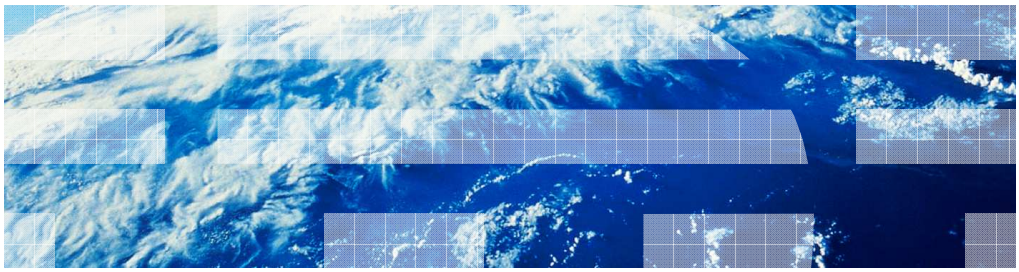
WebSphere Message Broker Version 7

Message Broker Explorer



WebSphere. software

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This session will describe the new Message Broker Explorer, introduced in Message Broker version 7.

This session will first provide a brief recap of Message Broker administration tools available in earlier versions of Message Broker, and a description of typical users and the roles undertaken by these users.

It will then describe how these tools required for these tasks have been provided in version 7, and discuss the details of the new Message Broker Explorer tool.

Message Broker administration tools

- Message Broker version 6.0 and 6.1
  - The administration perspective in the Message Broker Toolkit
  - Command line interface
  - CMP API
  - API exerciser
- Message Broker version 7
  - Message Broker Explorer (replaces administration perspective in toolkit)
  - Command line interface (enhanced commands in version 7)
  - CMP API
  - API exerciser

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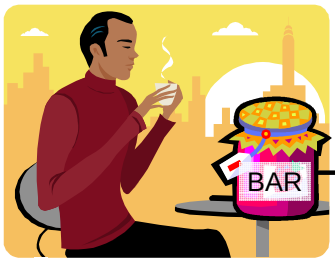
This slide summarizes the changes made for administration tools in Message Broker version 7. In earlier versions, all administration had to be done using the “Admin perspective” in the Message Broker toolkit, or using the command line or API for scripting. Even if administration personnel did not require the toolkit for application development reasons, tit was still necessary to install the toolkit to perform administration tasks.

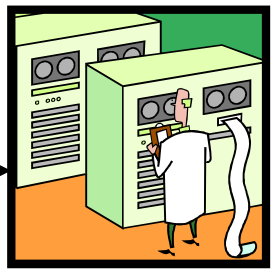
Message Broker user roles

Application Developer



- Create message flows and related artifacts
- Create, customize and deploy BAR files
- Unit test on local or non-critical brokers

Administrator



- Receive tested BAR files
- Controlled deployment
- Management of business critical MQ and broker environments

4 Message Broker Explorer © 2010 IBM Corporation

Message Broker version 7 has defined a clear distinction between the two primary user roles. Application developers are responsible for the development and testing of new and updated applications. This includes the creation of message flows, message sets, and any other artifact required to build a message broker application. These applications are compiled, and deployed into the test broker systems.

Administrators are responsible for the creation of brokers and execution groups on production systems, and for the deployment and management of applications on those production systems. This can also include the management of broker barfiles, and the management of any property overrides that are required for the production environment. They might also be responsible for the security administration of the broker environments.

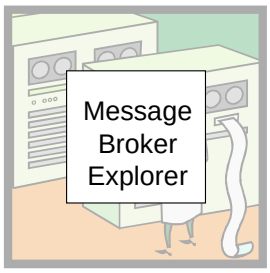
Tools usage in Message Broker version 7

Application Developer

Complete Application Development (AD) and Design, Code Unit Test environment

- Administration perspective replaced with design, code, unit test
- Create message flows and related artifacts
- Create, customize and deploy barfiles

Administrator



Administration Only

- 'Message Broker Explorer' only
- Import, customize and deploy barfiles
- Manage MQ and broker environments
- Smaller footprint
- Plug-in to MQ Explorer

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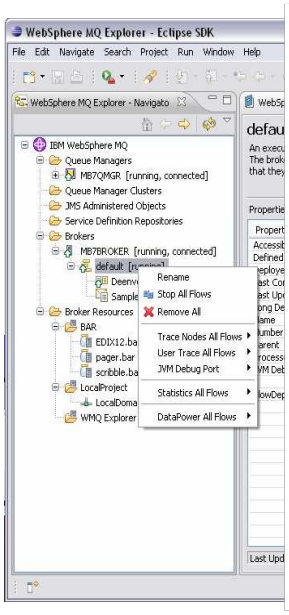
In Message Broker version 6 and 6.1, both the application development and administration tasks required access to the Message Broker Toolkit. This meant that an administrator had to have the toolkit installed and available, which was a significant resource overhead.

Message Broker version 7 provides a much clearer distinction between the tools needed for these purposes. The application developer will use the Message Broker Toolkit, which now has just one perspective, the application development perspective.

The administration function has been removed from the toolkit and is now provided in a new tool called the Message Broker Explorer, or MB Explorer. This is a plug-in to the MQ Explorer. The Message Broker Toolkit has been enhanced to enable applications to be deployed directly from the application development perspective. More details are available in the appropriate IBM Education Assistant sessions.

Graphical administration consistent with WebSphere MQ



- Brokers and queue managers shown in the same perspective
- All local brokers shown
- Ability to manage remote brokers
- Visual status indicators
- Link to queue managers and affected queues

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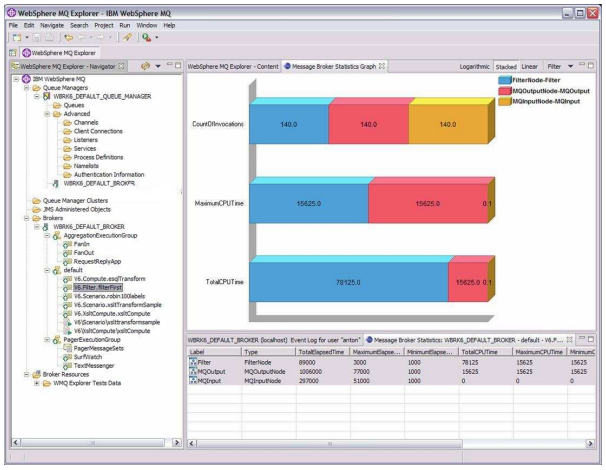
The Message Broker Explorer, or MB Explorer, is provided as an Eclipse plug-in to the MQ Explorer. This screen capture shows the standard MQ Explorer, with a queue manager and associated MQ objects.

When the MB Explorer is installed, a new category called “Brokers” is seen in the navigator. If there are any local brokers defined on the system on which the MB Explorer is installed, these will be discovered and displayed automatically. If you want to display brokers that are defined on remote systems, then these can be displayed, but you must provide the connection details for these brokers.

Clicking on the displayed brokers will show the specific details of the broker, including the information about the underlying queue manager. You can also right-click the broker, and select “Select Queue Manager” from the pop-up menu, which will immediately highlight the appropriate queue manager.

Options available to the administrator



- Know exactly what is going on
  - Information direct from the broker
  - All useful properties from the CMP API Exerciser displayed
  - Manage the broker's affected queues
  - Configurable services
  - Log for all users of the broker
  - Graphical statistics view and control
- Manage your broker networks more easily
  - Configure more broker settings
  - Offload WS-Security onto WebSphere Datapower devices

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The Message Broker Explorer provides information about all the brokers for which connection details are available. It presents information about the broker itself, and the applications deployed into the broker, and it enables you to make changes to those system and application settings. It provides tools to enable you to define and enable configurable services, and to control the tracing and debugging of applications.

In Message Broker version 6.1, the IS02 support pack provided the ability to control and collect statistics information, and to define the WS-Security control in WebSphere DataPower. This facility has been included in the Message Broker Explorer for version 7.

Installation

- Install Message Broker Explorer from Launchpad
  - Installs as plug-in to WebSphere MQ Explorer on Windows or Linux
  - Requires WebSphere MQ Explorer version 7.0.1
    - (WebSphere MQ server components not required)
- Start the MQ Explorer
  - Use the Start menu shortcut the first time
- You might want to consider using “Eclipse mode”
  - Allows more Eclipse capabilities (standard MQ Explorer is in “Stand-alone” mode
    - Use Window->Preferences
    - Select WebSphere MQ Explorer
    - Set Startup to “in an Eclipse Workbench”
    - Restart MQ Explorer

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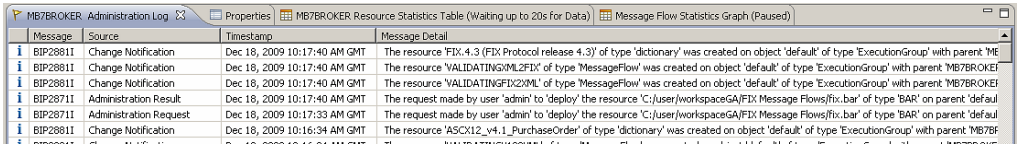
The Message Broker Explorer is installed as a plug-in to the MQ Explorer on Windows or Linux. The MQ Explorer from WebSphere MQ version 7.0.1 is required. However, it is not necessary to install the server components of WebSphere MQ.

After installation, you should that the MQ Explorer using the Start menu option in the Message Broker menu. This is to ensure that the MQ Explorer starts with a clean workspace, and any cached items are correctly cleared.

The default mode for the MQ Explorer is stand-alone mode. This mode limits the capabilities that are available, and you should consider using the Eclipse mode when using the MB Explorer plug-in. This is activated by setting the appropriate options under Window, Preferences.

Deployment process using Message Broker Explorer

- Prepare barfile
  - Message Broker Toolkit - build your barfiles
  - MB Explorer - import your barfiles into the MB Explorer or drag from MB Toolkit
    - Or can use an intermediate code repository
  - Customize barfile if necessary
- Deploy barfile
  - Deployment takes place in background
  - Deployment log updates when complete



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The Message Broker Explorer provides several ways to deploy a barfile. The required barfile is first prepared in the Message Broker Toolkit as usual. In development systems, the toolkit can be used to deploy the barfile directly. However, in production systems, the Message Broker Explorer is a more appropriate tool. The barfile is made available to the MB Explorer by importing the barfile, or by dragging directly from the toolkit, or by using a code repository.

The MB Explorer can then be used to apply any barfile overrides. If necessary, the barfile can then be saved in a code repository.

The barfile is then deployed into the execution group. This is a synchronous operation, and the result of the deployment is shown in the deployment log. The log will show what applications were deployed, the time and date of deployment, and who deployed the application.

MB Explorer provides a selection of deployment mechanisms

- Drag barfile from file system
- Drag barfile from Message Broker Toolkit application development perspective to execution group in MB Explorer
- Drag barfile from the “Broker Archive Files” in MB Explorer to execution group
- Right-click execution group, and select “Deploy” from pop-up menu to deploy several barfiles
  - From file system
  - From MB Explorer workspace
- Right-click barfile in workspace, select “Deploy File” in pop-up menu to deploy a barfile to a group of execution groups
  - Simultaneous deploys of a single barfile to several executions groups
- Use barfile properties page and select “Deploy Broker Archive”

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Message Broker Explorer provides several ways to deploy a barfile.

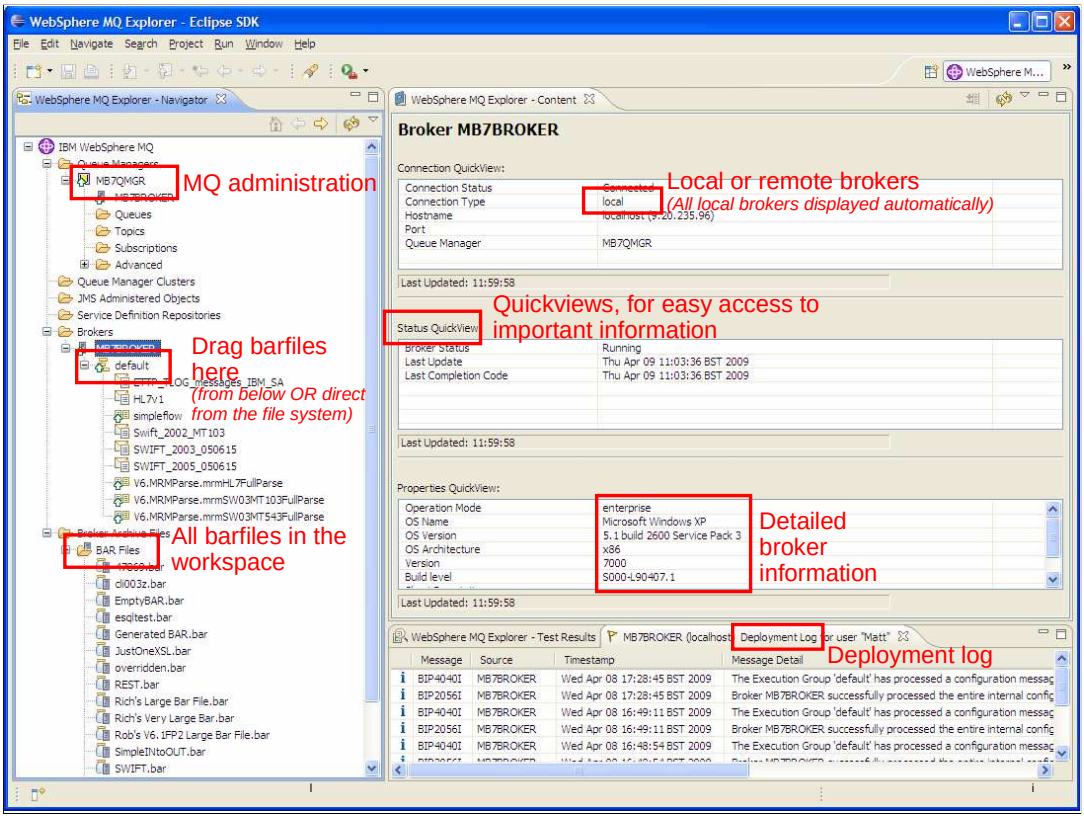
First, a barfile can be dragged directly from the native file system directly onto the target execution group. For example, if you are running on a Windows platform, you can use Windows Explorer to display the barfile, and drag directly from the Windows Explorer view onto the execution group in the MB Explorer.

Secondly, if you have both the MB Explorer and the Message Broker Toolkit installed on the same system, you can drag a barfile directly from the toolkit onto the MB Explorer.

Third, if you have imported the barfile into the MB Explorer workspace, or imported it from an external repository, you can drag this onto the execution group.

The next technique is to select the intended execution group, and right-click this in MB Explorer. This will then enable you to select the required barfile. As before, you can select this from the MB Explorer workspace, or from an external file system.

And finally, you can select the barfile in the MB Explorer workspace, and choose “Deploy File” from the pop-up menu. This technique allows you to deploy the barfile to more than one execution group, and more than one broker.



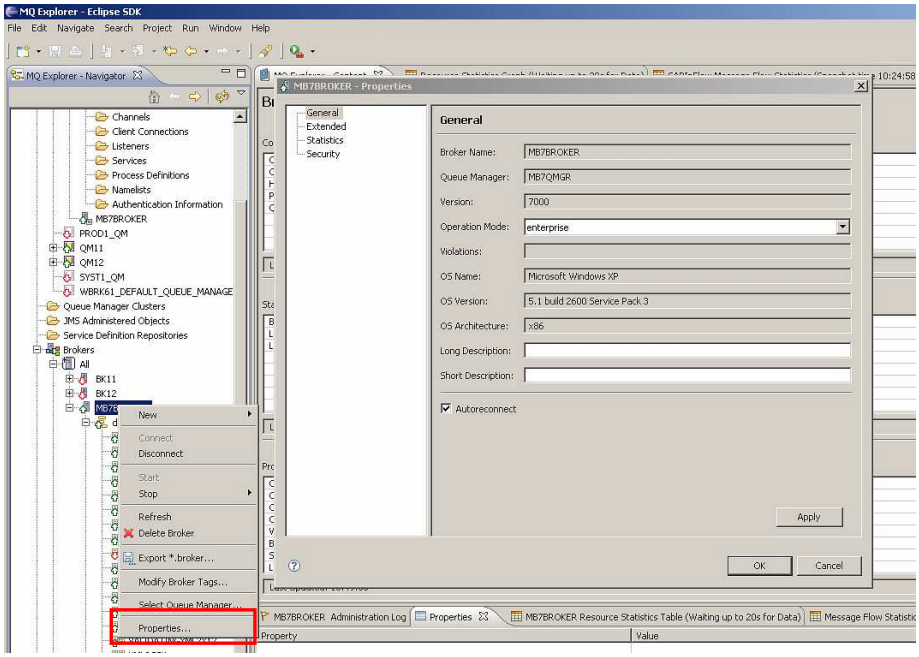
The Message Broker Explorer displays information about the broker environment, information about the defined execution groups, and information about the deployed applications.

The screen capture shown here has highlighted the broker called MB7BROKER. The properties of the broker are shown on the right, including information about the operating system, and whether the broker is local or remote. The host queue manager is also highlighted.

The barfiles that have been imported into the MB Explorer workspace are shown, and these can be deployed to the connected brokers as described before.

This example shows the default execution group, and the message flows and other artifacts that have been deployed to this execution group.

Broker properties



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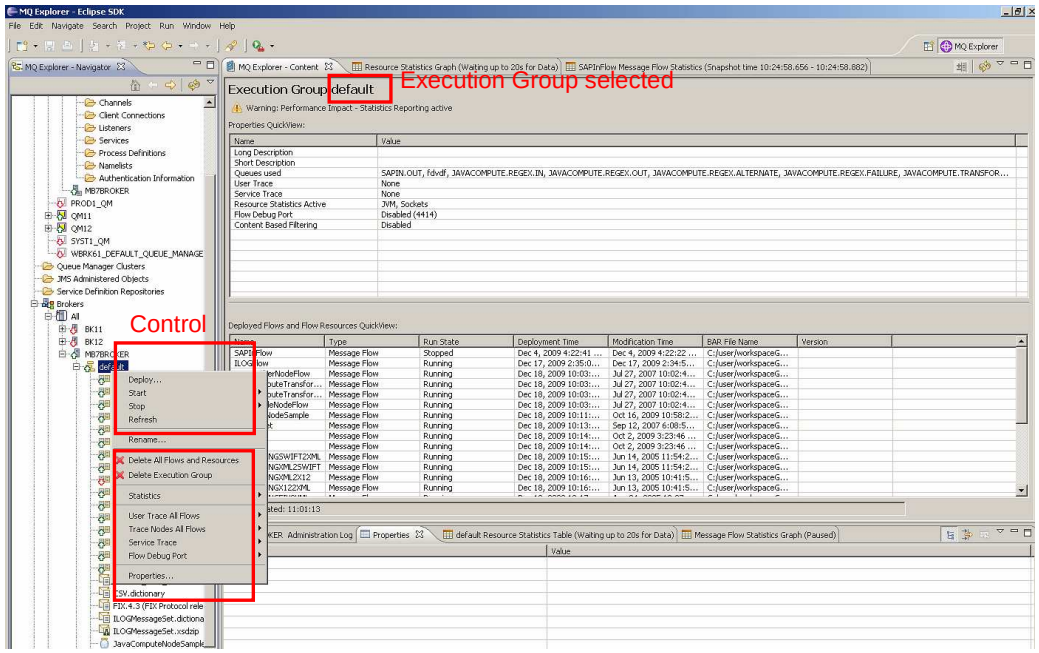
In this example, the properties of the broker have been selected from the pop-up menu. You can make changes to the properties of the broker here, including setting new or change security settings or policy sets.

You can also create new execution groups within the selected broker, by selecting New from the pop-up menu. And can start and stop the selected broker in the same way.

You can create and delete brokers in the MB Explorer. However, this is restricted to local brokers, that is a broker that is going to be defined on the same system as the MB Explorer. Remote brokers must be defined on the host platform first; they can then be added to the MB Explorer display and fully managed through the MB Explorer.

Execution group properties



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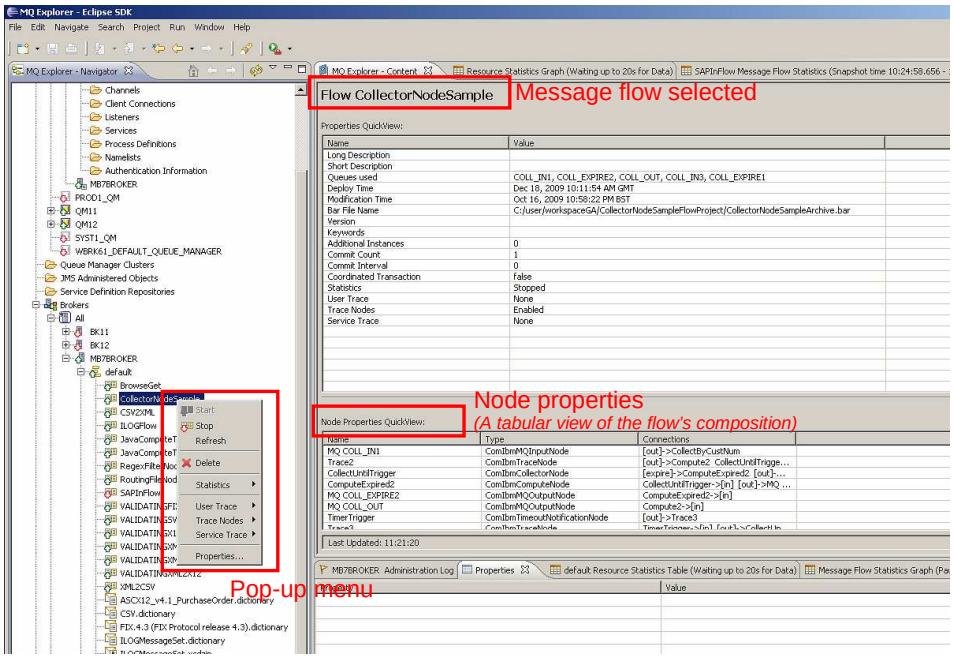
Selecting an execution group in the navigator shows information about the selected execution group. Information about the execution group itself is displayed, and a summary of all the artifacts that are deployed in the execution group.

In the top right area, you can see information about the execution group. This also includes information about all the MQ queues that are used by message flows in this execution group. However, this only includes information that is pre-defined in the message flow. This can be over-ridden by variables in the message flow, so this might not be a complete list of queues.

In the bottom right, a list of deployed artifacts is shown. This shows the name of the artifact, the date and time of deployment, and a range of additional information.

The pop-up menu of execution group can be activated, and you can perform many actions on the execution group, including starting and stopping the execution group, and deploying new applications.

Message flow properties



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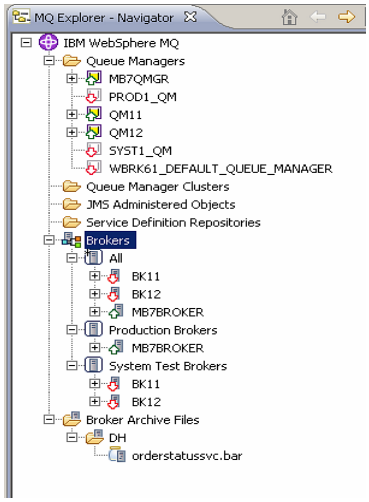
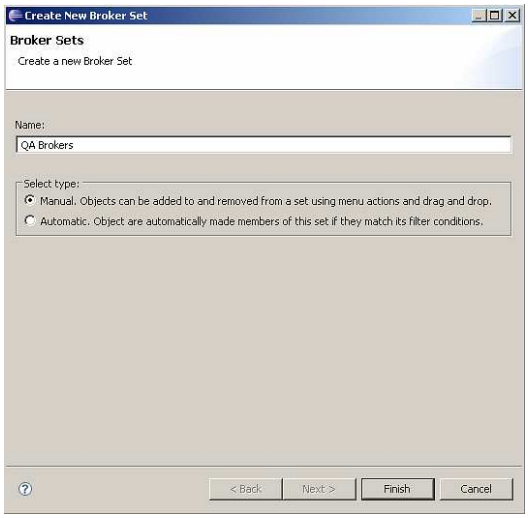
Selecting the deployed message flow in the execution group shows details of the selected message flow. This includes information about the deployment of the message flow, as well a information about the MQ queues that are used in the message flow.

Using the pop-up menu, you can start and stop the message flow, activate user trace or service trace, and activate or deactivate the trace nodes in the message flow.

Grouping brokers





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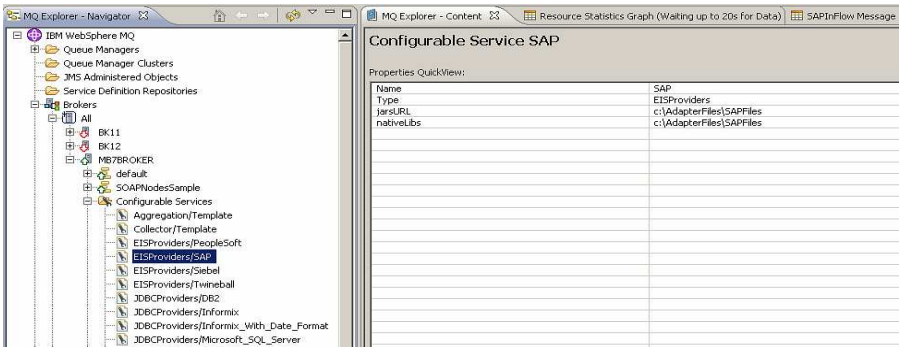
In the same way that you can group MQ queue managers in the MQ Explorer, you can group brokers into logical sets.

The example shown here has two groups named “Production Brokers” and “System Test Brokers”. This is configured by creating a new broker set with the required name, and then adding the appropriate brokers to this set. The screen capture on the right is obtained by right-clicking “Brokers” in the navigator and selecting “Broker Sets”, then “New Broker Set”.

One created, you can add brokers to the set by dragging the broker directly onto the broker set, or by selecting “Modify Broker Set” from the pop-up menu of the broker set.

Configurable services

- Create, delete, view and edit configurable services
- Configurable services wizard to base a configurable service on one already defined on the broker
- Import and export configurable services files to a broker from another brokers
  - Or drag definitions between configurable services directories



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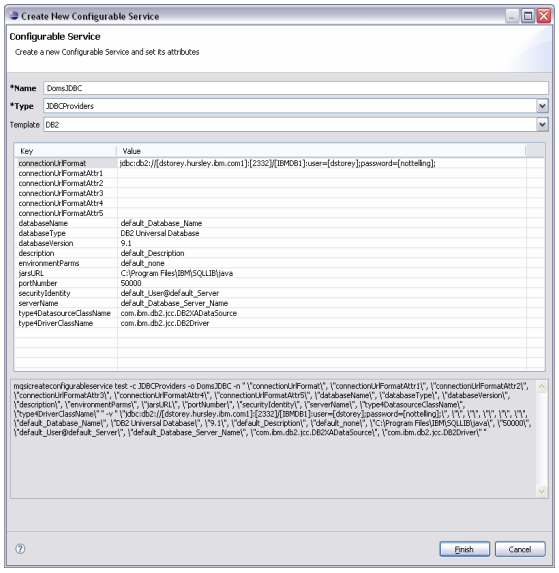
In earlier version of Message Broker, configurable services were defined using a command interface. Whilst this is still available, the MB Explorer now provides a more useful tool for the creation and management of configurable services.

Expanding the configurable services category in the navigator shows the defined services, and selecting a particular service shows the value that have been set for this. In the example shown here, the configurable services for the SAP access modules are shown.

You can replicate a defined configurable service on another by dragging the required definition directly onto the configurable services of the new broker. Alternatively, to ensure consistent across several brokers, you can export the configurable service definition to a file, and import this file into each of the new brokers.

Configurable services wizard

- Single page wizard
- Shows the equivalent command line available to copy and paste
- Allows you to base a configurable service on an existing one already on the broker



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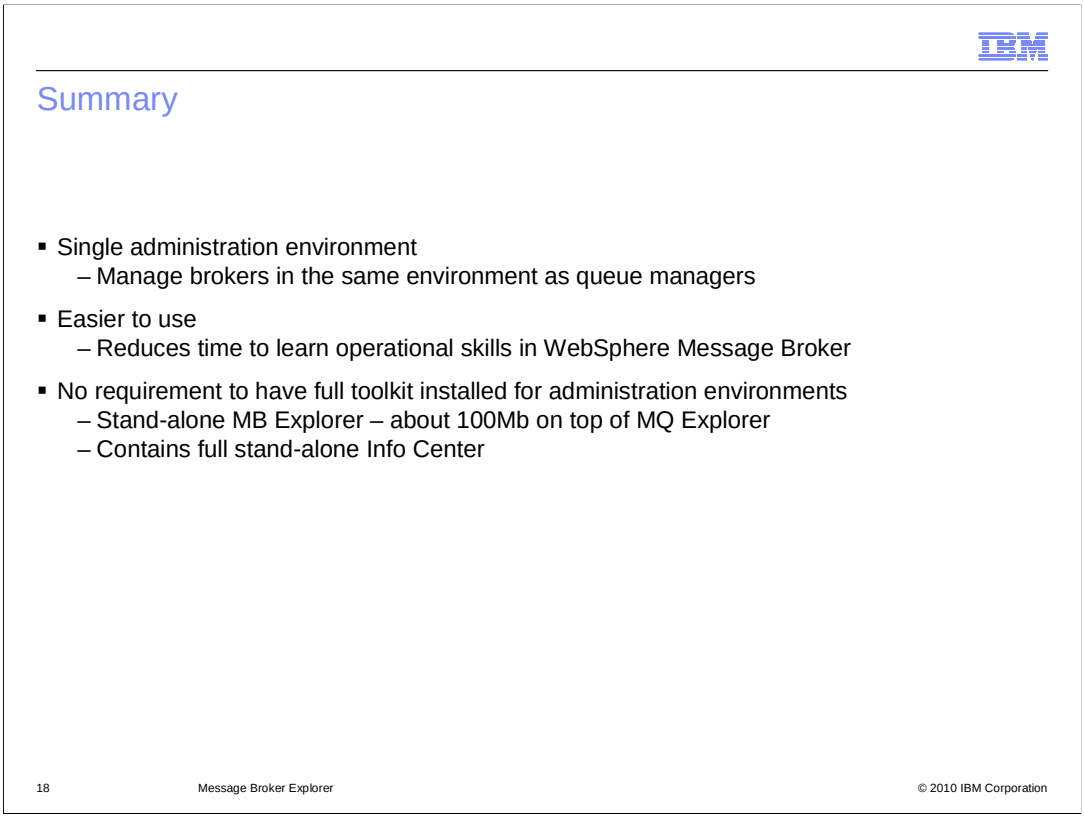
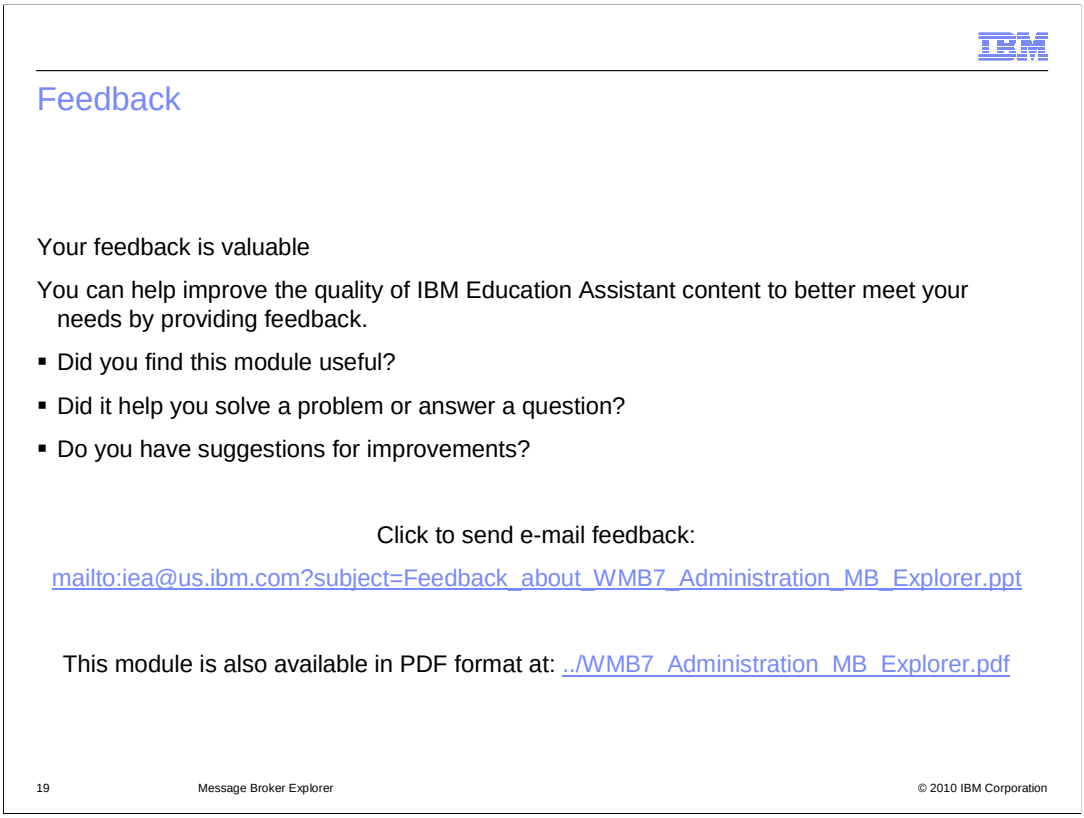
To create a new configurable service, right-click the configurable services category, and select New. This will open the wizard as shown in this screen capture. Select the type of configurable service that is required, and specify the necessary parameters.

The wizard will construct the appropriate command to create the new service. Clicking finish will run the command and create the new service. The generated command can be copied from the wizard and pasted into another area such as a file, for future use.



In summary, the Message Broker Explorer is a new facility for the operational management of the Message Broker runtime environment. The broker environment, along with deployed applications can be managed, and new broker components and applications can be deployed, started and stopped.

There is no requirement to install the Message Broker Toolkit for operational control, giving a significant saving in terms of disk space and memory requirements.



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