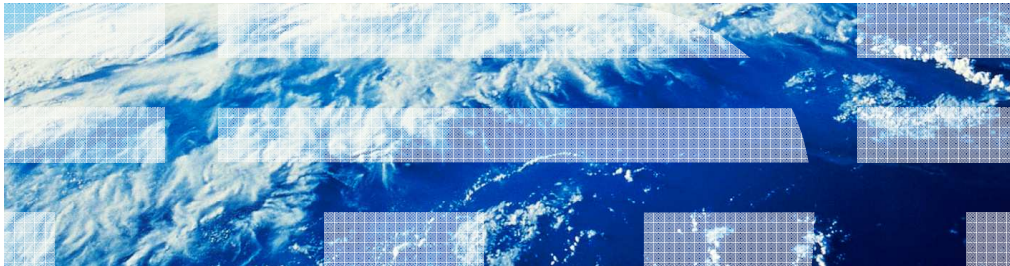


WebSphere Message Broker Version 7

Broker database changes



This session describes the changes that have been made to simplify the operation of WebSphere Message Broker. Previous versions of Message Broker require a relational database to act as the repository for broker artifacts. In Message Broker version 7, this requirement has been removed, and a relational database is no longer used by the broker.

Agenda

- Database removal overview
- Component changes
 - Command changes
 - Migration
 - DB Instance Manager
 - Samples



System Database

Message Broker version 7 has removed the requirement for a broker system database. However, this does not affect any user databases, and all user database access is unchanged from previous versions.

The removal of the system database has several consequences, such as the command interface, migration from previous versions, and the database instance manager.

Overview

- Message Broker version 7 will not use a system database
 - Internally managed store holds broker's configuration
 - Backup and restore commands for disaster recovery

- User database access unaffected
 - Message Broker will only use ODBC/JDBC if you want to access data from within your message flows
 - Message Broker version 7 does not ship DB2

In Message Broker version 7, the broker stores all its topology and application information in a file system managed by the broker itself.

To enable the backup and restore of the broker, two new commands have been provided. These are discussed in detail later in this session.

Access to user database is not affected by this change, and message flows that use either ODBC or JDBC access methods to access a relational database will continue to work unchanged.

An important point to note here is that Message Broker version 7 will not ship a version of DB2. If you are familiar with previous versions of Message Broker, you will know that Message Broker included a restricted version of DB2, specifically for use as the broker system database. Since Message Broker version 7 no longer uses a system database, DB2 is not included in the Message Broker product.

Command changes – data source flags

- Several flags are now ignored in version 7
 - *mqsicreatebroker* -u dataSourceUserId -p dataSourcePassword -n dataSourceName
 - *mqsichangebroker* -p dataSourcePassword
 - *mqsicreatebroker* -3 (z/OS only)

- To set default user ID and password for user databases
 - *mqsisetdbparms* BROKER -n dsn::DSN -u USERID -p PASS
 - *mqsisetdbparms* BROKER -n jdbc::JDBC -u USERID -p PASS

- *mqsisetdbparms* no longer requires a broker restart

Removal of the system database has resulted in changes to some of the broker configuration commands.

For example, the command to create a broker no longer requires the parameters for database user ID or password. These were required if the broker database required different security credentials to the broker itself. Also, the database source name itself is no longer required.

Similarly, the command to change the properties of a broker no longer requires the password to gain access to the database.

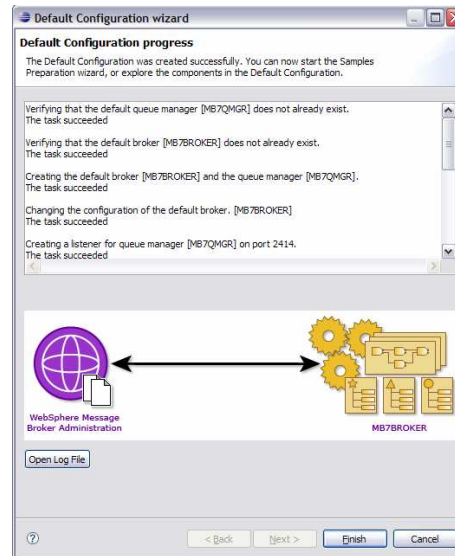
If you are using the broker on z/OS, then the equivalent option for the broker creation on z/OS is also removed.

This means that the command to create a broker is now much simpler than in previous versions. All that is required is the broker name itself, and the name of the associated queue manager. No other parameters are required, except on Windows, where a service user ID and password are still required.

For user databases, the “mqsi-set-db-parms” command has been extended to enable you to set a default user ID and password for user databases. This can be used for both ODBC and JDBC database access methods. When this command has been used to specify database credential information, the changes can be activated by reloading the affected execution groups. A broker restart is no longer required for this change.

Toolkit changes

- In version 7, the Default Configuration Wizard only creates:
 - A queue manager - MB7QMGR
 - A broker - MB7BROKER



Removal of the system database has meant that certain aspects of the Message Broker Toolkit have been simplified. In previous versions, the default configuration wizard created a full broker environment, which included the creation of the underlying system database. In version 7, the wizard now just creates the broker itself, and the underlying queue manager, illustrated on this screen capture.

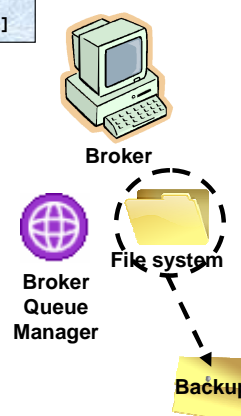
At the same time, Message Broker version 7 has changed the names of the components created by the default configuration. The component names created in version 7 are much shorter than the names used previously, and are shown on this slide.

Backup and restore

- New commands to backup and restore a broker's configuration

```
mqsibackupbroker BROKERNAME -d dirName [-a archiveName]
mqsirestorebroker BROKERNAME -d dirName -a archiveName [-c]
```

- Backs up configuration state from the file system
 - Internal configuration store
 - Registry
 - Artifacts deployed from barfiles (not user-defined nodes)
 - Shared configuration
- Online backups supported
- Used for disaster recovery scenarios only
 - Operational state (from MQ queues) not saved



Two new commands have been introduced in Message Broker version 7, to enable the backup and restore of a broker environment. These commands are intended for disaster recovery, and can be used to replicate the definition of a broker.

The backup command can be run while the broker is running, and will backup the definition of the broker itself, the broker registry, and application artefacts such as message flows. It will also backup the shared configuration such as shared classes. The restore command is then used to re-create the contents of the broker on the new platform. When performing the restore command, the broker name must be the same as the name of the original broker.

Note that operational data, such as messages stored in MQ queues representing the state of a message flow, is not included in the backup of the broker. This command only backs up the definition of the broker and applications, not any in-flight transactions.

Migration

- The *mqsigratecomponents* command migrates brokers from one version to another
- When migrating a broker from version 6.0 / 6.1 to version 7:
 - The command takes data from the version 6.0/6.1 system database and converts it to the version 7.0 format
 - The contents of the system database is unaffected by this change
 - Once migrated, delete the database and database installation if and when appropriate
- If you need to migrate a version 7 broker back to version 6.0 / 6.1:
 - The command will not repopulate the system database
 - If necessary, the system database should be restored from backups

When migrating from earlier versions of Message Broker, the “mqs migrate components” command will use the supplied database security credentials to connect to the broker system database. The information about the broker definition and the deployed applications is read from the broker database, and is written in the new format required by the version 7 broker. This new data is written directly to the broker definition held in the broker’s file system.

This process does not update the old definitions in the relational database. The old database can therefore still be used. If you want to allow the option of migrating back to the old version of Message Broker, then you should retain the old database, until you are confident that it is no longer required.

Database Instance Manager

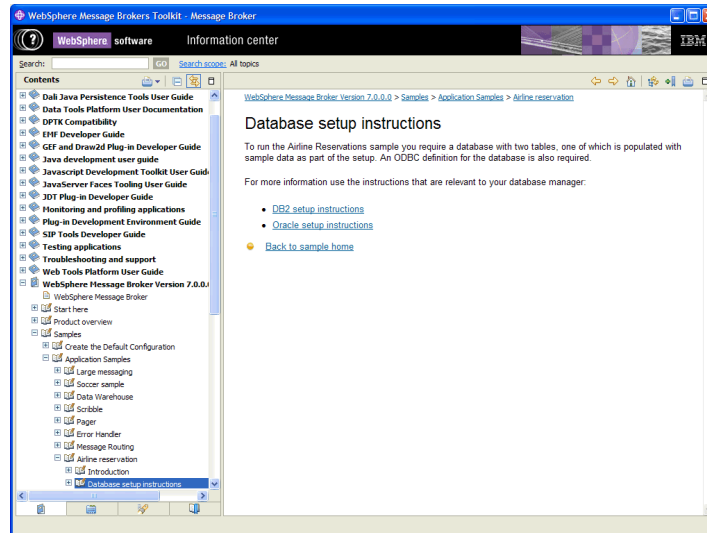
- Message Broker version 6.0 / 6.1 provided the option to use the internal Derby relational database for use as a broker database
- These databases were then managed by a special broker component called the “Database Instance Manager” (DBInstanceMgr)
- Two related commands
 - *mqscreatedb*
 - *mqsdeletedb*
- In version 7 these commands, and the DBInstanceMgr, have been removed

In Message Broker version 6.0 and 6.1, the database instance manager was used to facilitate the use of an internal relational database for development purposes. This component was only used on Windows, and enabled you to select the “Derby” database, avoiding the need to install the full-function DB2 database. The database instance manager include two commands to manage the creation and deletion of databases using this tool.

In version 7, this facility along with the corresponding commands, has been removed.

Changes to sample applications

- Samples which include a user database updated to include improved documentation on setting up database configurations for both Oracle and DB2



Several of the supplied samples make use of DB2 for user data. Because a relational database is no longer a pre-requisite for the broker itself, these samples will not work without specific installation of a relational database. The documentation of these samples has been improved to provide precise details on how to make these applications work with either DB2 or Oracle. However, you are responsible for obtaining and installing your chosen database.

Summary

- WebSphere Message Broker version 7 does not use a system database
 - Internally managed store holds broker's configuration
 - Backup and restore commands for disaster recovery

- User database access unaffected
 - WebSphere Message Broker will only use ODBC/JDBC if you want to access data from within your message flows
 - WebSphere Message Broker Version 7 does not ship with DB2

In summary, Message Broker version 7 does not use a relational database as the broker definitions. As a consequence, DB2 is not shipped as part of the overall package, User database access is unaffected, and all existing applications using either ODBC or JDBC will continue to work unchanged.



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