



IBM Software Group

WebSphere MQ V6.0 Explorer

Introduction to Explorer

WebSphere software



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This presentation will provide an introduction to WebSphere® MQ V6.0 Explorer.

Java™ GUI

- Introduction
 - ▶ Changes from V5.3
- MQ Explorer
 - ▶ Screen Captures
 - ▶ Components
- Further Presentations

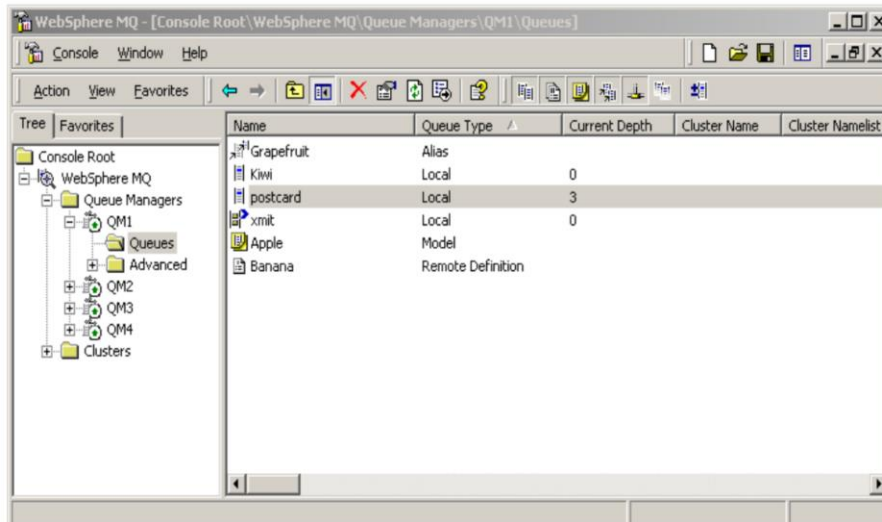
This presentation will provide an introduction to the changes in V6.0 as compared to V5.3. It will also show some screen captures along with a description of the components.

Introduction

- V5.3 Explorer & Services
 - ▶ Two MMC (MQSeries® Explorer - MQSeries Services) snap-ins
 - ▶ Windows® platform only
- V6.0 Explorer – based on Eclipse
 - ▶ Includes and extends function in both MMC snap-ins
 - ▶ Windows and Linux® platforms
- Components
 - ▶ CommonServices
 - ▶ PCF Classes (programmable command format)
 - ▶ Core / DataModel
 - ▶ UI
 - ▶ Clusters
 - ▶ Extensions

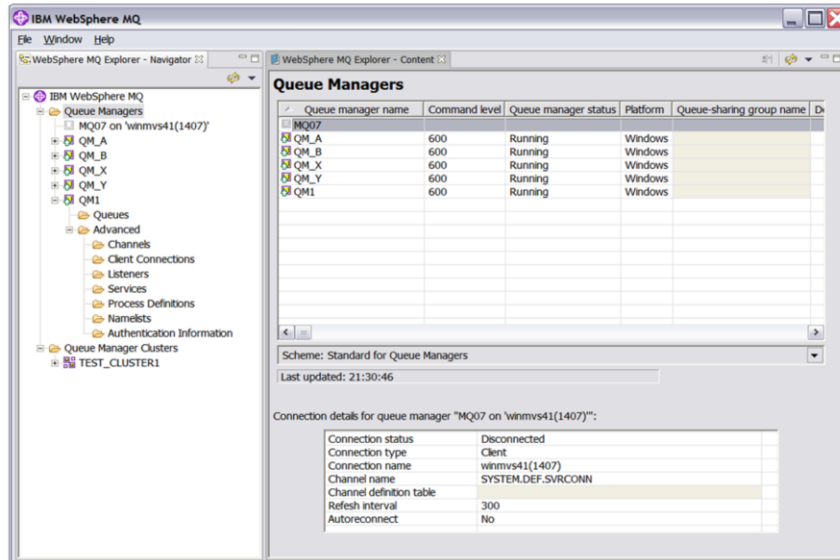
First, user interface changes of V5.3 as compared to V6.0 will be discussed, followed by a description of components and a more detailed discussion of the internals.

Introduction - V5.3 MQ Explorer



Shown here is V5.3 of the WebSphere® MQ Explorer Microsoft® Management Console, which only runs on Windows® platforms. The console can be used to configure remote queue managers and provides a tree and table view, which shows the queue manager and object status.

Introduction - V6.0 Explorer

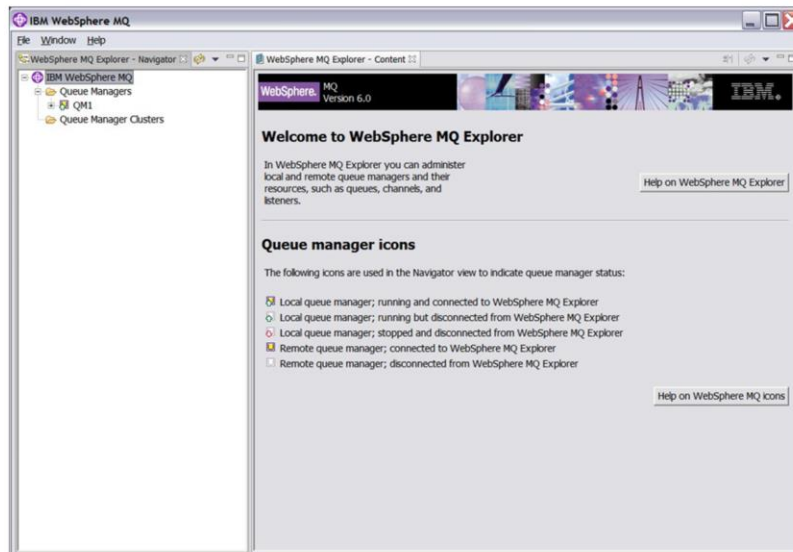


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As you can see, the new V6.0 Explorer looks similar to V5.3 with the tree and table views. However, V6.0 runs on both Windows and Linux™ platforms and is integrated with Eclipse V3.0. V6.0 also includes many advanced usability enhancements, such as advanced filtering by PCF, compare with, and schemes. The services and main explorer GUI have been merged into a single UI showing the listeners and services that previously required a separate GUI. In addition, z/OS® queue managers can now be remotely administered.

MQ Explorer - Screen captures

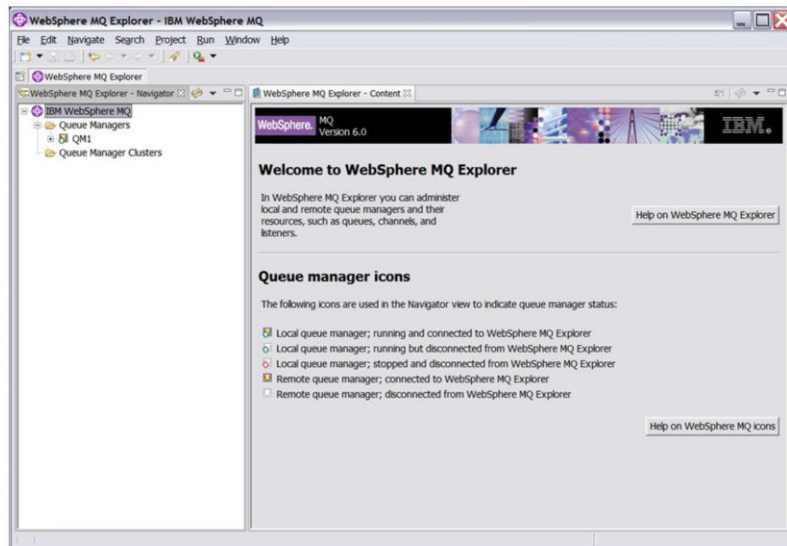
- Explorer runs in two modes ...as a standalone application



Explorer can be run in two modes. Standalone application or Standalone mode (shown here) is recommended for new users. Explorer runs as an application like the old MMC Explorer.

MQ Explorer

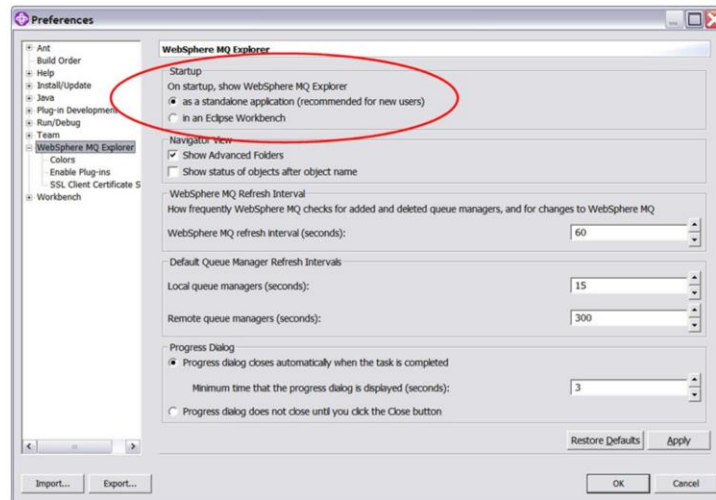
- Explorer runs in two modes ...in an Eclipse workbench



You can also run Explorer in the Eclipse workbench, but this is recommended only for advanced users. As you can see on the toolbar, you can run Explorer with other products and perspectives for an integrated system. This can be confusing to new users due to the complex view and combined perspectives.

MQ Explorer

- Mode is selected using the Preference Pages

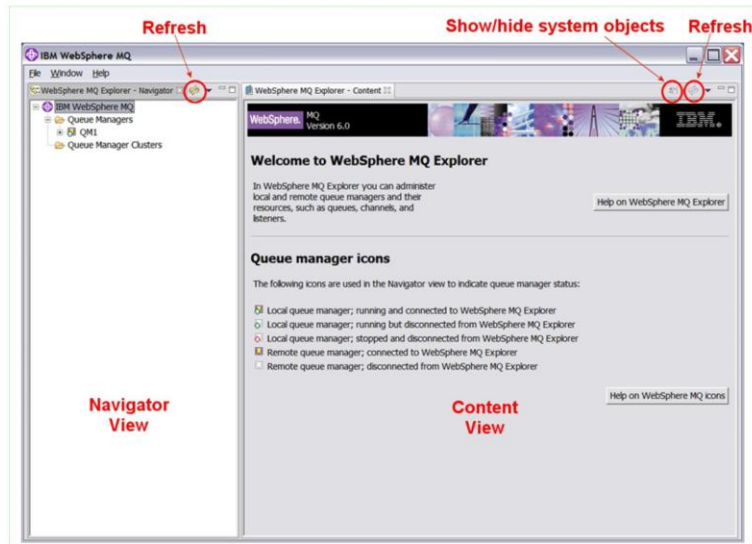


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The mode is set using the Explorer Preferences Pages. This sets the mode to be used the next time Explorer is started. This screen also provides other functions such as accessibility options and the ability to enable SSL.

MQ Explorer

- V6.0 Explorer elements



The Explorer has two Eclipse Views. The Navigator View displays a tree representing the MQ objects, while the Content View displays information about the selected items in the Navigator View tree. Both Views have a Refresh toolbar button and menu item. The Content View also has a toolbar button and menu item for selecting whether System Objects are to be shown or not. You cannot use the show/hide system objects and the refresh because the content view is purely a text only view.

MQ Explorer

- Showing a local Queue Manager

The screenshot shows the IBM WebSphere MQ Explorer interface. The Navigator View on the left shows a tree structure with 'Queue Managers' selected. The Content View on the right displays the details for 'Queue Manager QM1'.

Queue Manager QM1

Connection QuickView:

Connection status	Connected
Connection type	Local
Connection name	
Channel name	
Channel definition table	
Refresh interval	15
Autoreconnect	Yes

Last updated: 18:08:44

Status QuickView:

Queue manager status	Running
Command server status	Running
Channel initiator status	Running
Connection count	6

Last updated: 18:08:44

Properties QuickView:

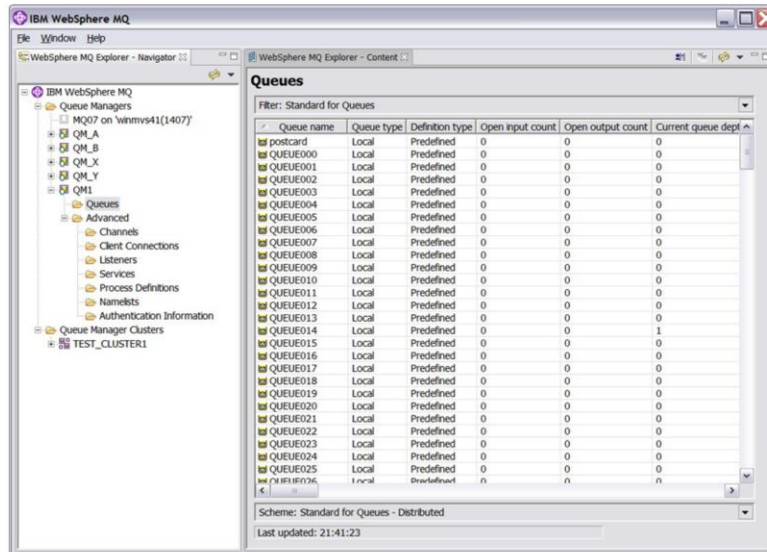
Queue manager name	QM1
Description	
Platform	Windows
Command level	500
Default transmission queue	
Startup	Automatic

Last updated: 18:08:44

Shown here is a local queue manager. When a Queue Manager is selected in the Navigator View, the Content View has three tables displaying the status and properties of the Queue Manager. Not all properties and status can be displayed for all queue managers. For example, properties and status for back-level queue managers or z/OS queue managers cannot be displayed in this view.

MQ Explorer

- Showing its queues



When the Queues folder is selected in the Navigator, the Content View displays a table listing the queues in that queue manager. You can see the system object icon at the top right of the screen, along with the temporary queue icon and the refresh icon, which can all be used in this view. There is also a filter bar and a schemes bar, which will be covered later in this presentation. At the bottom of the screen is the status bar, which displays when the screen was last updated and a progress indicator showing operations currently in progress. A similar display is available for all the objects in the navigator view. For instance, if you select channels, client connections, or listeners, you will see similar information in the Content View.

MQ Explorer

- Showing the status of a queue

Queue Manager Name: QM1 Queue Name: postcard

Queue status for the queue "postcard":

Queue name	postcard
Current queue depth	0
Open input count	2
Open output count	0
Uncommitted messages	No
Queue monitoring	Off
Media recovery log extent name	
Queue time	
Oldest message age	
Last put date	
Last put time	
Last get date	
Last get time	

Scheme: Standard for Queue Status - Distributed
Last updated: 18:42:01

Queue handle status for the queue "postcard":

Queue name	App name	Process	Thread	App type	Browse	Inquire	Input	Output	Set	Open options	User
postcard	eBSphere MQ\bin\amqpcard.exe	6440	2	User	No	No	Shared	No	No	Fail if queuing, Input shared	Graha
postcard	eBSphere MQ\bin\amqpcard.exe	6440	3	User	No	No	Shared	No	No	Fail if queuing, Input shared	Graha

Scheme: Standard for Queue Handle Status - Distributed
Last updated: 18:42:01

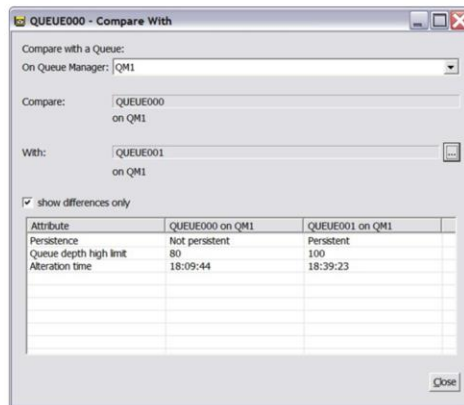
Refresh Close

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There is a context menu on each object that you can access using the right mouse button, where you can select from various items. One of the items you can choose is the status. This slide shows the status of a Queue, with general information displayed at the top and usage information, such as who has the queue open, at the bottom. Status dialogs can also be shown for other objects, including Queue Manager, Channel, Service, Listeners, and Coupling Facility, all following the same format as that shown here.

MQ Explorer

- Comparing two queues



Now some of the items new in version 6 will be discussed. Another context menu item on a Queue in the table launches a dialog allowing the properties of the Queue to be compared to those of another Queue. The Queue can be on the same or on a different Queue Manager. CompareWith is available for most objects in Explorer. Selecting the show differences only checkbox will only show attributes that are different from one object to the next. If this checkbox is not selected, all attributes will be displayed.

MQ Explorer

- Using a PCF Filter to limit the queues table content ...creating the filter

Filter Name:
All queues with messages

Include Queues where:
Queue name like *

- and -

Queue type equal to All Queues

- and -

Current queue de ... greater than 0

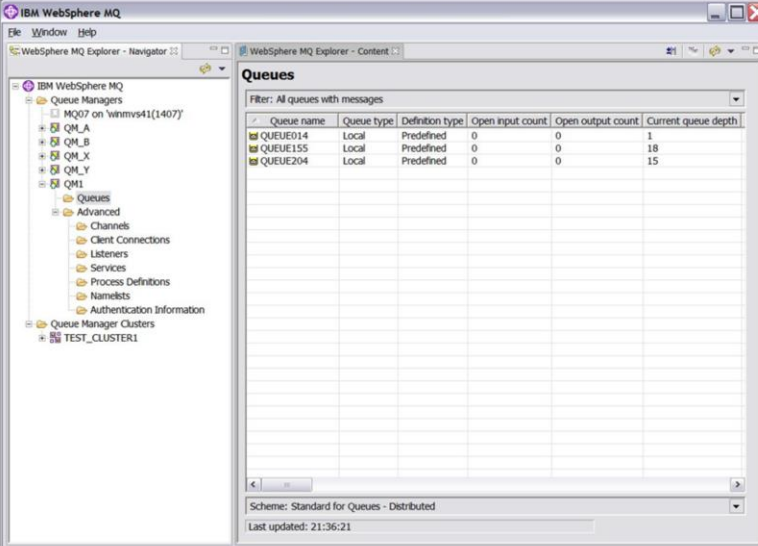
Automatically apply a Column Scheme when this filter is applied
Standard for Queues

Clear OK Cancel

The number of Queues shown in the table can be reduced by using a PCF Filter to select only those Queues matching specified characteristics. The filtering is done at the remote Queue Manager to reduce network traffic. For instance, if you only want to see queues with a depth of at least 16, you can filter on that property. To create a filter, specify a name for the filter and the attribute you want to filter on. Explorer allows named Filters to be created and persisted for each object type and a number of pre-defined Filters are provided.

MQ Explorer

- Using a PCF Filter to limit the queues table content ...result



The screenshot displays the IBM WebSphere MQ Explorer interface. On the left, a tree view shows the hierarchy of Queue Managers, including 'MQ207 on 'winmv941(1407)'' and its sub-objects like 'Queues', 'Advanced', 'Channels', 'Client Connections', 'Listeners', 'Services', 'Process Definitions', 'Namelists', and 'Authentication Information'. The 'Queues' folder is expanded. On the right, a table titled 'Queues' is displayed with a filter set to 'All queues with messages'. The table contains the following data:

Queue name	Queue type	Definition type	Open input count	Open output count	Current queue depth
QUEUE014	Local	Predefined	0	0	1
QUEUE155	Local	Predefined	0	0	18
QUEUE204	Local	Predefined	0	0	15

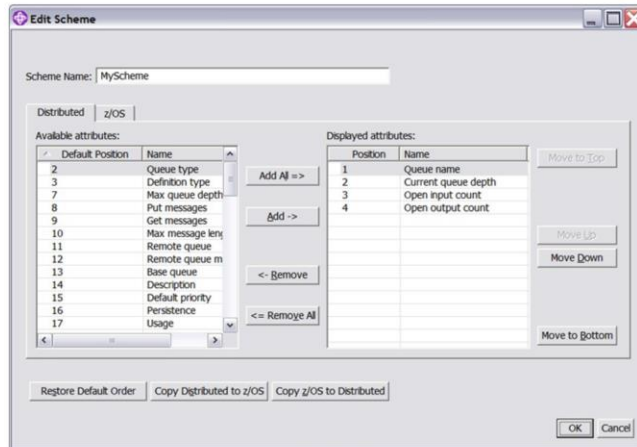
At the bottom of the window, the 'Scheme' is set to 'Standard for Queues - Distributed' and the 'Last updated' time is '21:36:21'.

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The screen capture shown here demonstrates how the list of Queues displayed has been reduced after applying the Filter.

MQ Explorer

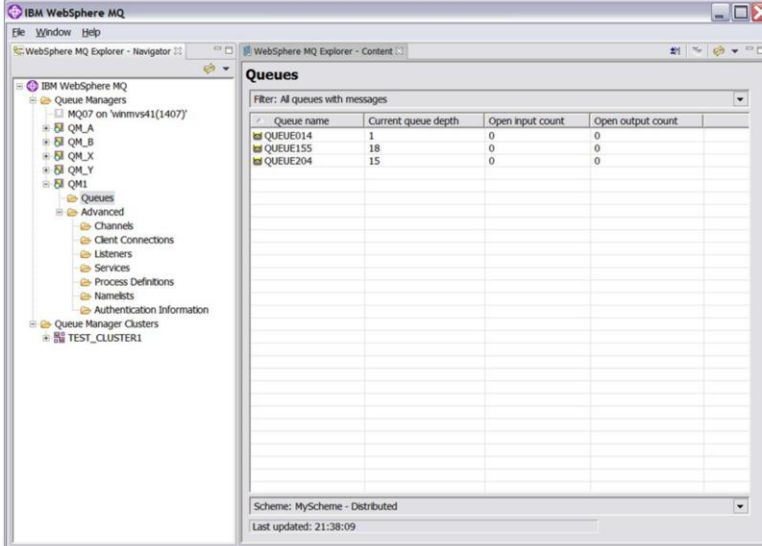
- Using a Scheme to alter the columns shown ...creating the scheme



The third new usability enhancement is schemes. The number and order of columns shown in the table can also be changed. A column order is known as a Scheme. Explorer allows named Schemes to be created and persisted for each object type. The tabs allow you to specify whether the scheme is applicable to distributed or z/OS queue managers. Next, you can select which columns you want displayed and the order you want them displayed in. You can then save the scheme and associate it with a particular filter. Explorer also ships a number of pre-defined Schemes.

MQ Explorer

- Using a Scheme to alter the columns shown ...result



The screenshot shows the IBM WebSphere MQ Explorer interface. The left pane displays a tree view of the MQ environment, including Queue Managers (QM_A, QM_B, QM_X, QM_Y, QM1), Queues, Advanced (Channels, Client Connections, Listeners, Services, Process Definitions, Namelists, Authentication Information), and Queue Manager Clusters (TEST_CLUSTER1). The right pane, titled 'Queues', shows a table of queues filtered by 'All queues with messages'. The table has four columns: Queue name, Current queue depth, Open input count, and Open output count. The data is as follows:

Queue name	Current queue depth	Open input count	Open output count
QUEUE014	1	0	0
QUEUE155	18	0	0
QUEUE204	15	0	0

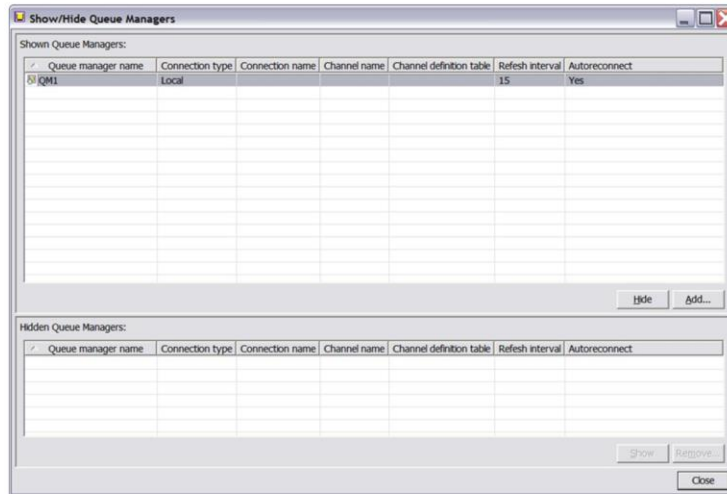
At the bottom of the right pane, the scheme is set to 'MyScheme - Distributed' and the last update time is '21:38:09'.

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The screen capture shown here demonstrates how the number of columns displayed has been reduced after applying the Scheme. This capability is extremely useful when you have a lot of queues and channels and you want to work with a particular subset.

MQ Explorer

- Adding a remote Queue Manager ...is done using the Show/Hide Dialog



As in V5.3, you can administer remote managers. You can use the Show/Hide Queue Manager dialog to add a remote queue manager to your navigator view. A context menu item from the Queue Managers node in the Navigator View tree item launches the Show/Hide Queue Managers Dialog. This dialog allows Queue Managers to be hidden, shown, added to Explorer and removed from Explorer. Click the add button to add a remote queue manager. This will launch the add remote queue manager wizard where you specify the name of the remote queue manager.

MQ Explorer

- Adding a remote Queue Manager ...using the Add Queue Manager wizard

Add Queue Manager

Specify new connection details
Provide details of the connection you want WMQ Explorer to set up

Queue manager name: MQ07

Specify connection details
 Use client channel definition table

Host name or IP address:

Port number: 1414

Server-connection channel: SYSTEM.ADMIN.SVRCONN

Autoreconnect

Automatically refresh information shown for this queue manager

Refresh interval (seconds): 300

< Back Next > Finish Cancel

The Add button on the Show/Hide Queue Managers Dialog launches the Add Queue Manager Wizard. The wizard allows a remote Queue Manager to be added using one of the following methods:

- Client connection specifying host, port and channel name
- Client connection using a client channel definition table
- Using a Queue Manager that is already connected (Queue Name Resolution)

Once you have entered the queue manager name and other information, click on the finish button to attempt to connect to the remote queue manager. In the screen shown here, a connection has occurred to a z/OS queue manager.

MQ Explorer

- Showing a z/OS Queue Manager adds a Queue Sharing Groups node to the tree

The screenshot shows the IBM WebSphere MQ Explorer interface. The left pane displays a navigation tree with the following structure:

- Queue Managers
 - MQ07 on winvsv41(1407)
 - Queues
 - Advanced
 - Channels
 - Client Connections
 - Process Definitions
 - NameLists
 - Authentication Information
 - Storage Classes
 - QM1
 - Queues
 - Advanced
 - Channels
 - Client Connections
 - Listeners
 - Services
 - Process Definitions
 - NameLists
 - Authentication Information
 - Queue-sharing Groups
 - EADE
 - Shared Queues
 - Coupling Facility Structures**
 - Group Definitions
 - Queues
 - Channels
 - Process Definitions
 - NameLists
 - Authentication Information
 - Storage Classes

The right pane displays the 'Coupling Facility Structures' table. The filter is set to 'Standard for Coupling Facility Structures'. The table contains the following data:

Coupling facility name	Stat...	Level	Recovery	Description	Alteration time	Alteration date
△APPLICATION1	Active	4	Yes		11:22:18	03-May-2005
△APPLICATION2	Active	4	Yes		15:02:20	29-Apr-2005

The scheme is 'Standard for Coupling Facility Structures' and it was last updated at 18:17:29.

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When at least one z/OS Queue Manager is shown in Explorer, additional items are added to the Navigation View tree to show the Queue Sharing Groups. An additional folder for Storage Classes is added under the z/OS Queue Manager. Shared Queues, Coupling Facility Structures and objects with group disposition are shown in folders under the Queue Sharing Group. These items only appear if you have a z/OS queue manager in your system.

MQ Explorer

- Showing a z/OS Queue Manager configuration ...Log

Queue manager name: MQ07 on 'wimmvs41(1407)'

Initial		Set	
Parameter type	Initial value	Parameter type	Set value
Deallocation interval	0	Deallocation interval	0
Maximum number of log archives	2	Maximum number of log archives	2
Maximum number of tape units	2	Maximum number of tape units	2
Input buffer size	28	Input buffer size	28
Output buffer size	400	Output buffer size	400
Output buffer count	20	Output buffer count	20
Log archive	Yes	Log archive	Yes
Dual logging used	Yes	Dual logging used	Yes
Dual archive logging used	Yes	Dual archive logging used	Yes
Dual BSDS used	Yes	Dual BSDS used	Yes

Last updated: 18:43:26

Last updated: 18:43:26

Log copy records

Parameter type	Log used	Data set name	Log copy no
Log copy	6	VIC1.MQ07.LOGCOPY1.DS01	1
Log copy	6	VIC1.MQ07.LOGCOPY2.DS01	2

Scheme: Standard for Log Copy

Last updated: 18:43:26

Refresh Close

z/OS queue managers have additional queue manager configuration attributes, as shown here. These additional attributes include the Archive, Log, Security, and System attributes. All of these attributes allow you to access additional panels where you can view and modify values appropriately.

MQ Explorer

- Using the Cluster plug-in

The screenshot displays the IBM WebSphere MQ Explorer interface. The Navigator View tree on the left shows the hierarchy of queue managers and clusters. The Content View shows a diagram of a channel from QM_X to QM_A. Below the diagram is a table of Cluster-sender channels for QM_A - Partial Repository.

Channel name	Cluster queue manager	Queue manager type	Definition type	Xmit protocol	Chg
TO.QM_A	QM_A	Normal	Auto explicit cluster-sender	TCP	Rur
TO.QM_A2	QM_A	Normal	Auto explicit cluster-sender	TCP	Rur
TO.QM_A3	QM_A	Normal	Auto explicit cluster-sender	TCP	Rur
TO.QM_B	QM_B	Normal	Auto explicit cluster-sender	TCP	Rur
TO.QM_B2	QM_B	Normal	Auto explicit cluster-sender	TCP	Rur
TO.QM_Y	QM_Y	Repository	Auto explicit cluster-sender	TCP	Rur

Scheme: Standard for Cluster Queue Managers - Distributed
Last updated: 18:35:13

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A new plug-in to Explorer is responsible for showing Cluster information. It adds a queue manager Clusters item to the Navigator View tree. The full and partial repositories for each cluster are shown under the tree item for each cluster. The Content View shows diagrams and tables of the cluster queues, cluster-sender channels and cluster-receiver channels

MQ Explorer

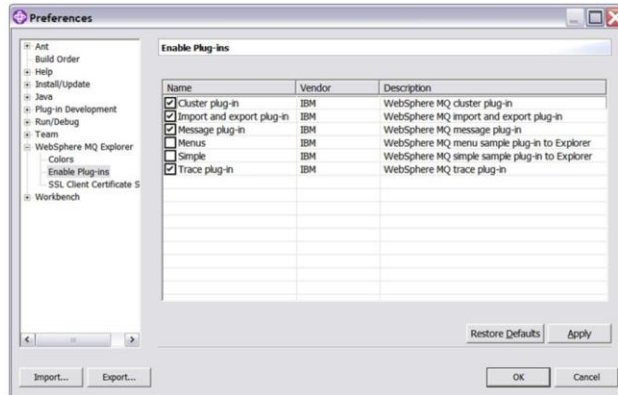
- Using the Message plug-in ...to view the messages on a queue

Position	Put date/time	User identifier	Put application name	Format	Data length	Message data	Accounting token
1	03-May-2005 18:12:12	Graham	30/eclipse\re\bin\javaw.exe	MQSTR	3	one	16010515000000943FE6D222B
2	03-May-2005 18:12:15	Graham	30/eclipse\re\bin\javaw.exe	MQSTR	3	two	16010515000000943FE6D222B
3	03-May-2005 18:12:19	Graham	30/eclipse\re\bin\javaw.exe	MQSTR	5	three	16010515000000943FE6D222B
4	03-May-2005 18:12:23	Graham	30/eclipse\re\bin\javaw.exe	MQSTR	4	four	16010515000000943FE6D222B
5	03-May-2005 18:12:28	Graham	30/eclipse\re\bin\javaw.exe	MQSTR	4	five	16010515000000943FE6D222B

Another plug-in to Explorer is responsible for messages on Queues. It adds context menu items to a Queue to put a test message on the queue, browse the messages on the queue, or clear the queue. Shown here is the view that allows you to browse the queues. From here you can look at individual messages on the queues.

MQ Explorer

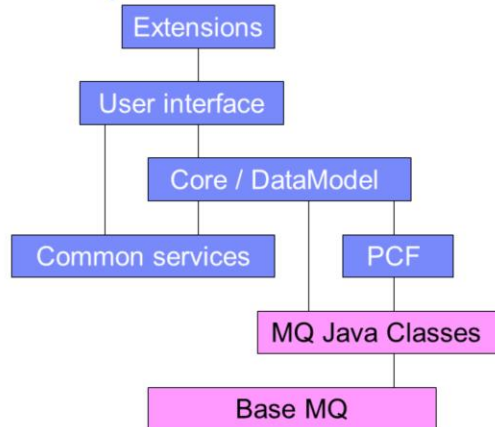
- Enabling and disabling plug-in extensions to Explorer



You do not have to have all of the previously identified plug-ins available at all times. Extension plug-ins to Explorer can be enabled or disabled using the Explorer Preferences Pages.

MQ Explorer - Components

- Base MQ
- MQ Java Classes
- Common Services
 - JNI and Trace
- PCF Classes
 - Provides PCF interface and Event model
- Core / Data Model
 - Provides object and attribute interface
- User Interface
 - Views, dialogs and controls
 - Plug-in interface for extending Explorer
- Extensions
 - Supplied plug-ins – Cluster, Message, Trace, Import/Export and samples



The Explorer components build up on Base MQ and on the MQ Java Classes. Common Services provide a JNI™ interface into Base MQ and services for Trace and FFST. PCF Classes provides an interface for sending PCF requests and an event model for monitoring changes to objects. Core / DataModel provides a model of MQ based on objects with attributes and attribute types. The User Interface provides the views, dialogs and controls to represent and configure MQ and provides an interface for extending Explorer using plug-ins. Extensions are the plug-ins supplied with Explorer. You also have the extensions such as Clusters and Message plug-in.

Summary

- WebSphere MQ V6.0 Explorer features

This presentation provided a brief overview of features and functions of WebSphere MQ V6.0 Explorer.

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