

IS02: WebSphere Message Broker Explorer plug-in for WebSphere MQ Explorer

Abstract

WebSphere MQ Explorer is an Eclipse-based graphical configuration tool that is provided with WebSphere MQ V6. In WebSphere MQ Explorer you can configure your queue managers and other objects. You can extend WebSphere MQ Explorer to manage other resources as well.

This plug-in enhances WebSphere MQ Explorer so that you can administer a WebSphere Message Broker network. After installing the plug-in, the following features are available in the Navigator view:

- Display remote and local brokers in MQExplorer Navigator view.
- View information and help in the Content view for each configuration manager, broker, execution group, flow.
- Create and delete local brokers without using the command line.
- Start, stop, create, and delete brokers, execution groups and message flows.
- Display and delete message flow resources in the Navigator view.
- Connect to local and remote Configuration Managers with optional WebSphere MQ security.
- Import and export Configuration Manager connection files.
- Associate a local broker with a local Configuration Manager. All WebSphere MQ channels and listeners are automatically created between the local broker and local Configuration Manager's queue managers.
- Associate a local or remote Configuration Manager with a named broker.
- Determine which queue managers are associated with brokers, and the name of the queue manager that is associated with each broker.
- Deploy a broker archive (bar) file to multiple execution groups in a single step.
- Display event log events from the selected Configuration Manager or broker in the Event Log view.
- Automatically restore connection parameters when you restart WebSphere MQ Explorer (the Broker Explorer state is saved between sessions).
- Customize Broker Explorer in the Preference pages.
- Get full service tracing.
- Get WebSphere Message Broker accounting and statistics information.
- Configure
 - DataPower appliance to handle WS Security

Screenshot of IS02

The screenshot displays the WebSphere MQ Explorer interface within the Eclipse Platform. The left-hand side features a Navigator pane showing a tree view of the IBM WebSphere MQ environment, including Queue Managers, Brokers, and Broker Resources. The main content area is titled 'Broker Statistics Graph' and shows a 3D stacked bar chart for the 'WSHOST_MFP1.WSHOST_WSHOST1' node. The chart displays four categories: NumberOfOutputTerminals (6.0), NumberOfInputTerminals (1.0), TotalCPUTime (0.0), and TotalElapsedTime (0.0). Each bar is segmented into three colors representing different compute nodes: blue for 'ComputeNode-Compute', red for 'ComputeNode-Compute1', and yellow for 'ComputeNode-Compute2'. Below the graph is a table titled 'WSHOST_MFP1.WSHOST_WSHOST1 node statistics' with columns for Label, Type, TotalElapsedTime, MaximumElapse..., MinimumElapse..., TotalCPUTime, MaximumCPUTime, MinimumCPUTime, and Co. The table lists various node types such as ComputeNode, WSInputNode, WSReplyNode, MQGetNode, MQInputNode, and MQOutputNode, all showing zero values for the listed metrics.

Label	Type	TotalElapsedTime	MaximumElapse...	MinimumElapse...	TotalCPUTime	MaximumCPUTime	MinimumCPUTime	Co
Compute	ComputeNode	0	0	0	0	0	0	0
Compute1	ComputeNode	0	0	0	0	0	0	0
Compute2	ComputeNode	0	0	0	0	0	0	0
HTTP Input	WSInputNode	0	0	0	0	0	0	0
HTTP Reply	WSReplyNode	0	0	0	0	0	0	0
MQGet store...	MQGetNode	0	0	0	0	0	0	0
MQInput fro...	MQInputNode	0	0	0	0	0	0	0
MQOutput st...	MQOutputNode	0	0	0	0	0	0	0
MQOutput to ...	MQOutputNode	0	0	0	0	0	0	0

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Prerequisites

Before you install this plug-in, you must install:

- WebSphere Message Broker Runtime v6.0.0.1 or above
- WebSphere MQ Explorer (upgraded to Eclipse 3.0.2) v6.0.2.0 or above

The Broker Explorer plug-in is supported on Windows XP and Linux (x86 platform).

Upgrading WebSphere MQ Explorer to Eclipse 3.0.2

To upgrade WebSphere MQ Explorer to Eclipse 3.0.2:

1. Start WebSphere MQ Explorer.
2. From the **Window** menu, click **Preferences**. The Preferences dialog opens.
3. On the WebSphere MQ Explorer page of the Preferences dialog, in the Startup section, click **in an Eclipse Workbench** (as shown in more detail in the Installation Instructions below).
4. Close and restart **WebSphere MQ Explorer**.
5. In WebSphere MQ Explorer, click **Help > Software Updates > Find and Install**. The Install/Update wizard opens
6. Click **search for Updates of the currently installed features**, then click **Next**. Wait for the list of available updates to be displayed.
7. Click **Eclipse 3.0.2** to highlight it, then click **Finish**.

The Broker Explorer plug-in does not work on versions of Eclipse before Eclipse 3.0.2.

Migrating from a previous version of IS02

V1

Previous versions of IS02 had no state information saved and so there is no user data to migrate. However, to migrate the plug-in code from an earlier version of IS02 to this version:

1. Close any open WebSphere MQ Explorer in which IS02 is installed.
2. Delete the entire directory in which you originally installed IS02.
3. Follow the Installation Instructions below to install the new version of IS02.

V2

To migrate from IS02v2 you need to:

1. Export your configuration managers to individual files. (See Exporting a WebSphere Message Broker V6 connection file)
2. Close any open WebSphere MQ Explorer in which IS02 is installed.
3. Delete the entire directory in which you originally installed IS02.

4. Follow the Installation Instructions below to install the new version of IS02.
5. Import your configuration managers using the connection files in your workspace to recreate your configuration manager connections.

Installation Instructions

To install into an existing WebSphere MQ Explorer using the .links method:

1. Download **IS02.zip**.
2. Using an unzip utility that supports large file names, unzip the file to any location, for example, **C:\MBAdmin** or **/usr/opt/MBAdmin**. This location will be the installation location of the plug-in.
- 3.
- 4.
- 5.
- 6.
- 7.

8. Close **WebSphere MQ Explorer**.
9. From your unzipped location edit the file:
com.ibm.etools.wmadmin.broker.explorer.link so that the location points to your unzipped directory. In this case **path=C:/MBAdmin** or **path=/usr/opt/MBAdmin**. NB. You must use a forward slash for windows directories in the link file this is due to an Eclipse 3.0.2 bug.
10. Move this file to your MQExplorer eclipse location, default location is:
C:\Program Files\IBM\Eclipse SDK30\eclipse\links
11. Restart your MQExplorer
- 12.

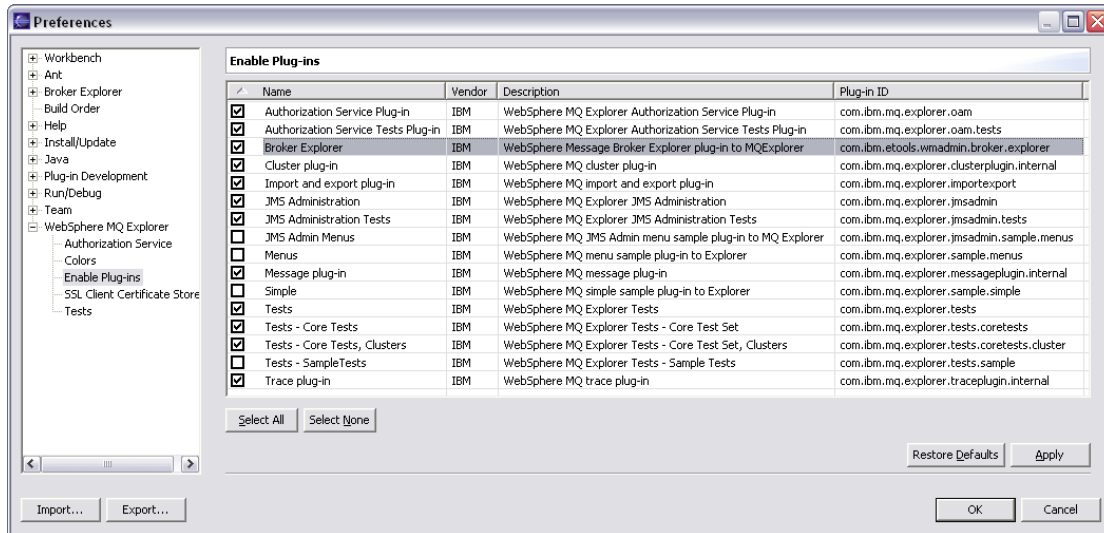
The following figure shows the main Eclipse SDK installation and the WebSphere MQ Explorer extension.

- 13.
- 14.
- 15.

You can now view and connect to all local brokers from WebSphere MQ Explorer. You can also connect to remote Configuration Managers to display brokers in other domains.

Tip:

You can deactivate the Broker Explorer plug-in on the **WebSphere MQ Explorer > Enable Plug-ins** page of the Preferences dialog by clearing the Broker Explorer plug-in as shown in the following figure.



First Steps

Creating the Default Configuration

If you are new to WebSphere Message Broker, you can create the Default Configuration which creates the basic components that you need to explore WebSphere Message Broker.

To create the Default Configuration:

In the Navigator view, right-click the **Brokers** folder, then click **Create Default Configuration** in the content page on the right.

The Default Configuration creates a working broker, Configuration Manager, and queue manager on your local system so that you can run the WebSphere Message Broker samples.

The following components are created by the Default Configuration:

Broker:	WBRK6_DEFAULT_BROKER
Configuration Manager:	WBRK6_DEFAULT_CONFIGURATION_MANAGER
Queue manager:	WBRK6_DEFAULT_QUEUE_MANAGER
Database:	WBRK6DB6

You can later create other brokers to use with the default Configuration Manager.

Using the Samples

There are several samples available for you to test the system provided with this SupportPac.

To use the samples:

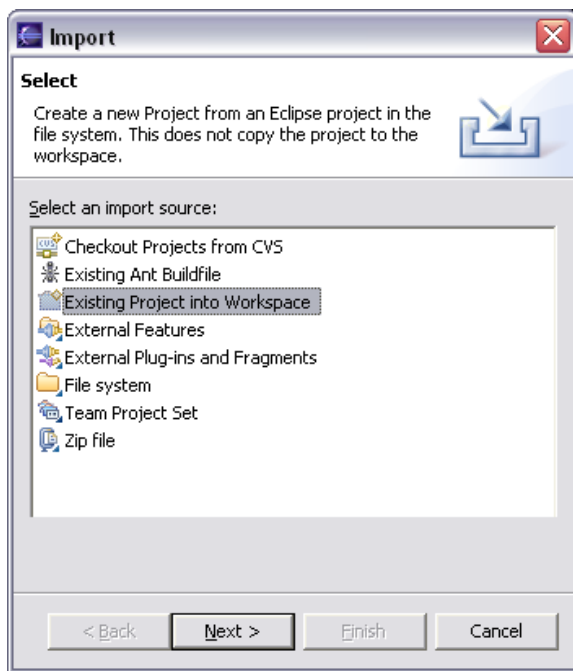
1. Click **Help > Samples Gallery**. The Samples Gallery opens in a new window.
2. In the Samples Gallery, expand **Application samples**.
3. Expand **Message Broker - Getting Started samples**.
4. Run the Pager and Scribble samples. The Samples Gallery provides instructions about how to setup and run the samples.

Importing existing bar files, server projects and connection files

To import existing bar files (*.bar) and connection files (*.configmgr), you must import the server projects that contain the bar files from your development environment.

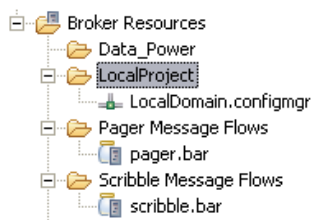
To import the server project:

1. Click **File > Import**. The Eclipse Import wizard opens.
2. Click **Existing Project into Workspace** then click **Next**.



3. Browse to the server project location, then click **Import**.

The server project is displayed under the **Broker Resources** directory in WebSphere MQ Explorer, along with the bar files and connection files in the server project, as shown in the following figure.



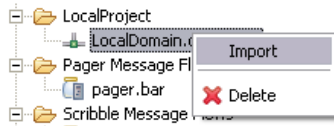
You can also create a new server project in WebSphere MQ Explorer and import individual bar files into the server project (in the Import wizard, click the **File system** option).

Server projects have the Eclipse project nature “com.ibm.wtp.server.core.nature” and are created with this nature by the Broker Explorer plug-in.

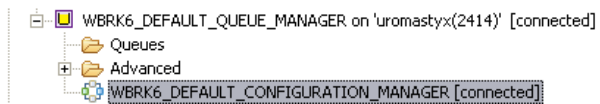
Importing a WebSphere Message Broker V6 connection file

To import a remote Configuration Manager connection definition:

1. In the server project, right-click the .configmgr file.
2. Click **Import**.



A remote queue manager definition is created in WebSphere MQ Explorer and the Configuration Manager is displayed under the queue manager, as shown in the following figure.



All the brokers in the Configuration Manger's domain are then added under the **Brokers** directory and WebSphere MQ Explorer tries to connect to them.

Creating an Execution Group

On creating an execution group you can select 32 or 64 bit architecture.



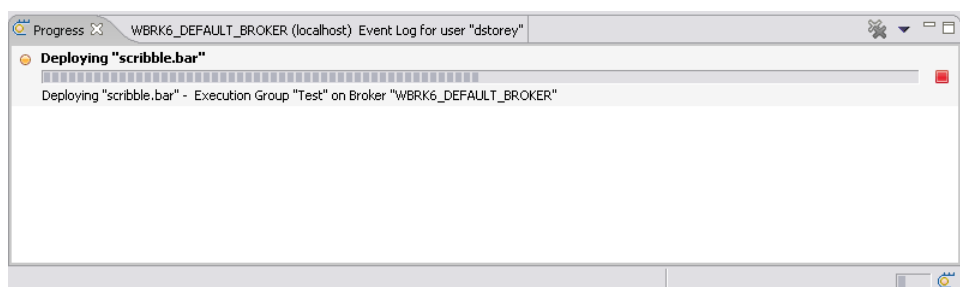
Deleting an Execution Group

To delete an execution group you must first stop all the message flows in the execution group and then remove all the message flows from the execution group.

Deploying to an Execution Group

Before you can deploy to a broker you must first make sure that it is started and has at least one execution group:

1. Under the **Brokers** folder, right-click the broker, then click **Start**. An Eclipse background job starts, which starts the broker.
You can start and stop only local brokers with this SupportPac.
2. After the broker has started, if you need to create an execution group, right-click the broker, then click **New Execution Group**. You can create execution groups on both local and remote brokers.
3. To deploy a bar file, right-click the bar file, then click the name of the execution group to which you want to deploy the bar file. If you select multiple execution group, the bar file is deployed to each of the execution groups in sequence.

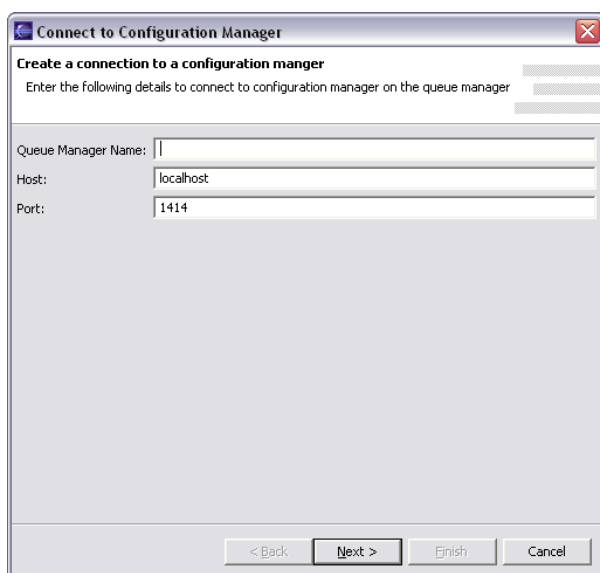


When the deployment has completed successfully, the message flows and other resources are displayed under the execution group.

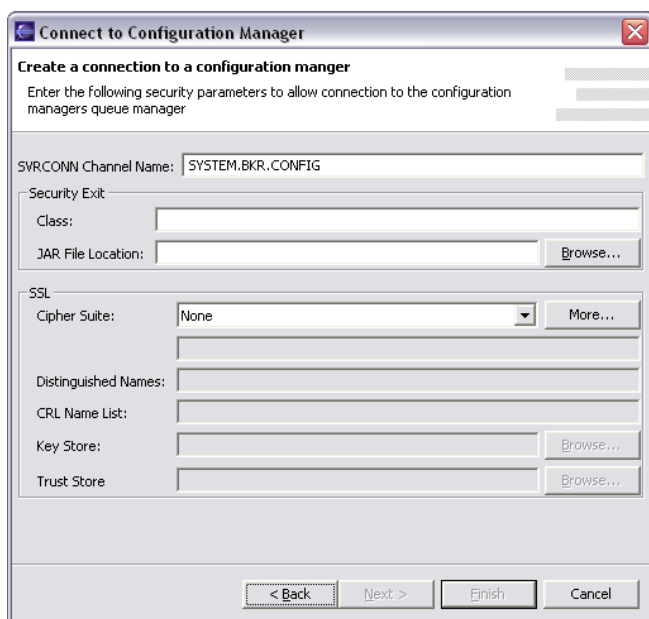
Connecting to a Configuration Manager

To connect to a remote Configuration Manager:

1. Right-click the **Brokers** directory, then click **Connect**.
2. Enter the connection details in the wizard that opens.
The value of the Host field can be the dotted decimal IP address or the host name.



3. Click **Next**.
4. If you want to connect to the Configuration Manager using WebSphere MQ security settings, specify the security connection parameters. Use the special location “localhost” to define security settings for local Configuration Manager connections.



A remote queue manager definition is created in WebSphere MQ Explorer and the Configuration Manager is displayed under the queue manager.

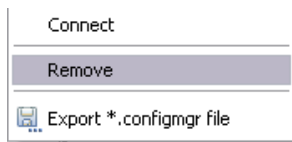


All the brokers in the Configuration Manger's domain are then added under the **Brokers** directory and WebSphere MQ Explorer tries to connect to them.

Removing a Configuration Manager

To remove a Configuration Manager and its brokers from the Navigator view:

1. In the Navigator view, right-click the **Configuration Manager**.
2. If WebSphere MQ Explorer is connected to the Configuration Manager, click **Disconnect**.
3. Right-click the Configuration Manager, then click **Remove**.



The Configuration Manager and its brokers are removed from the Navigator view.

Exporting a WebSphere Message Broker V6 connection file

To export a .configmgr file so that it can be used in the Message Brokers Toolkit:

- At any time, right-click the Configuration Manager, then click **Export *.configmgr file**

Importing a WebSphere Message Broker V6 connection file

To import a .configmgr file that has previously been exported, you must first create a server project:

- Right-click the **Broker Resources** folder, then click **New > ServerProject**.

You can then import individual bar files into the server project using the **File system** option in the Import wizard.

Server projects have the Eclipse project nature “com.ibm.wtp.server.core.nature” and are created with this nature by the Broker Explorer plug-in.

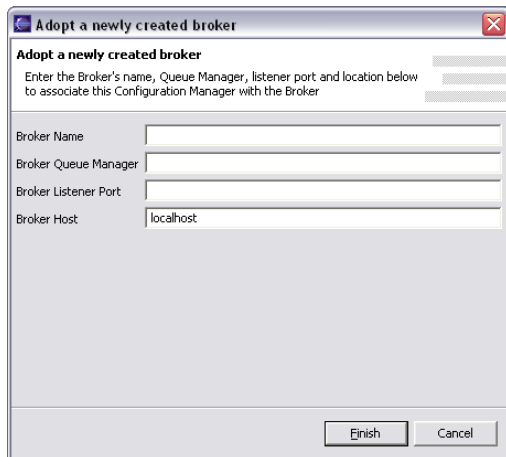
You can then follow the instructions for “Importing a WebSphere Message Broker V6 connection file” in the “Importing existing BAR files, Server Projects and Connection Files” section.

Adopting a Broker

A Configuration Manager can adopt a newly created broker using the “Adopt a newly created broker” wizard. The Configuration Manager cannot adopt a broker that is already associated with another Configuration Manager.

To adopt a broker:

1. Right-click the connected Configuration Manager, then click **Adopt a Broker**.



If the broker is on the localhost, the channels, transmission queues, and listeners are created automatically. The broker and broker queue manager pair are also added to the Configuration Manager’s repository.

If the broker is on a remote system, you must create the following WebSphere MQ resources:

On the Configuration Manager’s queue manager:

Object	Name	Other details
Transmission queue	<i>broker_queue_manager_name</i>	
Sender channel definition	CONFIG.TO. <i>broker_queue_manager_name</i>	Set the Connection Name property to the host name and port of the broker queue manager. Set the Transmission Queue property to the name of the transmission queue that you just created.
Receiver channel definition	<i>broker_queue_manager_name</i> .TO.CONFIG	

On the broker's queue manager:

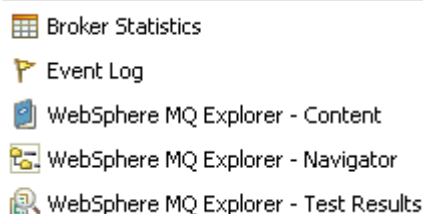
Object	Name	Other details
Sender channel	<i>broker_queue_manager_name</i> .TO.CONFIG	Set the Connection Name property to the host name and port of the Configuration Manager's queue manager.
Receiver channel	CONFIG.TO. <i>broker_queue_manager_name</i>	
Listener	Use the port number that the Connection Name uses.	

The broker name and broker queue manager pair are automatically added to the Configuration Manager's repository.

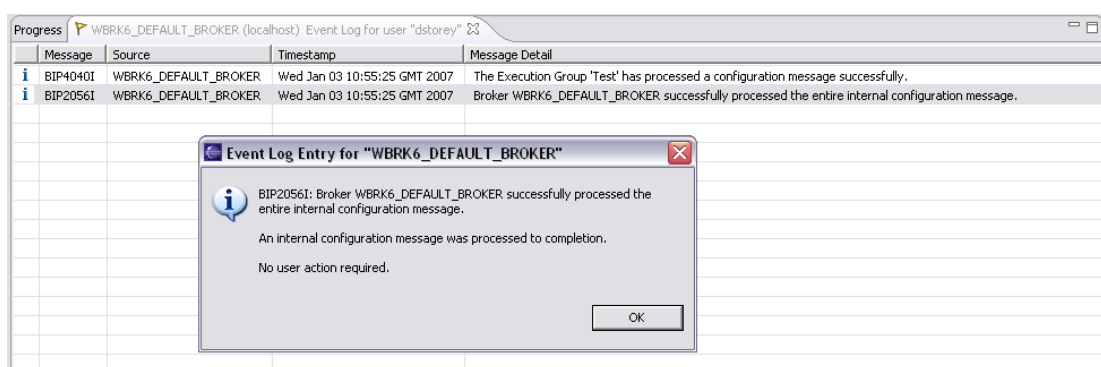
Event Log viewer

You can view the broker and Configuration Manager event log for your user ID by opening the Event Log view:

Click **Window > Show View > Event Log**



Double-click an entry to see the full log entry.



You can clear the log, and you can export the log for audit purpose.



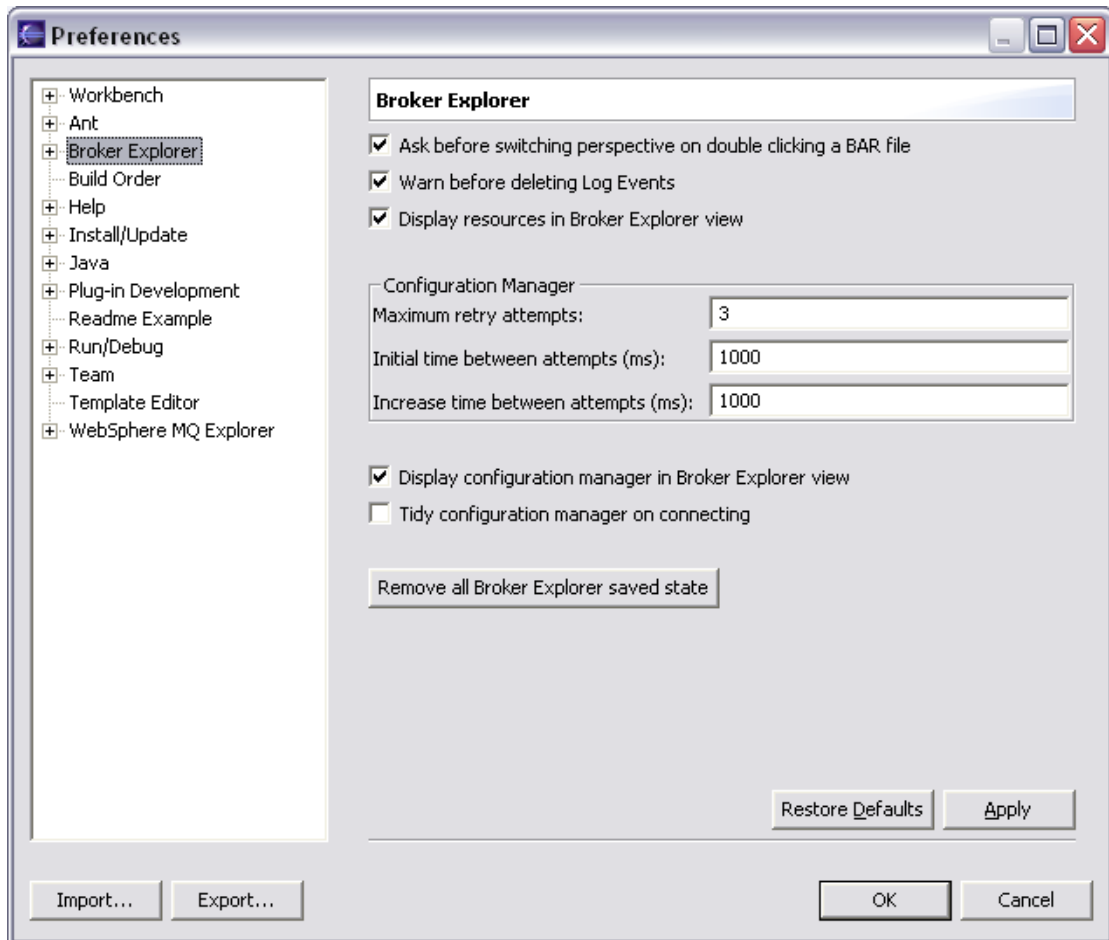
The Event Log view is updated in real-time and reflects the entity that is currently selected in the Navigator view:

- If a Configuration Manager is selected, all the events of its brokers are displayed.
- If an individual broker is selected, the log is filtered to show just the log events of that broker.

Preference Pages

Main Preferences

You can alter the default behavior of the Broker Explorer plug-in using the preference pages.



The following table describes the options in the Preferences:

Option	Behavior when selected
Ask before switching perspectives on double clicking a bar file	When you double-click a bar file, a dialog asks whether you want to switch to the Resource perspective to open the bar file.
Warn before deleting Log Events	When you delete a log event, a dialog is displayed to ask if you are sure that you want to delete the log. (When not selected, the log event is deleted without any prompt.)
Display resources in Broker Explorer View	Message flow resources are displayed in the Navigator view. (When not selected,

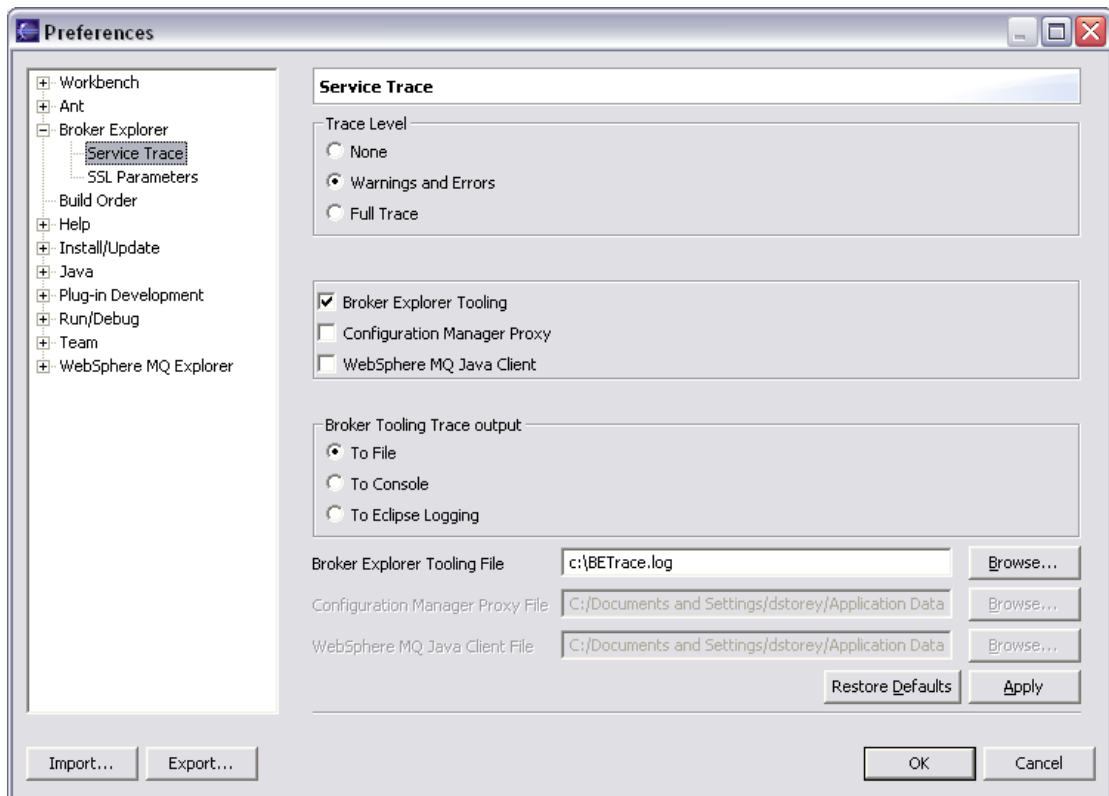
	the message flow resources are hidden from the Navigator view.)
Display configuration manager in Broker Explorer view	Displays the Configuration Manager. (When not selected, the Configuration Manager is hidden from all views.)
Tidy Configuration Manager on connecting	<p>This is an advanced feature that enables you to tidy up your Configuration Manager repository.</p> <p>On connection to a Configuration Manager a series of checks are run on the Configuration Manager's queue manager to make sure that the Configuration Manager can communicate with all the brokers defined on it. If communication channels or transmission queues cannot be found, message boxes are displayed so that you can remove broker entries.</p> <p>By default, this option is not selected. If you do not want to tidy up a Configuration Managers internal configuration this can be left turned off.</p>
Remove all Broker Explorer saved state	Resets the persisted model to the initial installed state, removing all remote connection information and local security information.

Service Trace

You can set various levels of trace for Broker Explorer:

- **Warnings and Errors:** Warnings or extra alert information and all exceptions output. This mode is safe to run in and provides no performance degradation.
- **Full Trace:** complete method call stack. This slows down Broker Explorer considerably and produces large log files. Only select this option if you are asked to do so by IBM service to investigate a problem in Broker Explorer.

NB. The Broker Explorer trace is batched internally up to 2KB before being written to disk when you turn off tracing this buffer is flushed to the disk.



There is only one level of trace for the Configuration Manger Proxy and the WebSphere MQ Java Client and all trace output is written to file.

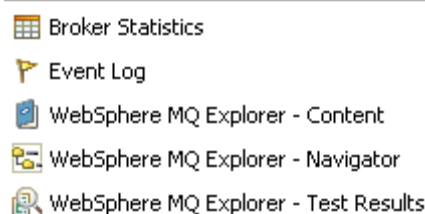
Accounting and Statistics

Important: To use the Accounting and Statistics functionality you must have JMS setup on your broker's queue manager. Follow the instructions in the "Setting up JMS for use in IS02" section below.

Starting the Accounting and Statistics plugin

To display the two accounting and statistics views necessary to view your statistics:

Click **Window > Show View > Broker Statistics**



The Message Broker Statistics view displays the statistics table and the Message Broker Statistics Graph view displays the corresponding graph.

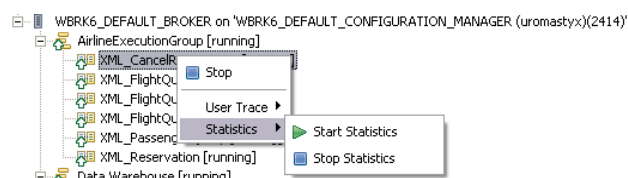
The Message Brokers Statistics Graph view uses the table view and so requires this view to be populated.

When these views are initially opened they connect to all available brokers that you have in your workspace and try to collect statistics data from them. If the Statistics Graph title shows "Waiting for data" then no statistics data has arrived. On receiving data the Graph will update whenever new data is available.

Controlling Accounting and Stats

To turn on collection of data for a message flow:

In the Navigator view, right-click the message flow, then click **Start Statistics**.



In about 30 seconds your system starts receiving some data. When you click a broker, execution group, or message flow in the Navigator view, the table and graph are

refreshed to show the statistics of that selection. If no data is available, the views are solid gray.

Viewing Statistics Data

The data is refreshed when new data arrives. But you can click **pause** on the Graph on the title bar to hold the current data in memory. This allows you to examine that snapshot of data as a moment in time. Clicking on **play** causes the data to revert to the newest received data.

The Message Broker Statistics view shows the currently selected broker, execution group or message flow data. The Message Brokers Statistics Graph view shows the currently selected rows in the table view. This defaults to the top 3 rows every time you change selection. The table can be sorted by clicking on the column header; rows can be added and removed by pressing CTRL+left click on the row. You can also select several rows by holding down the CTRL key and selecting the rows you wish to graph.

The metrics that are shown in the graph can be changed by clicking **filter** and selecting the metrics you want to see (available metrics depend on what type of broker object is selected). This selection is saved between sessions.

The graph has 3 types of view: linear, logarithmic, and stacked.

NB. Within logarithmic view “0” values are converted to “0.1” due to scaling.

Shell Sharing with Message Broker Tooling v601 and v602

You can shell share MQExplorer and IS02 with the Message Broker Tooling. You must use the purpose built shell sharing package called is02shellshare from the support pac website.

1. Copy the MQExplorer link file **C:/Program Files/IBM/Eclipse SDK30/eclipse/links/com.ibm.mq.explorer.link** to your Message Broker Toolkit links location **C:\Program Files\IBM\MessageBrokersToolkit\6.0\eclipse\links**. This will install the MQExplorer within your Message Broker Toolkit.
2. Download the shell sharing IS02 package.
3. Using an unzip utility that supports large file names, unzip the file to any location, for example, **C:\MBAdminShare** or **/usr/opt/MBAdminShare** This location will be the installation location of the plug-in.
4. From your unzipped location edit the file: **com.ibm.ertools.wmadmin.broker.explorer.link** so that the location points to your unzipped directory. (In this case **path=C:/MBAdminShare** or **path=/usr/opt/MBAdminShare**).
5. Move this file to your Message Broker Toolkit links location, default location is: **C:\Program Files\IBM\MessageBrokersToolkit\6.0\eclipse\links**.

You should now be able to see your Brokers within the MQExplorer within the Message Broker Tooling.

DataPower Security Wizard

Important: To use the DataPower Security Wizard you must have JMS setup on your broker's queue manager. Follow the instructions in the "Setting up JMS for use in IS02" section below.

The DataPower¹ security wizard gives you the facility to completely configure an external DataPower appliance to handle the WS-Security Policy for your HTTP(S) Input nodes within your flow. Once you have completed the wizard your DataPower box will be able to decrypt incoming messages to your flow and encrypt outgoing messages from your flow. No changes are made to your broker flows or broker configuration. The only change will be for your clients to send their messages direct to the DataPower appliance on a Client port you specify.

Configuring your DataPower appliance is performed in 4 steps.

- Select which HTTP(S)Input nodes you wish to configure your security for.
- Create a new DataPower connection profile or edit an existing profile.
- Use or alter the default Policy Sets to specify your encryption and decryption WS- Security parameters.
- Specify which specific Crypto Keys to use from the DataPower box

The DataPower Configuration created on your appliance consists of the following:

An XML Firewall with optionally Back (for HTTPSInput Nodes) and Front (Client) SSL connection.

An XML Firewall Policy consisting of a list of inbound/ request rules and an outbound/ response rule per HTTP Input Node.

Each inbound/ request rule consists of a decryption action with parameters specified from the Policy Set.

Each outbound/ response rule consists of an encryption action with parameters specified from the Policy Set.

¹ This Wizard has been tested using DataPower Firmware level 3.6.0.5 & 3.6.0.16

An example of an XML Firewall Policy created by Broker Explorer

Configure XML FireWall Policy

Select a Policy Name:
FRESH [New] [Delete] [View Log] [View Object Status] [Close]

Rule Name:
WSHOST_HTTP_Input_request

Create rule: Click New, drag action icons onto line. Edit rule: Click on rule, double-click on action

Entry
Rule # 1 Filter Sign Verify Validate Encrypt Decrypt Transform Route AAA Results Advanced Delete

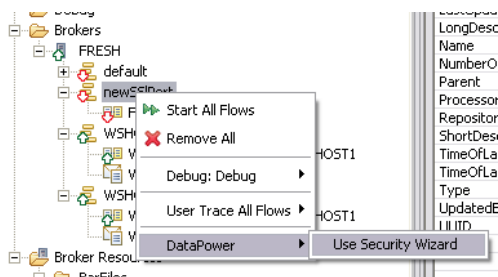
ORIGIN SERVER ← DataPower XI50 → CLIENT

Server to Client Both Directions Client to Server Error Rule Actions: [Apply] [Delete] [New] [Reset]

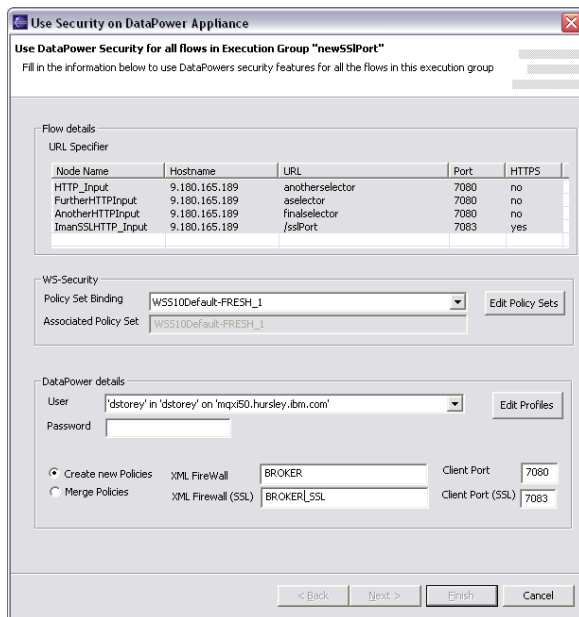
Reorder	Priority	Rule Name	Match Name	Direction	Actions
1	1	WSHOST_HTTP_Input_request	WSHOST_HTTP_Input	Request Rule	[Filter] [Sign] [Verify] [Validate] [Encrypt] [Decrypt] [Transform] [Route] [AAA] [Results] [Advanced]
2	2	WSHOST_HTTP_Input_response	WSHOST_HTTP_Input	Response Rule	[Filter] [Sign] [Verify] [Validate] [Encrypt] [Decrypt] [Transform] [Route] [AAA] [Results] [Advanced]

Starting the wizard

You can access the DataPower wizard by selecting the flow which contains the HTTPInput nodes you wish to enable security handling on or you can select an execution group to enable security handling for all of the HTTPInput nodes in the flows in the execution group.



After starting the wizard all your HTTPInput nodes are collected and you are presented with the main configuration wizard as shown below. All the HTTPInput nodes are selected by default. Only the selected HTTPInput node lines in the Flow Details table are configured in the DataPower appliance.



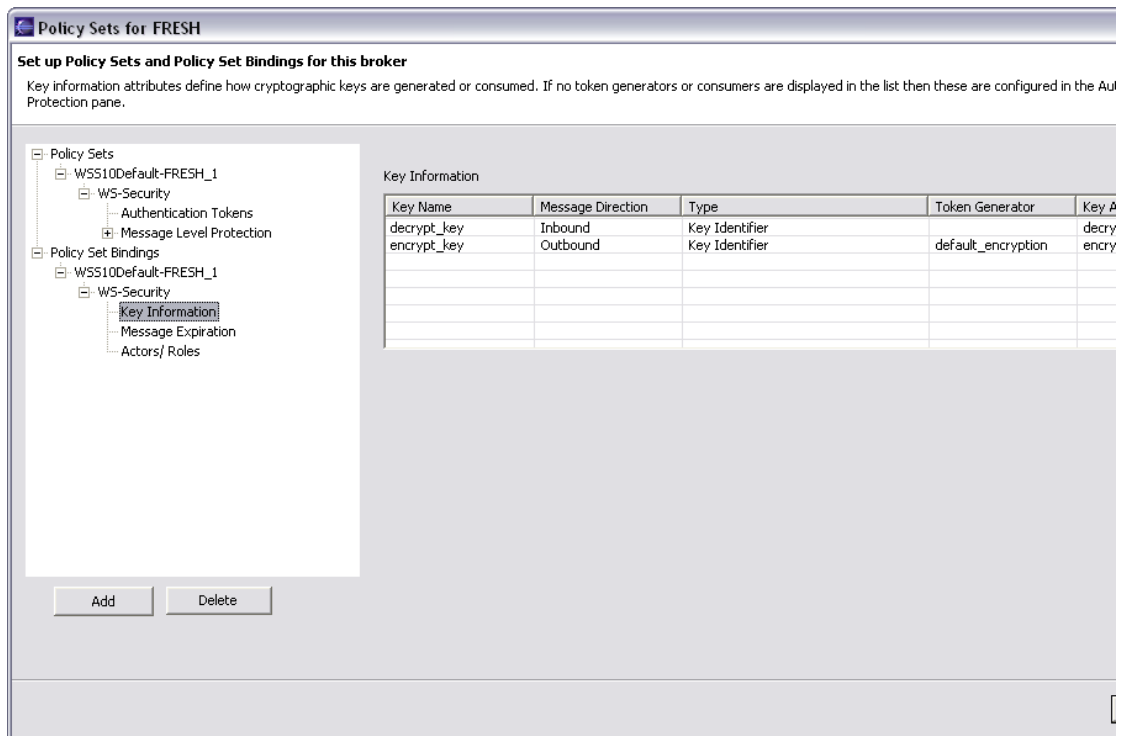
If you select “No Policy Set Bindings” in the WS-Security section then no encryption or decryption nodes are specified in your policy rules. This is good initial test to make sure that your communication channels work before applying the Policy Set Binding for real later.

You need to specify a Policy Set Binding to create your encryption and decryption rules. A default Policy Set Binding and associated Policy Set are provided. This binding supports “KeyIdentifier” encryption and decryption. If you want to change this you need to use the Policy Set Editor.

Policy Set Editor

The Policy Set Editor allows you to alter your Policy Set Binding and associated Policy Set parameters.

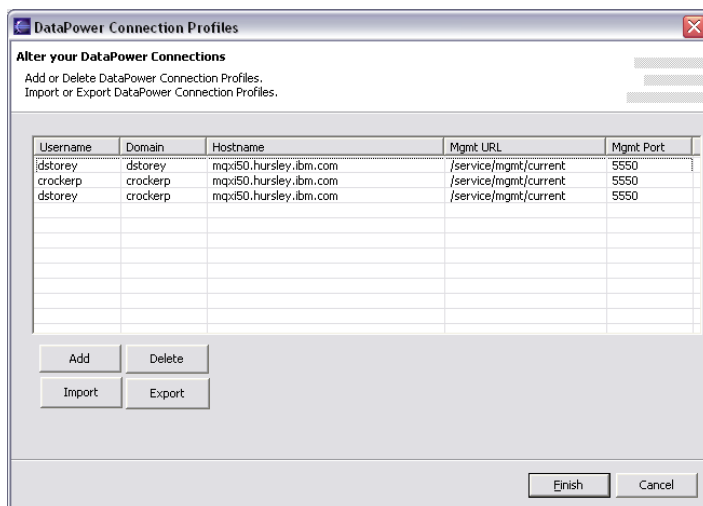
Within the Policy Set Binding your decrypt/ inbound key and encrypt/ outbound key details are specified. This is limited to one encrypt key and one decrypt key for the purpose of this support pac. (This is an early release of the Policy Set standard and so the Policy Set Editor shown here is a cut down version specific to this support pac which allows full message body encryption/ decryption only) Each encryption and decryption action takes further settings from the associated Policy Set and the Policy Set Bindings parameters. You associate the Policy Set and Policy Set Binding by selecting the Policy Set Binding (WSS10-Default-FRESH_1 in the Policy Set Binding below) and altering the combo box.



Policy Sets are stored on a per broker basis within the Broker Explorer support pac. They cannot be imported or exported at present as this standard has yet to be finalized.

Connection Profiles Wizard

After selecting your WS- Security you then need to create a connection to your DataPower appliance.



Within this connection profile wizard you will need to add a valid username, domain and your DataPower appliance ip address. After clicking finish the combo box will be filled in the wizard allowing you to select and use this connection profile. Profiles can also be exported and imported into different Broker Explorer clients.

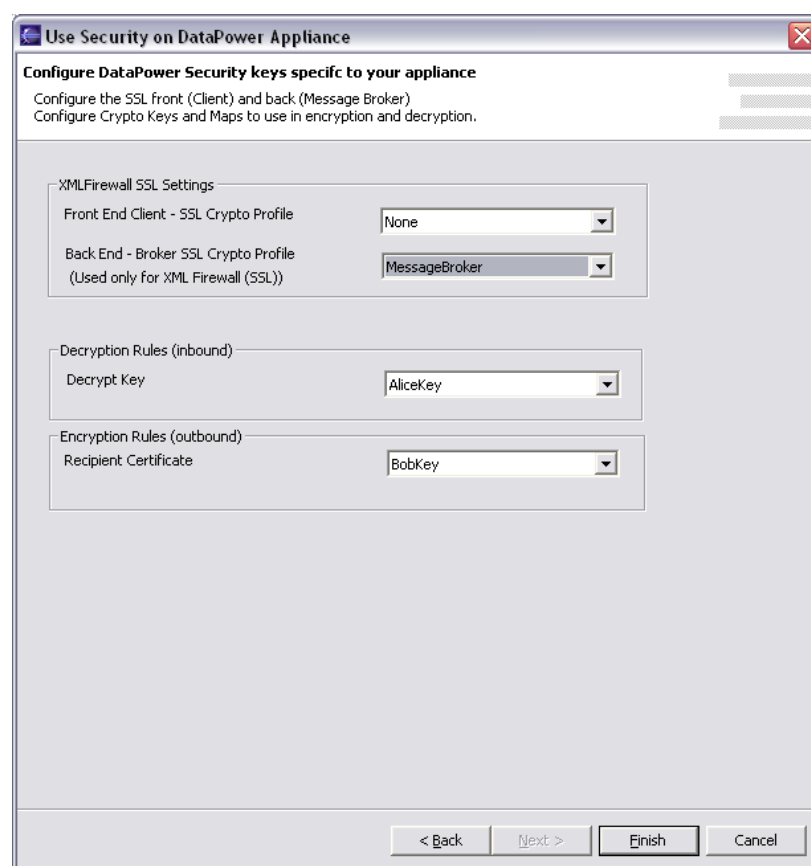
Naming your XML Firewall

On returning to the main wizard you must then select whether or not you want to create a new Policy or merge with an existing Policy. If you attempt to merge with a policy that doesn't exist a new one will be created. Essentially a merge adds request and response rules to your policy. It does not overwrite any preexisting rules. A merge also does not alter your existing firewall settings.

You now can fill in the name of your XML Firewall(s) and the Client ports on which your HTTP clients will connect to your DataPower box.

Crypto Profiles

On clicking Next an attempt will be made to connect to your domain on your DataPower box to retrieve your Crypto Profiles.



The screenshot shows a configuration window titled "Use Security on DataPower Appliance". The window contains the following sections and controls:

- Configure DataPower Security keys specific to your appliance**
Configure the SSL front (Client) and back (Message Broker)
Configure Crypto Keys and Maps to use in encryption and decryption.
- XMLFirewall SSL Settings**
 - Front End Client - SSL Crypto Profile: None
 - Back End - Broker SSL Crypto Profile (Used only for XML Firewall (SSL)): MessageBroker
- Decryption Rules (inbound)**
 - Decrypt Key: AliceKey
- Encryption Rules (outbound)**
 - Recipient Certificate: BobKey

At the bottom of the window are four buttons: "< Back", "Next >", "Finish", and "Cancel".

This step can also be used to check that your connection profile and password is valid.

Final Steps

On clicking Finish the DataPower box will be configured to handle the WS- Security Profile for your HTTPInput nodes.

If any errors during configuration of your DataPower device you can use the Broker Explorer tracing to see the messages going backwards and forwards to the DataPower

appliance and you can also examine the logs on your DataPower device to determine the fault.

Setting up JMS for use with IS02

Firstly your tooling machine must have WebSphere MQ 602 (WebSphere MQ Explorer 602 or above) installed as this tooling has the JMS classes installed.

You must then perform the following steps on your Broker's Queue Manager to enable JMS for that Queue Manager.

1) In the directory in which you unzipped IS02 there is a supplied runmqsc script:
eclipse\plugins\com.ibm.etools.wmadmin.broker.stats_6.0.2.0\setup_jms.mqsc

To enable JMS on your broker's Queue Manager, run the following command (with no line breaks):

```
runmqsc queuemanager <  
C:\MBAAdmin\eclipse\plugins\com.ibm.etools.wmadmin.broker.stats_6.0.2  
.0\setup_jms.mqsc
```

Alternatively you can paste in the commands from the [Appendix A](#).

2) Broker Explorer then uses the SYSTEM.DEF.SVRCONN channel to connect to the broker for all JMS activity. This includes retrieving HTTPInput nodes within the DataPower wizard as well as starting statistics, stopping statistics and receiving the statistics data back from the broker. You must have access to use this channel on the broker queue manager.

This command allows any user to run with the permissions of <broker user> who is a user on your Brokers machine in the mqm and mqbrkrs groups.

```
alter chl(SYSTEM.DEF.SVRCONN) CHLTYPE(SVRCONN) MCAUSER(<broker user>)
```

JMS is now enabled for your Broker's Queue Manager.

Resolutions to problems

Broker Explorer Trace can be set to "Warnings and Errors" to provide additional detailed information on failures without any performance impact. So to identify a problem always use this setting and examine the trace log.

No Brokers directory is displayed after installation

Upgrade WebSphere MQ Explorer to use Eclipse 3.0.2; follow the instructions described in the Prerequisites section.

Deployment problems

For more information on resolving deployment problems, see to the WebSphere Message Broker documentation online.



...deploying to
...in the Navigator

- If a broker gets out of step with the Configuration Manager, reset the communication between them by canceling previous deployments: right-click the broker, then click **Stop > Cancel Deploy**.

See <http://publib.boulder.ibm.com/infocenter/wmbhelp/v6r0m0/index.jsp?topic=/com.ibm.etools.mft.doc/af03940.htm> for more information.

- If a deployment seems to 'hang' check that:
 - The broker's Configuration Manager is running.
 - All channels are started and active between the broker queue manager and the Configuration Manager's queue manager.
 - All listeners are running.

Cancel previous deployments by cancelling the **Deploy Job** and selecting **Stop > Cancel Deploy**.

If all these steps fail to resolve the problem, start and stop the listeners on the Configuration Manager's queue manager and the broker's queue manager.

- If you are deploying a large bar file you might need to increase the maximum message size that can be sent through the WebSphere MQ channels:
 1. In the channel's properties dialog, on the Extended page, set the Max Message Size property to a larger value.
 2. Check that the channels are well named "`<Broker>.TO.CONFIG`" and have a sender-receiver pair for each end of the communication.

You might also need to increase the primary and secondary logs from their default sizes on the queue managers. Stop and restart the queue managers to get the log values to reload.

"Cannot find MQSeries JMS libraries. You must install MQSeries classes for Java Message Service on this machine" and related JMS Errors



This message and related messages state that there is a problem finding or using JMS either on your host machine or your broker machines.

Follow the section “Setting up JMS for use with IS02”

Stats and Accounting gives a JMS error and asks me to set up JMS

JMS is required on the queue manager of each broker that you want to receive data from. Follow the section “Setting up JMS for use with IS02”

If you do not want to see Accounting and Statistics information for other brokers, you can ignore this message (it is displayed once for each broker in the Navigator view that does not have JMS enabled).

No graph view appears for the Broker Statistics

Close the graph view and reopen. This reregisters the view with the table.

Other JMS related errors (While using Accounting and Statistics or the DataPower wizard)

Use the trace settings to determine the exact error. Common errors are caused by permission problems for either the SYSTEM.DEF.SVRCONN channel or not having the rights to connect to the broker’s queue manager. You must connect to the broker using a username that exists on the broker server and is in the mq and broker groups defined on that server.

Connecting to a remote Configuration Manager

Most problems connecting to a remote configuration manager relate to permissions problems on the SYSTEM.BKR.CONFIG channel or access permissions to the Configuration Managers topology.

1) The following PCF command can be used to configure your configuration managers queue manager to allow the Broker Explorer to connect.

```
alter chl(SYSTEM.BKR.CONFIG) CHLTYPE(SVRCONN) MCAUSER(<broker user>)
```

(replace <broker user> with a user in the mqm group on your Broker machine)

2) This command allows your tooling user complete access to the Configuration Manager (in this case CFGMGR) topology

mqsicreateaclentry CFGMGR -u <tooling user> -a -x F -p

(replace <tooling user> with the tooling user on your Broker Explorer machine)

Known Restrictions

Accounting and Statistics

If you add a new broker to the workspace, you must close both accounting and statistics views then reopen them to retrieve statistics data from them. You must also do this after you enable JMS on any broker that did not have it before.

z/OS Accounting and Statistics

Client Attach Feature (CAF) license for z/OS required.

Admin rights required

To administer brokers created in WebSphere Message Broker Version 6.1 with IS02, the user account in which IS02 is running must have administrative privileges. You cannot administer local brokers without administrative privileges.

Uninstallation instructions

To uninstall this SupportPac:

1. Close WebSphere MQ Explorer.
2. Delete the entire directory into which you unzipped **is02.zip**.
3. Restart WebSphere MQ Explorer.
4. Click **Window > Reset Perspective**.

Appendix A: setup jms mqsc

```
***** /
* IBM WebSphere MQ Support for Java Message Service * /
*/
* Sample MQSC source defining JMS Publish/Subscribe queues. * /
* Installation Verification Test - Setup script * /
* * /
* Licensed Materials - Property of IBM * /
* * /
* 5724-H72 5655-L82 5724-L26 * /
* * /
* (c) Copyright IBM Corp. 1999, 2006. All Rights Reserved. * /
* * /
* US Government Users Restricted Rights - Use, duplication or * /
* disclosure restricted by GSA ADP Schedule Contract with IBM Corp.* /
***** /

***** /
* * /
* JMS Publish/Subscribe Administration Queue * /
* * /
***** /
** Create a local queue
   DEFINE QLOCAL('SYSTEM.JMS.ADMIN.QUEUE') REPLACE +
       DESCR('WebSphere MQ - JMS Classes - admin queue') +
* Persistent messages OK
   DEFPSIST(YES) +
* Non-Shareable
   NOSHARE

***** /
* * /
* JMS Publish/Subscribe Subscriber Status Queue * /
* * /
***** /
** Create a local queue
   DEFINE QLOCAL('SYSTEM.JMS.PS.STATUS.QUEUE') REPLACE +
       DESCR('WebSphere MQ - JMS Classes - PS status queue') +
* Persistent messages OK
   DEFPSIST(YES) +
* Shareable
   SHARE DEFSOPT(SHARED)

***** /
* * /
* JMS Publish/Subscribe Report Queue * /
* * /
***** /
** Create a local queue
   DEFINE QLOCAL('SYSTEM.JMS.REPORT.QUEUE') REPLACE +
       DESCR('WebSphere MQ - JMS Classes - Report queue') +
* Persistent messages OK
   DEFPSIST(YES) +
* Shareable
   SHARE DEFSOPT(SHARED)

***** /
* * /
```

```

* JMS Publish/Subscribe Subscribers Model Queue */
* */
* Create model queue used by subscribers to create a permanent */
* queue for subscriptions */
* */
*****/
* General reply queue */
  DEFINE QMODEL('SYSTEM.JMS.MODEL.QUEUE') REPLACE +
    DESCR('Websphere MQ - JMS Classes - Model queue') +
* Queue Definition Type
  DEFTYPE(PERMDYN) +
* Shareable
  SHARE DEFSOPT(_SHARED)

*****/
* */
* JMS Publish/Subscribe Default Non-Durable Shared Queue */
* */
* Create local queue used as the default shared queue by */
* non-durable subscribers */
* */
*****/
** Create a local queue
  DEFINE QLOCAL('SYSTEM.JMS.ND.SUBSCRIBER.QUEUE') REPLACE +
    DESCR('Websphere MQ - JMS Classes - PS ND shared queue') +
* Persistent messages OK
  DEFPSIST(YES) +
* Shareable
  SHARE DEFSOPT(_SHARED) +
* Maximum queue depth
  MAXDEPTH(100000)

*****/
* */
* JMS Publish/Subscribe Default Non-Durable Shared Queue for */
* ConnectionConsumer functionality */
* */
* Create local queue used as the default shared queue by */
* non-durable connection consumers */
* */
*****/
** Create a local queue
  DEFINE QLOCAL('SYSTEM.JMS.ND.CC.SUBSCRIBER.QUEUE') REPLACE +
    DESCR('Websphere MQ - JMS Classes - PS ND CC shared q') +
* Persistent messages OK
  DEFPSIST(YES) +
* Shareable
  SHARE DEFSOPT(_SHARED) +
* Maximum queue depth
  MAXDEPTH(100000)

*****/
* */
* JMS Publish/Subscribe Default Durable Shared Queue */
* */
* Create local queue used as the default shared queue by durable */
* subscribers */
* */
*****/
** Create a local queue

```

```

DEFINE QLOCAL('SYSTEM.JMS.D.SUBSCRIBER.QUEUE') REPLACE +
  DESCR('Websphere MQ - JMS Classes - PS D shared queue') +
* Persistent messages OK
  DEFPSIST(YES) +
* Shareable
  SHARE DEFSOPT(SHARED) +
* Maximum queue depth
  MAXDEPTH(100000)

*****/
*
* JMS Publish/Subscribe Default Durable Shared Queue for */
* ConnectionConsumer functionality */
*
* Create local queue used as the default shared queue by durable */
* connection consumers */
*
*****/
** Create a local queue
  DEFINE QLOCAL('SYSTEM.JMS.D.CC.SUBSCRIBER.QUEUE') REPLACE +
    DESCR('Websphere MQ - JMS Classes - PS D CC shared q') +
* Persistent messages OK
  DEFPSIST(YES) +
* Shareable
  SHARE DEFSOPT(SHARED) +
* Maximum queue depth
  MAXDEPTH(100000)

```