancel Replay	Cancel replay
	Change Status > Turn Outgoing On	Turn object's outgoing messages on
	Change Status > Turn Outgoing Off	Turn object's outgoing messages off
	Change Status > Turn Incoming On	Turn object's incoming messages on
	Change Status > Turn	Turn object's incoming messages off

	Incoming Off	
	Statistics	Display object's statistics
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Queue Template	Show Object Attributes	Display object's attributes
	Commands → Delete	Delete object
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Topic Endpoint	Show Object Attributes	Display object's attributes
	Properties	Edit object
	Commands > Delete	Delete object
	Commands > Clear Statistics	Clear object's statistics
	Commands > Start Replay	Start object replay
	Commands > Cancel Replay	Cancel object replay
	Change Status > Turn Outgoing On	Turn object's outgoing messages on
	Change Status > Turn Outgoing Off	Turn object's outgoing messages off
	Change Status > Turn Incoming On	Turn object's incoming messages on
	Change Status > Turn Incoming Off	Turn object's incoming messages off
	Statistics	Display object's statistics
	Force Update	Forcibly update object's properties
	Add To Favorites	Add object to favorite viewlet
Topic Endpoint Template	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Properties	Edit object

	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Bridge	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Commands > Clear Statistics	Clear object's statistics
	Commands > Clear Event	Clear specified Event
	Commands > Disconnect	Disconnect bridge
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object
	Statistics	Display object's statistics
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
Client Profile	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
ACL Profile	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Browse Exceptions	Browse subobjects: Exceptions
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Client Username	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object

	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
JNDI Connection Factory	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
JNDI Queue	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
JNDI Topic	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Client Certificate Authority	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	OCSP Trusted Names	Browse subobjects: OCSP trusted names
	Refresh CRL	Refresh Certificate Revocation List
	Properties	Edit object
	Force Update	Forcibly update object's properties
	Add to favorites	Add object to favorite viewlet
Client	Show Object Attributes	Display object's attributes
	Commands > Clear Statistics	Clear object's statistics

	Commands > Clear Event	Clear specified Event
	Commands > Disconnect	Disconnect object
	Browse Sub-Objects	Browse subobjects
	Statistics	Display object's statistics
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
MQTT Session	Show Object Attributes	Display object's attributes
	Commands > Clear Statistics	Clear object's statistics
	Commands > Delete	Delete object
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object
	Browse Subscriptions	Browse subobjects: Subscriptions
	Statistics	Display object's statistics
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
RDP	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object
	Browse Queue Bindings	Browse subobjects: Queue Bindings
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
Rest Consumer	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Change Status > Enable	Enable object

	Change Status > Disable	Disable object
	Browse Queue Bindings	Browse subobjects: Queue Bindings
	Browse TLS Names	Browse subobjects: TLS names
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
Distributed Cache	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Commands > Clear Event	Clear specified Event
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorite	Add object to favorite viewlet
Cache Cluster	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Commands > Clear Event	Clear specified Event
	Commands > Start	Start object
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object
	Browse Topic	Browse subobjects: Topics
	Browse Home Cache Cluster	Browse subobjects: Home Cache Clusters
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
Cache Instance	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Commands > Clear Event	Clear specified Event

	Commands > Start	Start object
	Commands > Clear Statistics	Clear object's statistics
	Statistics	Display object's statistics
	Change Status > Enable	Enable object
	Change Status > Disable	Disable object
	Browse Remote Topic	Browse subobjects: Remote Topics
	Browse Home Cache Cluster	Browse subobjects: Home Cache Cluster
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
DMR Cluster	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Browse Links	Browse Subobjects: Links
	Browse Topology Issues	Browse Subobjects: Topology Issues
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet
CSPF Neighbor	Show Object Attributes	Display object's attributes
	Commands > Delete	Delete object
	Browse TLS Name	Browse Subobjects: TLS Names
	Browse XML Connections	Browse Subobjects: XML Connection
	Force Update	Forcibly update object's properties
	Properties	Edit object
	Add to favorites	Add object to favorite viewlet

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Appendix D: MQ Statistics Table Attributes

The following is a listing of all available MQ statistic attributes. These fields are used when generating MQ statistics viewlets (see section *4.3.10*).

Table D1. STATQUEUE		
MANAGER_NAME	NONPERS_TIME_ON_Q_AVG	PERS_GET_BYTES
MQNODE_NAME	PERS_TIME_ON_Q_AVG	NONPERS_BROWSE_COUNT
MQMGR_NAME	NONPERS_PUT_COUNT	PERS_BROWSE_COUNT
STAT_TIME_STAMP	PERS_PUT_COUNT	BROWSE_FAIL_COUNT
INTERVAL_START_DATE_TIME	PUT_FAIL_COUNT	NONPERS_BROWSE_BYTES
INTERVAL_END_DATE_TIME	NONPERS_PUT1_COUNT	PERS_BROWSE_BYTES
COMMAND_LEVEL	PERS_PUT1_COUNT	EXPIRED_MSG_COUNT
QUEUE_NAME	PUT1_FAIL_COUNT	NOT_QUEUED_MSG_COUNT
QUEUE_TYPE	NONPERS_PUT_BYTES	PURGED_MSG_COUNT
Q_DEFINITION_TYPE	PERS_PUT_BYTES	CB_CRT_ALT_COUNT
CREATION_DATE	NONPERS_GET_COUNT	CB_REMOVE_COUNT
CREATION_TIME	PERS_GET_COUNT	CB_RESUME_COUNT
MIN_DEPTH	GET_FAIL_COUNT	CB_SUSPEND_COUNT
MAX_DEPTH	NONPERS_GET_BYTES	CB_FAIL_COUNT

Table D2. STATMQI		
MANAGER_NAME	CFSTRUCT_INQ_COUNT	TOPIC_INQ_COUNT
MQNODE_NAME	LSR_INQ_COUNT	TOPIC_INQ_FAIL_COUNT
MQMGR_NAME	SRVC_INQ_COUNT	TOPIC_SET_COUNT
STAT_TIME_STAMP	QUEUE_INQ_FAIL_COUNT	TOPIC_SET_FAIL_COUNT
INTERVAL_START_DATE_TIME	NLIST_INQ_FAIL_COUNT	SUB_DUR_CREATE_COUNT

Table D2. STATMQI		
INTERVAL_END_DATE_TIME	PROC_INQ_FAIL_COUNT	SUB_DUR_ALTER_COUNT
COMMAND_LEVEL	STGCLS_INQ_FAIL_COUNT	SUB_DUR_RESUME_COUNT
CONNECT_COUNT	QMGR_INQ_FAIL_COUNT	SUB_NDUR_CREATE_COUNT
CONNECT_FAIL_COUNT	CHL_INQ_FAIL_COUNT	SUB_NDUR_ALTER_COUNT
MAX_CONNECTIONS	AUTHINFO_INQ_FAIL_COUNT	SUB_NDUR_RESUME_COUNT
NORMAL_DISC_COUNT	CFSTRUCT_INQ_FAIL_COUNT	SUB_FAIL_COUNT
IMPLICIT_DISC_COUNT	LSR_INQ_FAIL_COUNT	UNSUB_DUR_CL_NOT_REM_COU
QMGR_DISC_COUNT	SRVC_INQ_FAIL_COUNT	UNSUB_DUR_CL_REM_COUNT
QUEUE_OPEN_COUNT	QUEUE_SET_COUNT	UNSUB_NDUR_CL_NOT_REM_CO
NLIST_OPEN_COUNT	NLIST_SET_COUNT	UNSUB_NDUR_CL_REM_COUNT
PROC_OPEN_COUNT	PROC_SET_COUNT	UNSUB_FAIL_COUNT
STGCLS_OPEN_COUNT	STGCLS_SET_COUNT	SUB_RQ_COUNT
QMGR_OPEN_COUNT	QMGR_SET_COUNT	SUB_RQ_FAIL_COUNT
CHL_OPEN_COUNT	CHL_SET_COUNT	CB_CRT_ALT_COUNT
AUTHINFO_OPEN_COUNT	AUTHINFO_SET_COUNT	CB_REMOVE_COUNT
CFSTRUCT_OPEN_COUNT	CFSTRUCT_SET_COUNT	CB_RESUME_COUNT
LSR_OPEN_COUNT	LSR_SET_COUNT	CB_SUSPEND_COUNT
SRVC_OPEN_COUNT	SRVC_SET_COUNT	CB_FAIL_COUNT
QUEUE_OPEN_FAIL_COUNT	QUEUE_SET_FAIL_COUNT	CTL_START_COUNT
NLIST_OPEN_FAIL_COUNT	NLIST_SET_FAIL_COUNT	CTL_STOP_COUNT
PROC_OPEN_FAIL_COUNT	PROC_SET_FAIL_COUNT	CTL_RESUME_COUNT
STGCLS_OPEN_FAIL_COUNT	STGCLS_SET_FAIL_COUNT	CTL_SUSPEND_COUNT

Table D2. STATMQI		
QMGR_OPEN_FAIL_COUNT	QMGR_SET_FAIL_COUNT	CTL_FAIL_COUNT
CHL_OPEN_FAIL_COUNT	CHL_SET_FAIL_COUNT	MQSTAT_COUNT
AUTHINFO_OPEN_FAIL_COUNT	AUTHINFO_SET_FAIL_COUNT	MQSTAT_FAIL_COUNT
CFSTRUCT_OPEN_FAIL_COUNT	CFSTRUCT_SET_FAIL_COUNT	SUB_HW_ALL_DUR_COUNT
LSR_OPEN_FAIL_COUNT	LSR_SET_FAIL_COUNT	SUB_HW_APP_DUR_COUNT
SRVC_OPEN_FAIL_COUNT	SRVC_SET_FAIL_COUNT	SUB_HW_ADMIN_DUR_COUNT
QUEUE_CLOSE_COUNT	NONPERS_PUT_COUNT	SUB_HW_PROXY_DUR_COUNT
NLIST_CLOSE_COUNT	PERS_PUT_COUNT	SUB_LW_ALL_DUR_COUNT
PROC_CLOSE_COUNT	PUT_FAIL_COUNT	SUB_LW_APP_DUR_COUNT
STGCLS_CLOSE_COUNT	NONPERS_PUT1_COUNT	SUB_LW_ADMIN_DUR_COUNT
QMGR_CLOSE_COUNT	PERS_PUT1_COUNT	SUB_LW_PROXY_DUR_COUNT
CHL_CLOSE_COUNT	PUT1_FAIL_COUNT	SUB_HW_ALL_NDUR_COUNT
AUTHINFO_CLOSE_COUNT	NONPERS_PUT_BYTES	SUB_HW_APP_NDUR_COUNT
CFSTRUCT_CLOSE_COUNT	PERS_PUT_BYTES	SUB_HW_ADMIN_NDUR_COUNT
LSR_CLOSE_COUNT	NONPERS_GET_COUNT	SUB_HW_PROXY_NDUR_COUNT
SRVC_CLOSE_COUNT	PERS_GET_COUNT	SUB_LW_ALL_NDUR_COUNT
QUEUE_CLOSE_FAIL_COUNT	GET_FAIL_COUNT	SUB_LW_APP_NDUR_COUNT
NLIST_CLOSE_FAIL_COUNT	NONPERS_GET_BYTES	SUB_LW_ADMIN_NDUR_COUNT
PROC_CLOSE_FAIL_COUNT	PERS_GET_BYTES	SUB_LW_PROXY_NDUR_COUNT
STGCLS_CLOSE_FAIL_COUNT	NONPERS_BROWSE_COUNT	TOPIC_PUT_PER_COUNT
QMGR_CLOSE_FAIL_COUNT	PERS_BROWSE_COUNT	TOPIC_PUT_NPER_COUNT
CHL_CLOSE_FAIL_COUNT	BROWSE_FAIL_COUNT	TOPIC_PUT_FAIL_COUNT

Table D2. STATMQI		
AUTHINFO_CLOSE_FAIL_COUN	NONPERS_BROWSE_BYTES	TOPIC_PUT1_PER_COUNT
CFSTRUCT_CLOSE_FAIL_COUN	PERS_BROWSE_BYTES	TOPIC_PUT1_NPER_COUNT
LSR_CLOSE_FAIL_COUNT	COMMIT_COUNT	TOPIC_PUT1_FAIL_COUNT
SRVC_CLOSE_FAIL_COUNT	COMMIT_FAIL_COUNT	TOPIC_PUT_PER_BYTES
QUEUE_INQ_COUNT	BACKOUT_COUNT	TOPIC_PUT_NPER_BYTES
NLIST_INQ_COUNT	EXPIRED_MSG_COUNT	PUB_MSG_PER_COUNT
PROC_INQ_COUNT	PURGED_MSG_COUNT	PUB_MSG_NPER_COUNT
STGCLS_INQ_COUNT	TOPIC_OPEN_COUNT	PUB_MSG_BYTES_PER_COUNT
QMGR_INQ_COUNT	TOPIC_OPEN_FAIL_COUNT	PUB_MSG_BYTES_NPER_COUNT
CHL_INQ_COUNT	TOPIC_CLOSE_COUNT	
AUTHINFO_INQ_COUNT	TOPIC_CLOSE_FAIL_COUNT	

Table D3. STATCHL		
MANAGER_NAME	CHANNEL_TYPE	EXIT_TIME_MIN
MQNODE_NAME	REMOTE_QMGR_NAME	EXIT_TIME_AVG
MQMGR_NAME	CONNECTION_NAME	EXIT_TIME_MAX
STAT_TIME_STAMP	CHL_MSG_COUNT	FULL_BATCH_COUNT
INTERVAL_START_DATE_TIME	CHL_MSG_BYTES	INCOMPLETE_BATCH_COUNT
INTERVAL_END_DATE_TIME	NET_TIME_MIN	BATCH_SIZE_AVG
COMMAND_LEVEL	NET_TIME_AVG	PUT_RETRY_COUNT
CHANNEL_NAME	NET_TIME_MAX	

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