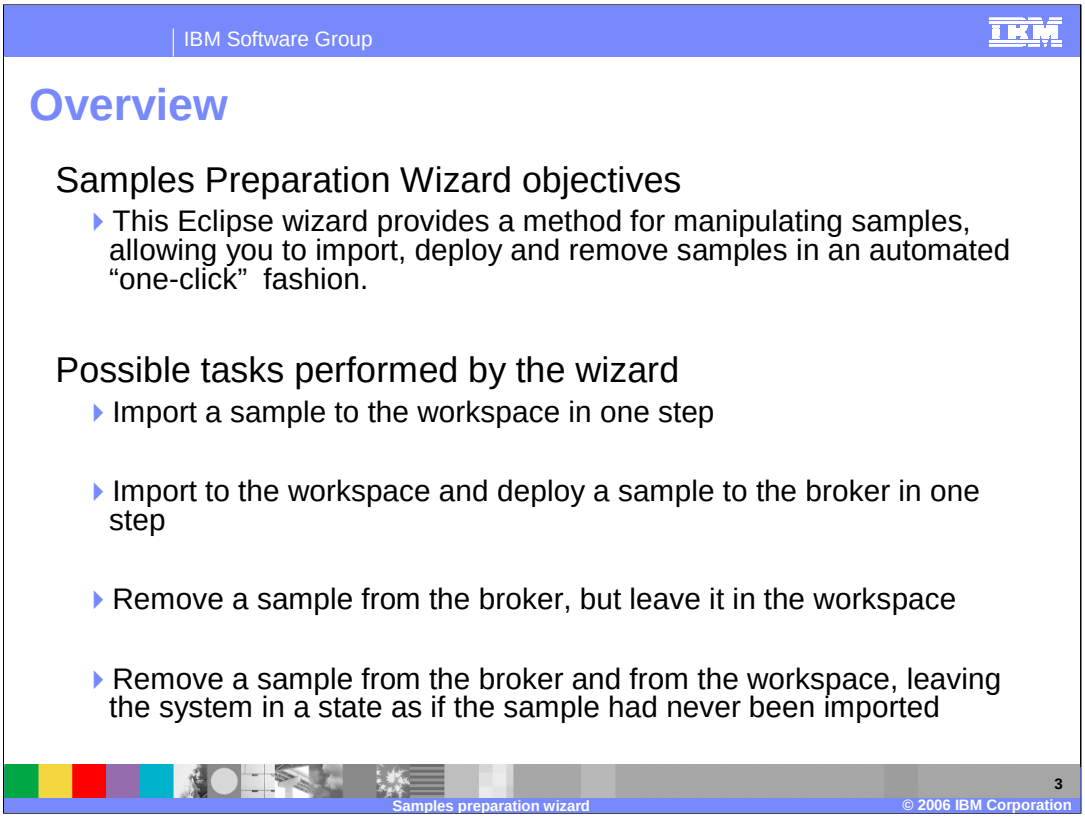
This session discusses the sample applications that are provided with the Message Broker product. There are a significant number of samples, and this presentation has attempted to provide examples of many of the common functions that you are likely to require in your own Broker applications. These applications are intended to be complete in their own right, but also that they can be easily extended to suit your own requirements.

Agenda

- Overview
- Toolkit Launch Points
- Wizard Demonstration
- Wizard Activities
- Debugging

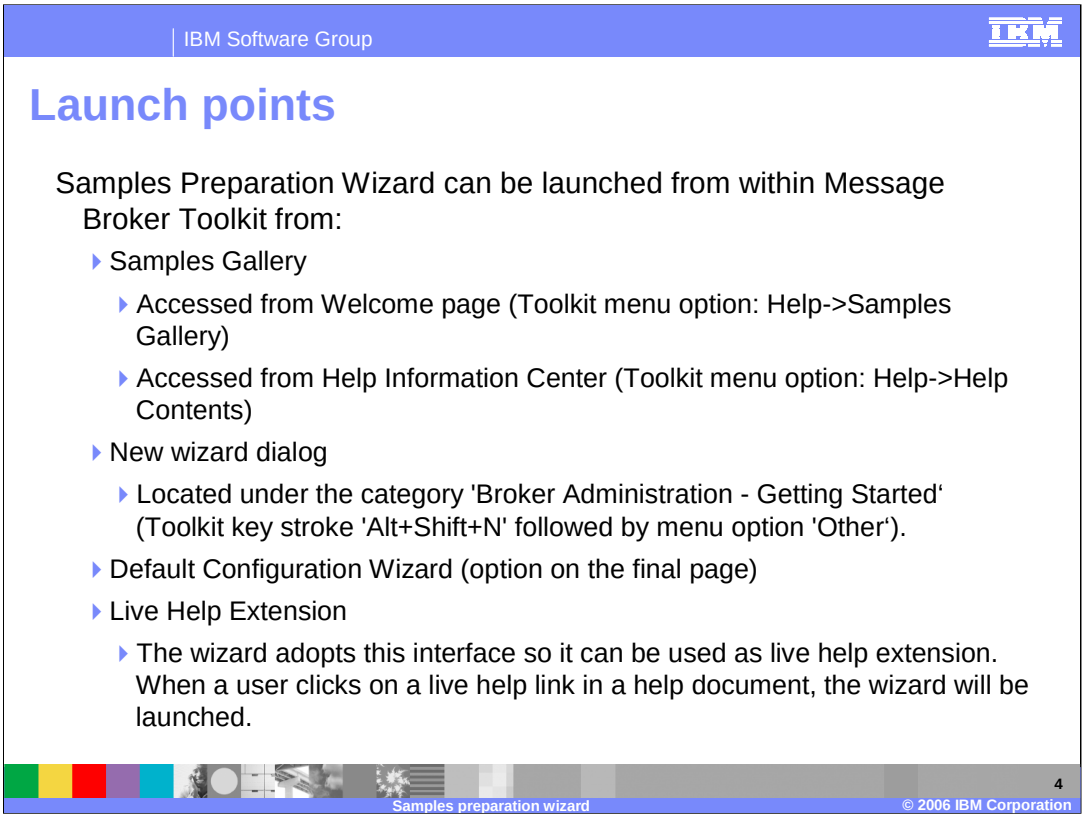
This session will look at the key requirements for these samples, how to launch them, and how to debug them in the event of problems.



The samples are provided through the Message Broker Toolkit, and are intended to be installed in a single “one-click” operation.

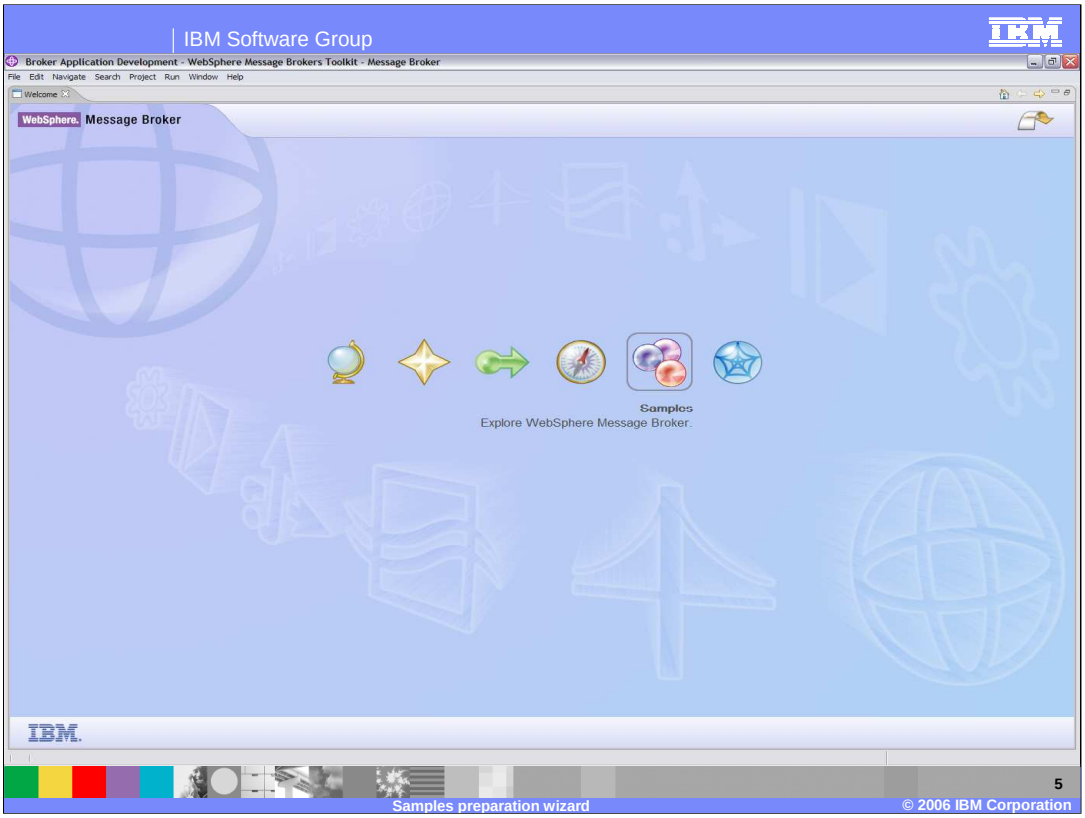
The process can be simply an installation of the message flows and message sets to the Toolkit, or can include a full deployment to the broker created by the Default Configuration Wizard as well. In the latter case, this will include the automated definition of all required MQ queues and databases.

The samples can also be removed from the system. Again, this can just be restricted to the runtime components, or can include removal from the Toolkit workspace. Note that most of the samples create their own runtime execution group. Since all execution groups are started up automatically when the Broker starts, deployment of all samples can result in a large overhead because of a large number of execution groups. This will use a significant amount of memory, so you should plan to use the samples carefully. If you need to have several samples available in the runtime broker, it may be worth considering redeploying the sample bar files to a single execution group. Deployment will be discussed in a later lecture.

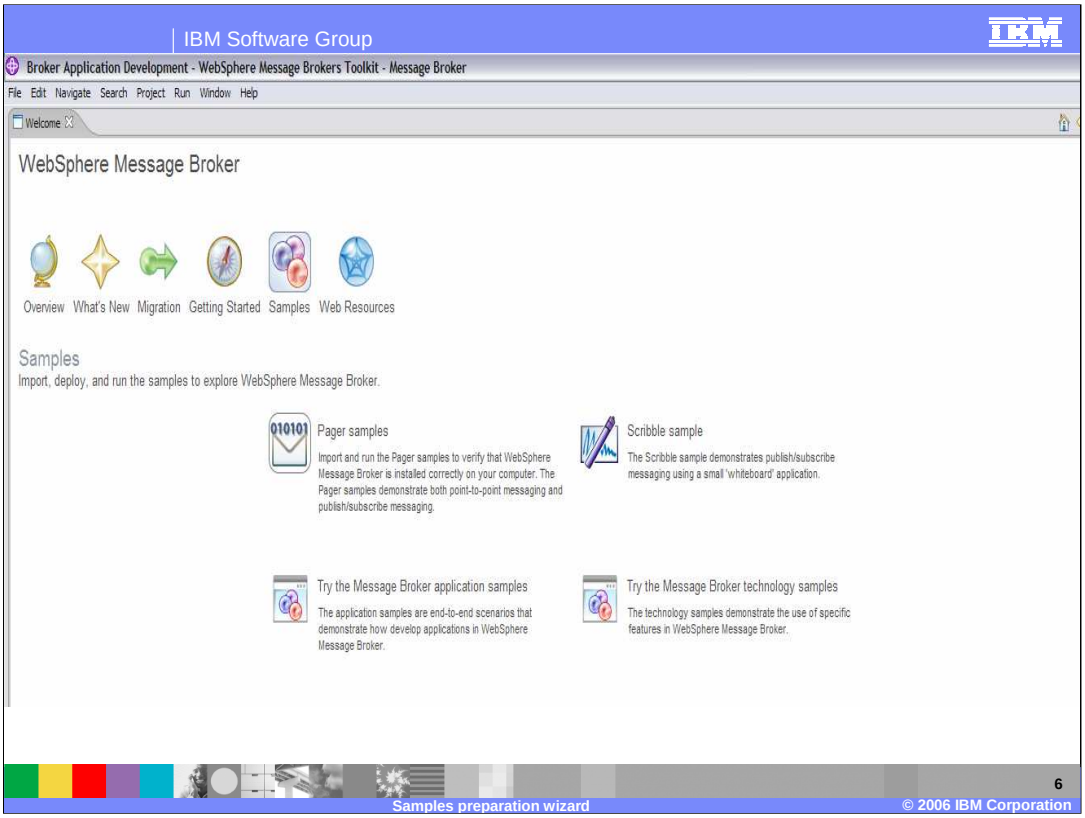


There are a number of places where the installation of the Samples can be launched from. The most common launch point is the “Samples Gallery”, which is opened directly from the Broker Toolkit. Use the Toolkit menu option “Help”, and select “Samples Gallery”.

Alternative ways of opening the Samples are from the Information Center, and from other options in the Toolkit, as shown. Finally, there are a number of places in the Toolkit Help documentation where live links to the samples are provided.

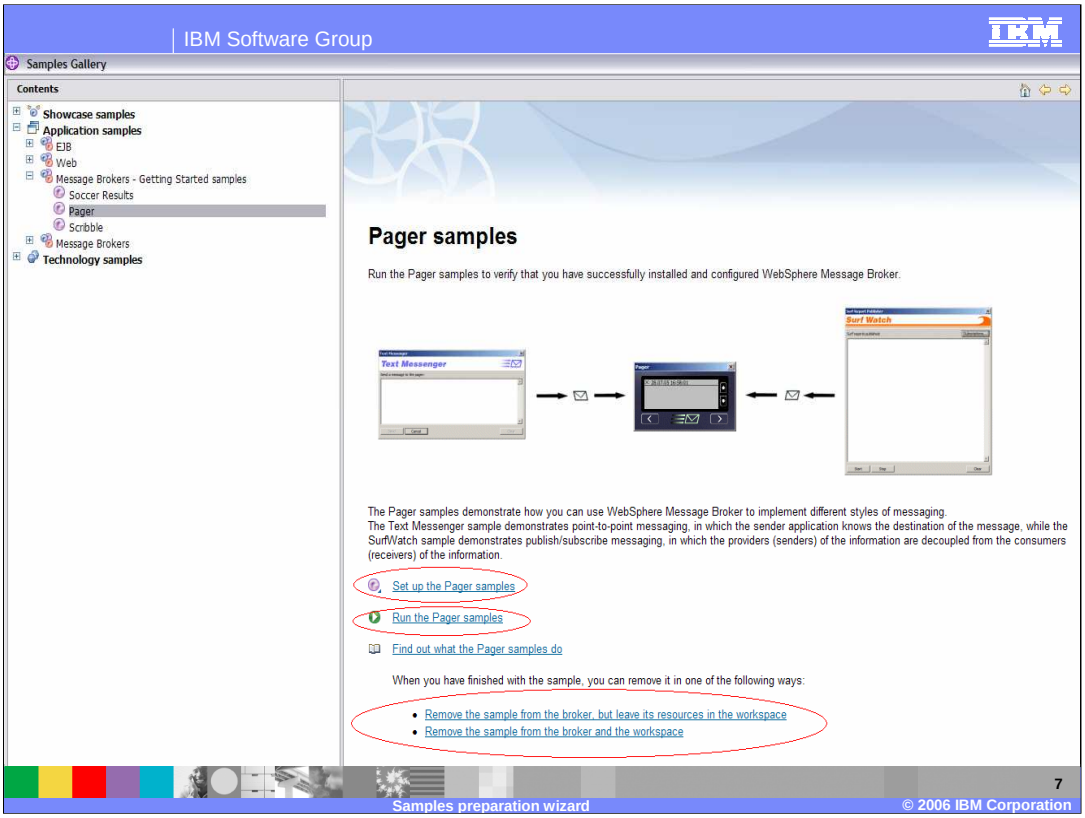


This slide shows the Message Broker Welcome Page, immediately after installation of the Toolkit on a Windows® platform. If you hover your mouse over the various icons, you will see that one of them will take you straight to the Sample Gallery, as shown here.



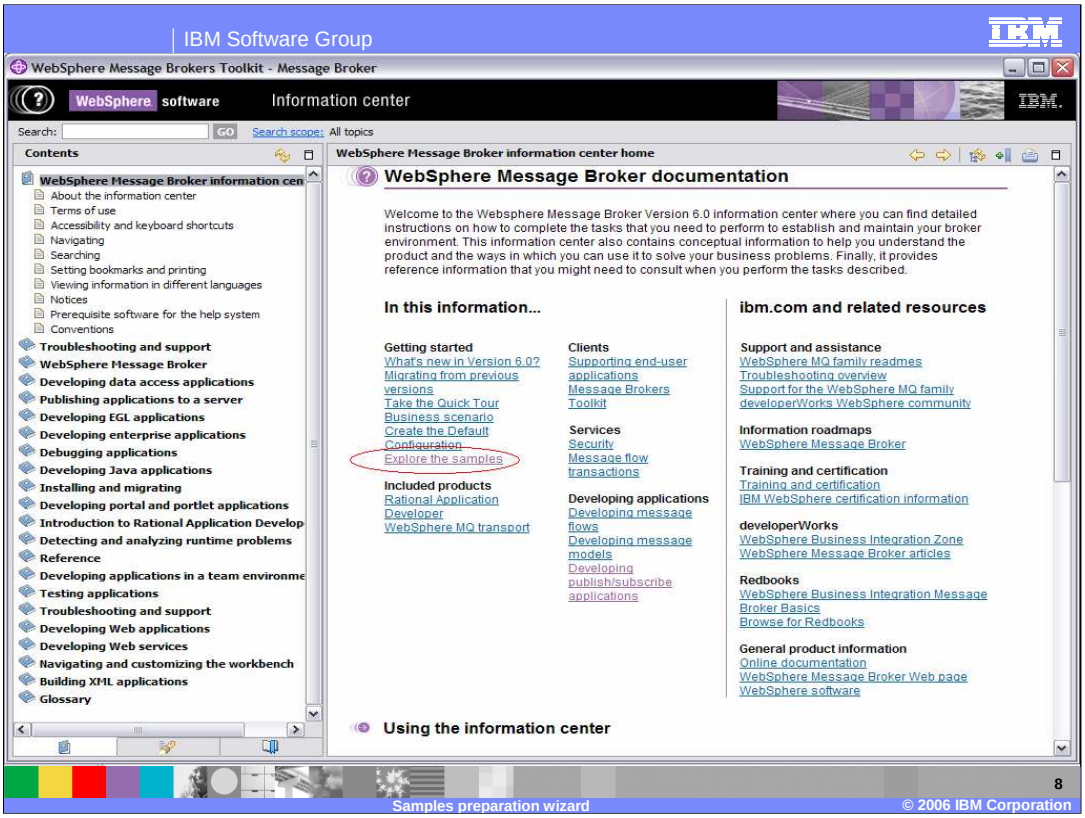
Clicking on the Samples icon will take you to this screen. Here you can install two very simple applications, the Pager and the Scribble applications, which will verify the Broker installation.

The Application and Technology samples contain the more sophisticated types of Broker applications, and are used to illustrate various application techniques.

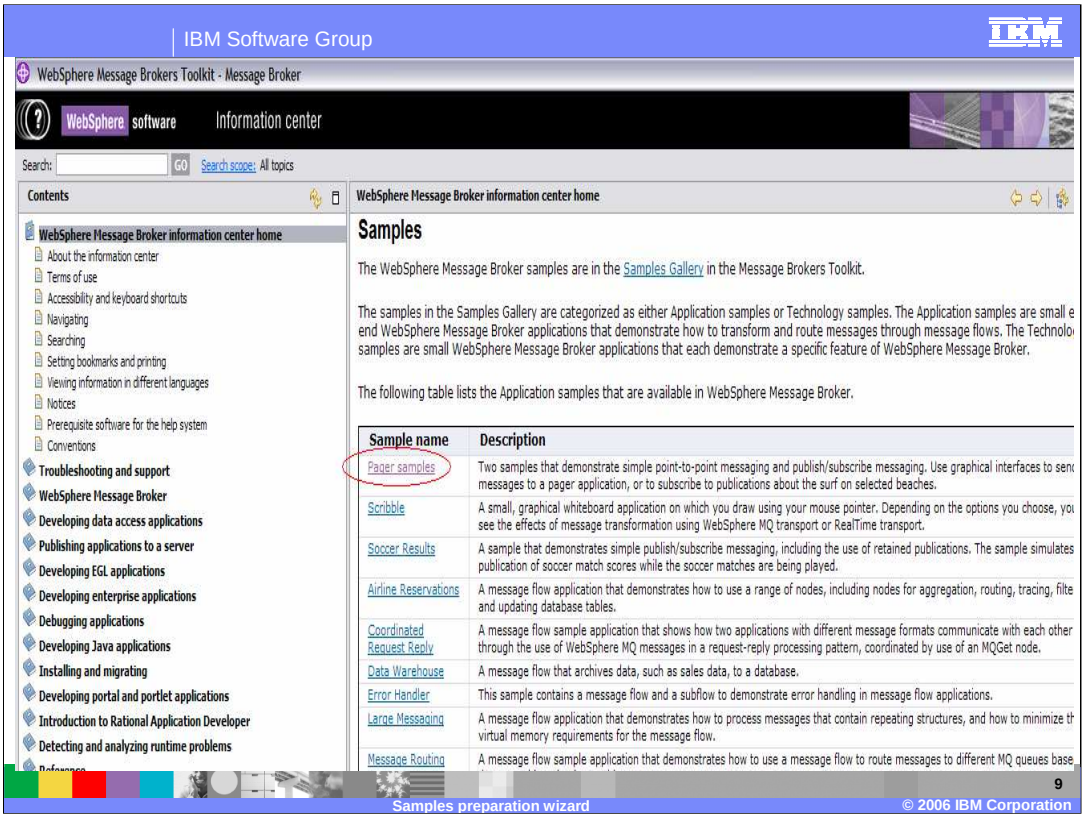


Clicking on “Pager samples” will take you to this screen. Here, you can set up the Pager sample, and run the Pager sample from a script. This sample will serve as an installation verification check for the Message Broker.

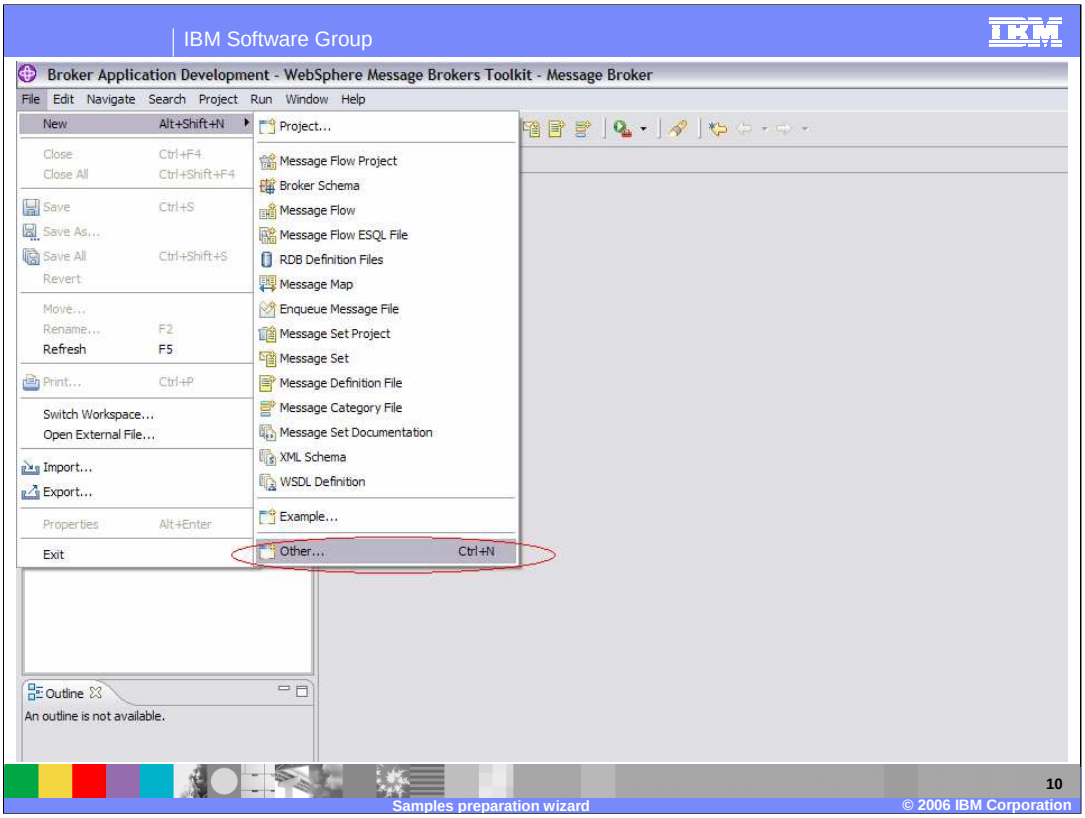
After running this sample, you should remove it from the workspace and the runtime broker.



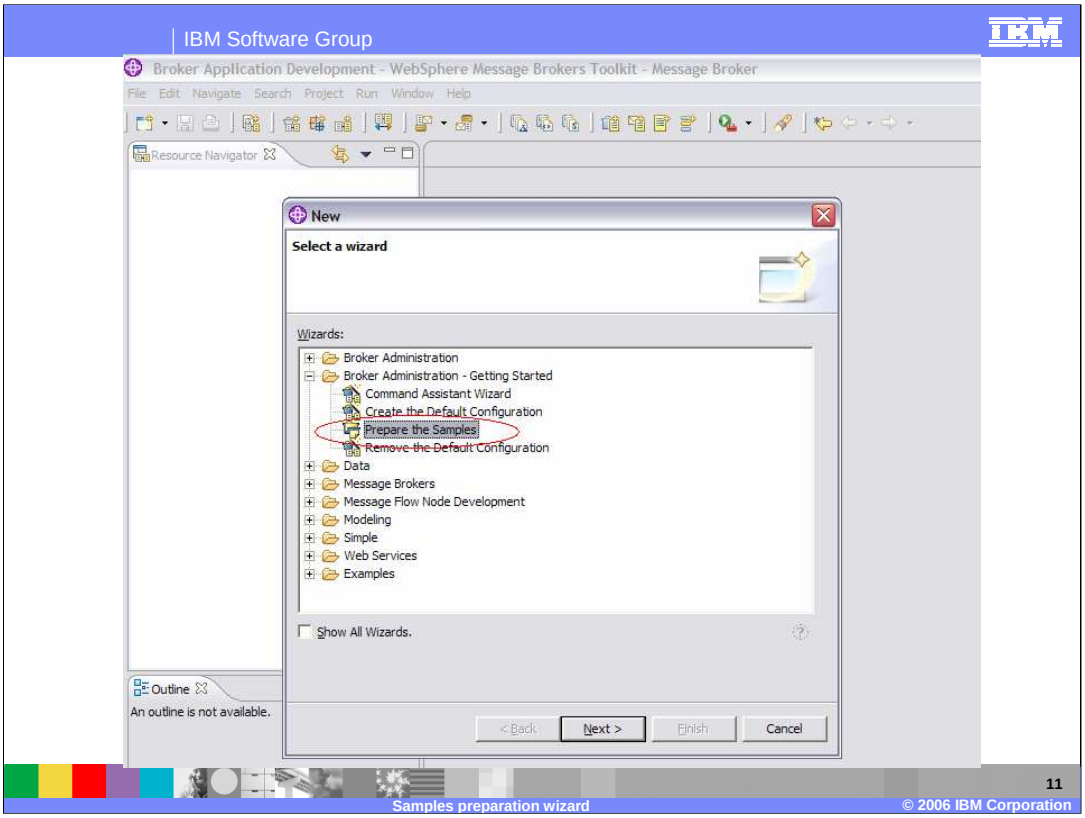
This slide shows the home screen in the Information Center. As mentioned earlier, you will see that you can access the samples from here.



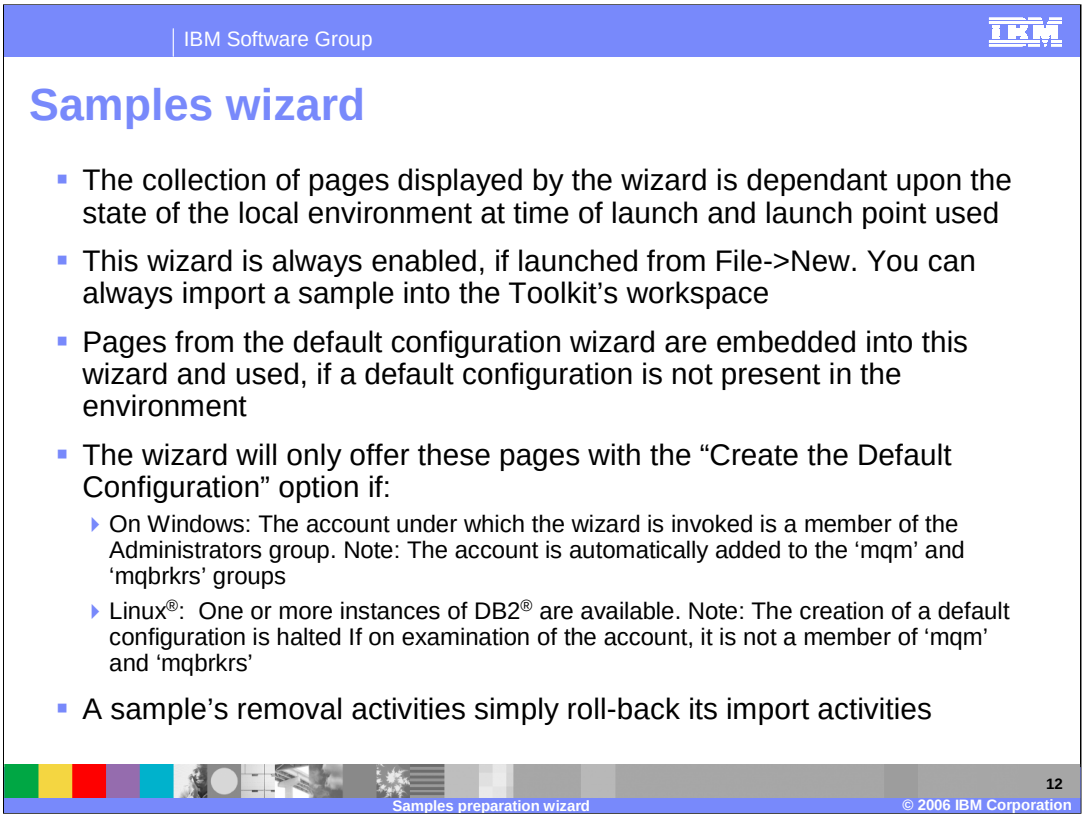
If you click on “Explore the Samples” in the Information Center, you will be taken to this screen. From here, you can get details of each of the samples.



This screen shows how to access the samples from the Broker Toolkit, by selecting “File, New, Other” on the main menu. Selecting “Other” will take you to the wizard shown on the next slide.



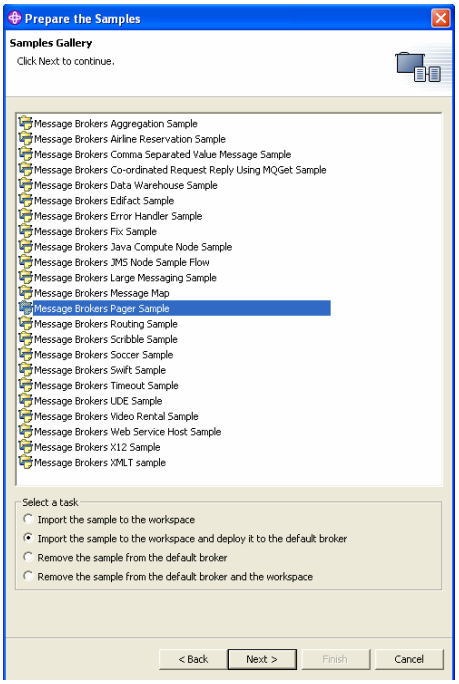
Select “Prepare the Samples” from this wizard, which will take you through a simple sequence of panels where you can select the sample to install, and whether you want to deploy this to the runtime broker.



The operation of the wizard is dependent on the local environment in which it is invoked. It will always be possible to import a sample into the Toolkit workspace. If the sample is already present, then it can be over-written by the installation process.

The Samples require the Default Configuration to be present. Therefore, if this is not present, installation of any particular sample will automatically start the creation of the Default Configuration. If this is required, the user account which invoked this process must have certain privileges. On Windows, it must be a member of the Administrators group, in addition to having the normal MQ and Broker authorizations. On Linux, the process further requires that an instance of DB2 is available.

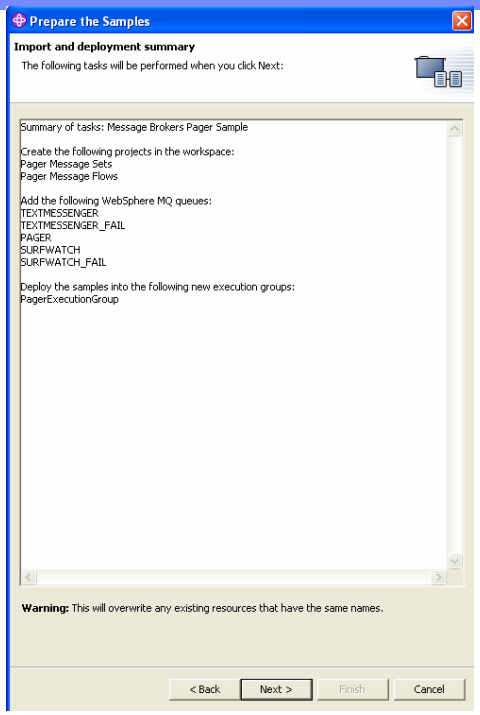
Select the pager sample



As an example, the next few slides show how the Pager Sample would be installed and deployed to the Broker.

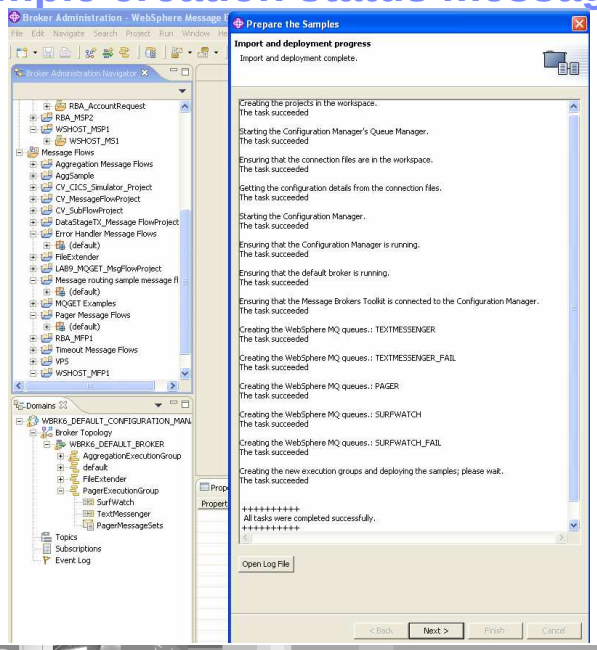
Selecting the Pager Sample, and clicking on “Import and Deploy” is shown on this screen. Now click Next.

Pager sample status page



This screen shows the artifacts that will be created when the Pager Sample is installed and deployed. Here, you see that a number of MQ queues will be created, a message set and a message flow will be imported into the Toolkit workspace, and a broker execution group will be created. The pager sample will be deployed to this execution group.

Pager sample creation status messages

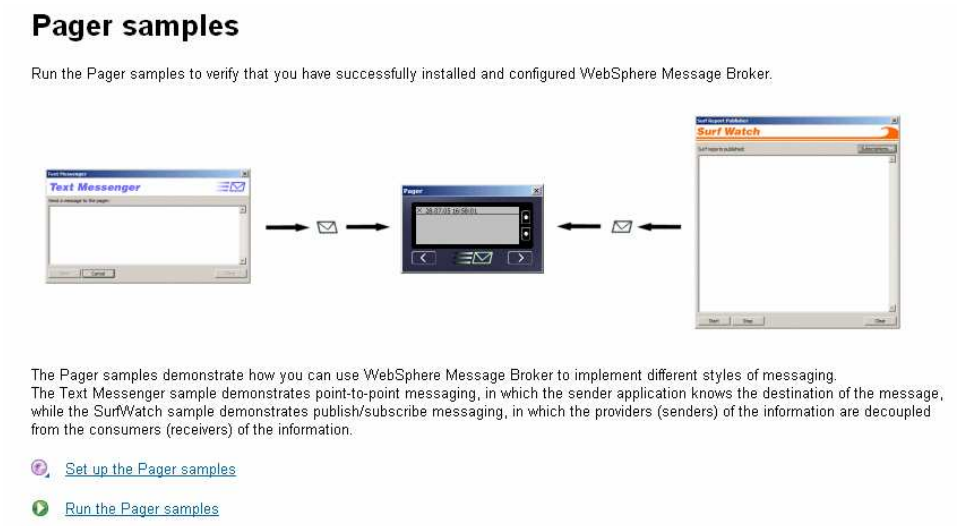


Samples preparation wizard

This screen shows the progress of the Pager Sample creation. This process ends successfully, and shows the start of the Queue Manager, the Configuration Manager, and the Broker.

It shows the Toolkit connecting to the Configuration Manager, and the creation of the new execution group called PagerExecutionGroup. This can be seen in the Domains view, on the bottom left hand side of this screen capture.

Run the pager sample - 1



At the end of the installation process for the Pager Sample, you will be taken to this screen, where you can run the sample. Click on “Run the Pager Sample”, which will take you to the next screen.

Run the pager sample - 2

Running the Pager samples

When you have imported and deployed the Pager samples, you can run the Text Messenger sample, the SurfWatch sample, or both.

For more information, see How to use the applications.

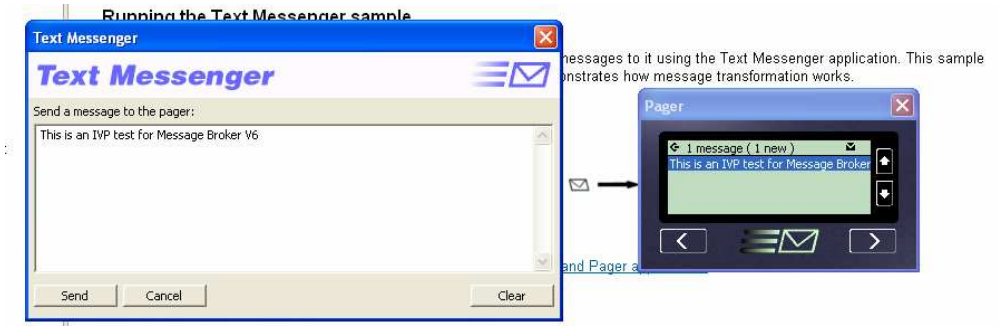
Running the Text Messenger sample

In the Text Messenger sample, launch the Pager application and send messages to it using the Text Messenger application. This sample briefly introduces you to the point-to-point style of messaging, and demonstrates how message transformation works.

Start the Text Messenger and Pager applications

You have two ways to run the Pager sample. The above screen shows the first of these, where a text Messenger application will send a message to a pager device. Click on “Start the Text Messenger application”, which will take you to the next screen.

Run the pager sample - 3



At this point, type some text into the text Messenger window, and click Send. This data will be sent to the Broker, and will then be forwarded to the Pager device, simulated by the Pager application shown above.

If the Broker has been installed correctly, you should see the text appear on the Pager almost immediately.

Debugging – relevant documentation

SamplePreparationWizard.log

- This log file contains detailed trace information concerning each and every activity performed by the Wizard.
- Found in file system under
  - <workspace>\.metadata
- User-specific <workspace> location is outlined in the wizard's summary page, however you can determine this by selecting the toolkit menu option:
  - File->Switch Workspace…

In case of problems with the creation or removals of the samples, all status is recorded in the "SamplePreparationWizard.log" file. This is located in the ".metadata" directory under the active workspace. If you do not know where the workspace directory is, you can get this from the Toolkit by opening the "Switch Workspace" option , as shown on the slide.

Debugging – how to interpret the documentation

Trace output concerning each activity is provided in the following format:

- ++++++++++++++task trace++++++++++++++
  - TIMESTAMP [Day Month Date HH:MM:SS BST YYYY]
  -
  - Activity description as outlined in the summary page
  - Statement indicating success or failure of task
  - Collected output from task >
  - Stdout: [All task output written to standard out]
  - Stderr: [All task output written to standard error]

To determine the reason behind an activity failure, search from the bottom of the log upwards looking for match on activity description, where a statement of failure follows.

The log file will have contents similar to that shown on this slide. Information is added to the end of this file, so you should always start looking for failure information at the end of the file, working backwards until you locate the appropriate error message.

Debugging – additional information - 1

CommonBaseEvents.log

- This log file contains extra trace information not present in the SamplePreparationWizard.log and can be imported and viewed through the Log Navigator View.
- Only present if logging switch on prior to using the wizard.
  - Select toolkit menu option Windows->Preferences->Capabilities->Tester and tick ‘Profiling and Logging’ option. Click ‘OK’ button and close dialog.
  - Select toolkit menu option Windows->Preferences->Profiling and Logging and tick ‘Enable logging’ option.
  - Select toolkit menu option Windows->Preferences->Logging and select Loggers tab, then set Logging level to INFO for logger named: com.ibm.etools.mft.util. Click ‘OK’ button and close dialog.
- Can also be found in user’s <workspace>\.metadata directory.

Finally, there are two additional sources of information for resolving problems with the samples installation. First, the CommonBaseEvents.log file contains additional information. Note that this is only used if logging through the Eclipse Toolkit is activated prior to using the Samples Wizard. To do this, follow the instructions shown on this slide.

Debugging – additional information - 2

To use tracing in the production environment:

- Copy the file: <installLocation>\evtoolkit\eclipse\plugins\com.ibm.etools.mft.eou_6.0.0\.options to <installLocation>. Same folder as the wmbt.exe file.
- Start the Toolkit in debug mode using the –debug option

The .log file may contain:

- Exceptions not written to SamplePreparationWizard.log
- Runtime trace statements used to highlight resource bundle failings associated with the EOU plug-in
- Found in user's <workspace>\.metadata directory

And finally, the ".log" file contains a record of low-level errors that may occur. To invoke this, you will need to start the Message Broker Toolkit in debug mode. To do this, you must invoke the "wmbt.exe" command with the –debug option. This can be done from a Message Broker Command Console, or by changing the properties in the Toolkit icon in a Windows environment.

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