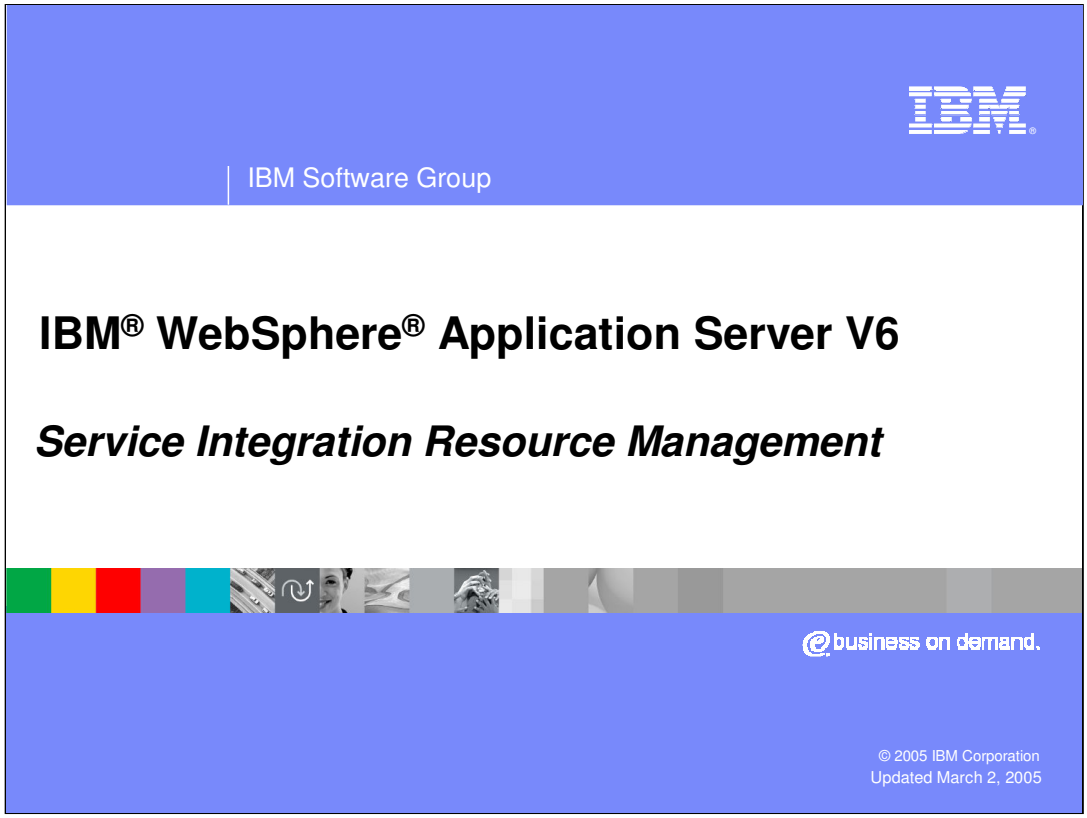
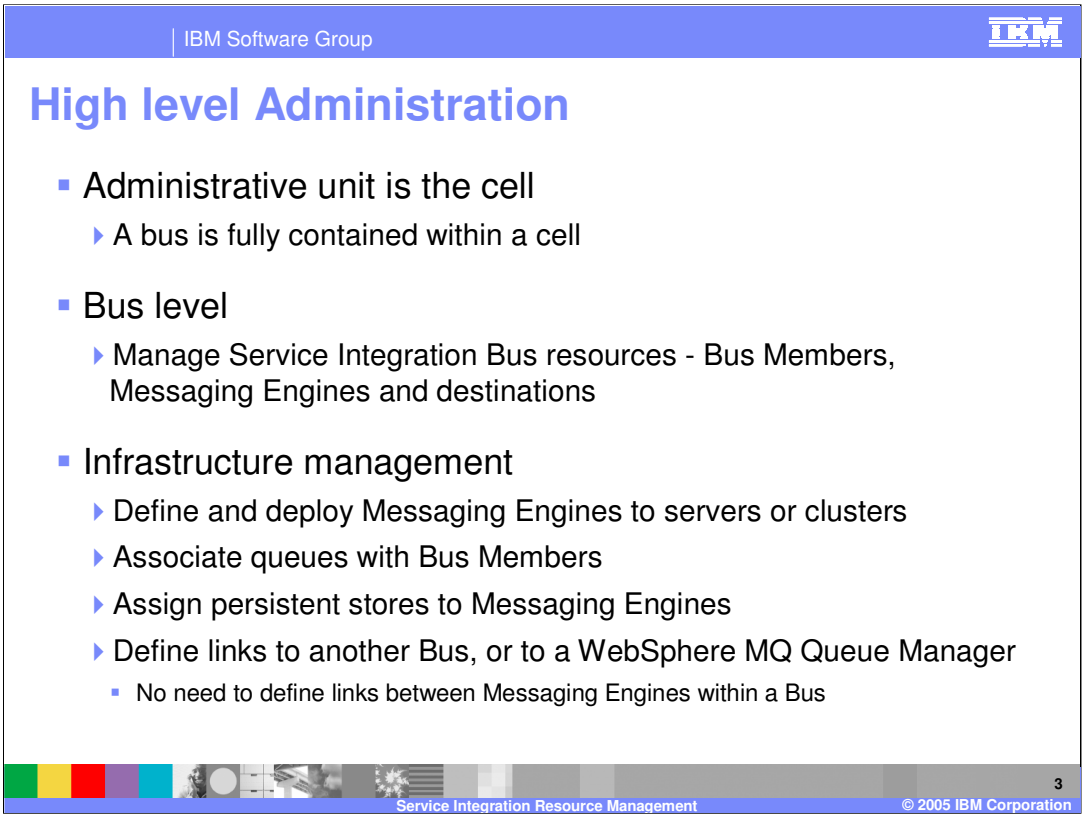


This presentation will focus on managing service integration resources in WebSphere Application Server V6.

Goals

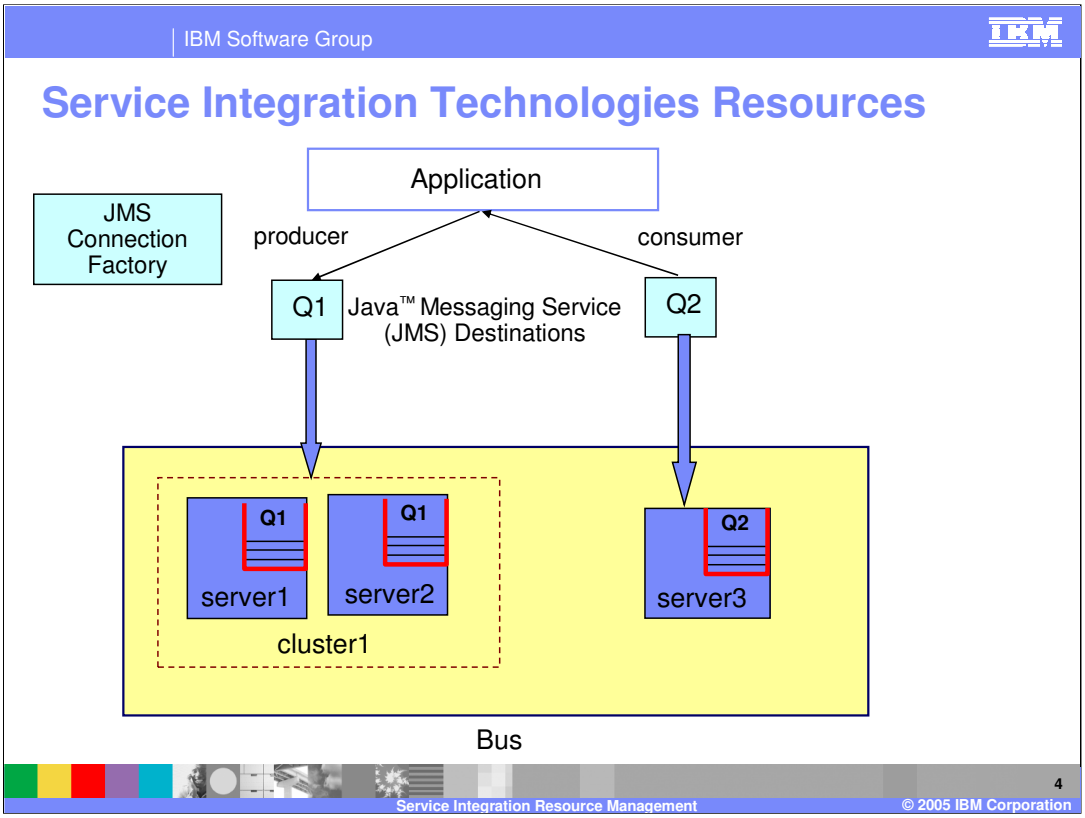
- Provide an overview of creating Service Integration Bus resources using administrative clients
  - Buses
  - Bus Members
  - Messaging Engines
  - Destinations

The goal of this presentation is to give you an overview of creating and managing Service Integration Bus resources in WebSphere Application Server. You will learn how to configure buses, bus members, messaging engines, and destinations.



The administrative unit for managing Service Integration Bus resources is the cell, meaning all resources associated with a single bus will be contained within the same cell.

For any bus you have created, you can add, messaging engines, destinations, and mediations, or add servers or clusters to the bus as bus members. You can also define how many Messaging Engines you want to run, associate those engines with queues, configure database connectivity for storing persistent messages, and even create links to other buses and WebSphere MQ Queue Managers.



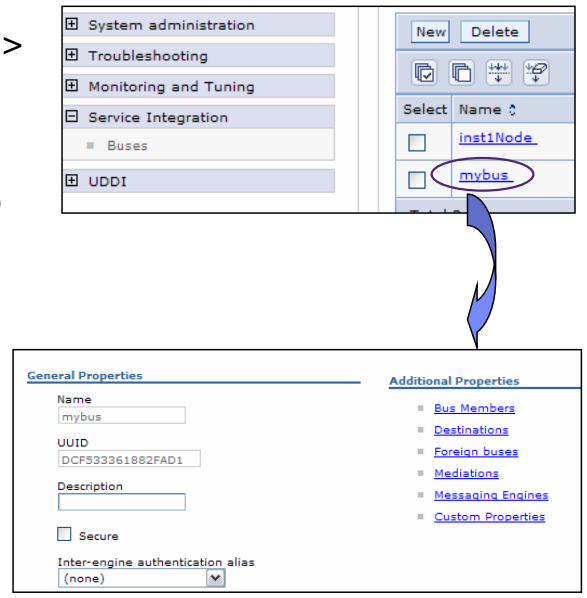
An application that uses point-to-point messaging acts as a producer or consumer of messages with JMS queues.

You can define a *JMS queue*, an administrative object that encapsulates the queue name and other configuration properties that the administrator wants to preserve. This JMS queue exists in the JNDI namespace and acts as a pointer to the underlying Service Integration Bus queue. Such a queue is available to applications for sending or receiving messages. The queue is provided by one cluster (or stand-alone server) on the service integration bus. A queue that is associated with a cluster is partitioned across all messaging engines on the bus that are contained in the cluster.

A *JMS connection factory* is used in application code to create connections to the bus. Applications can use a single connection factory object for creating both queues and topics. Prior to JMS 1.1, different types of connection factories were required for each type of destination.

Configuring Buses

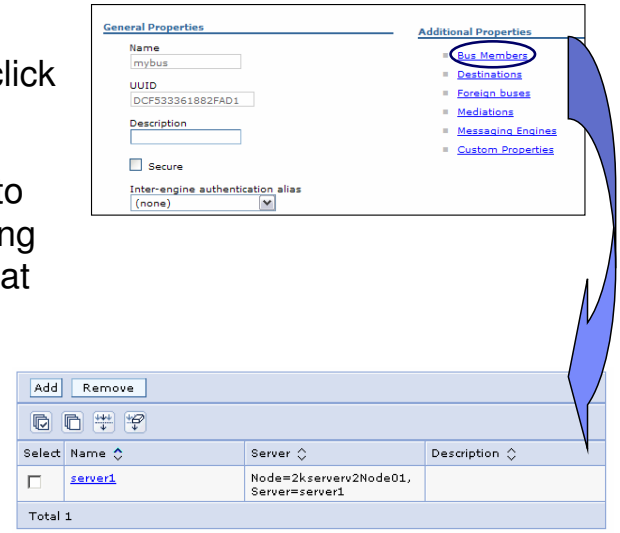
- Click Service Integration > Buses
- You can add or delete Buses, or select a Bus to display or configure its properties



To manage buses, expand Service Integration in the main menu of the Administrative Console and click Buses. From here you can create or delete buses using the buttons provided. Clicking on the name of a bus will allow you to view or configure the resources and properties associated with it.

Configuring Bus Members

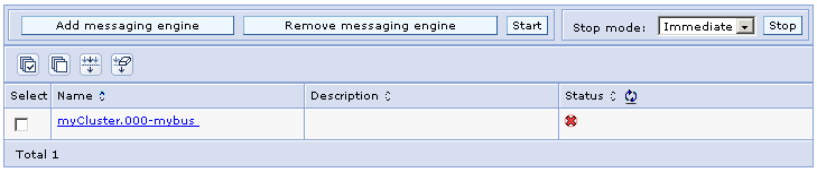
- Under **Additional Properties** for a Bus, click Bus Members
- Bus Member is added to the bus and a messaging engine is created for that cluster (or Stand-alone server)



From the main configuration page for the Bus, clicking on the Bus Members link will allow you to configure Bus Members. Adding a Bus Member associates a cluster (or stand-alone server) with the bus, meaning that the cluster can participate in messaging on that particular bus. When adding a bus member, a messaging engine will be created on the server or cluster that you have associated with the bus.

Configuring Messaging Engines

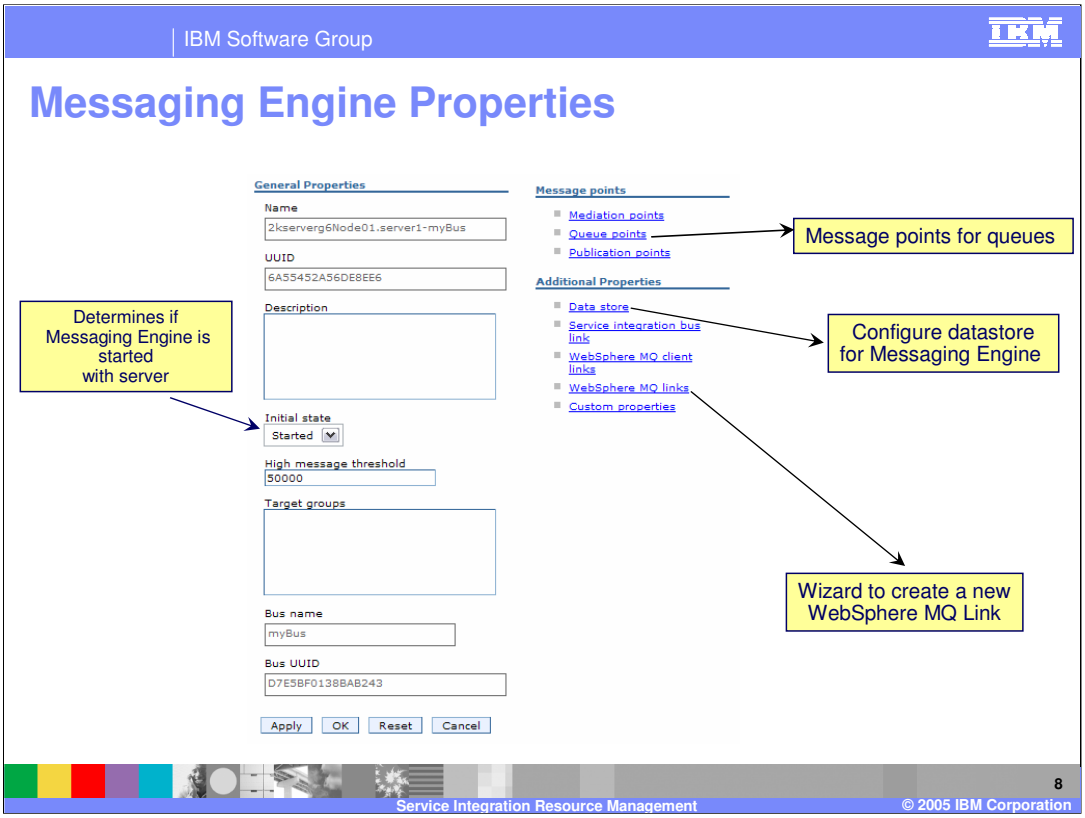
- To configure Messaging Engines
  - Service Integration > Buses > *bus_name* > Bus Members > *bus_member_name*
- Creating a new Messaging Engine in a cluster
  - New Messaging Engines can be created in clusters for scalability reasons
- Removing a Messaging Engine
  - Before deleting:
    - Stop the Messaging Engine
    - Be aware that queues on servers (not clusters) will be lost with deletion



From the same main configuration page for the bus, clicking on the Bus Members link enables you to manage messaging engines that are associated with each Bus Member. Each cluster will have a single messaging engine per bus by default. Availability is handled by the High Availability Manager, so you will not need to create multiple messaging engines to ensure availability. You might, however, want to create more than one messaging engine for increased performance. Use the Add Messaging Engine button on this page to increase your messaging bandwidth by creating additional messaging engines within your cluster.

If you click on “Messaging Engines” directly from the Bus’s main configuration panel, you will be able to start or stop messaging engines, but not add or remove them.

If you want to remove a messaging engine, be sure to first stop the engine. If the messaging engine was associated with a server (not a cluster) and you intend to keep any queues that were associated with it, you will need to recreate the queue, and any messages on that queue will be lost.

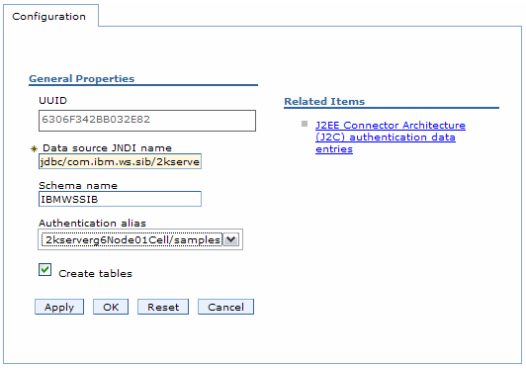


Clicking on the name of a messaging engine will make several properties available to you for editing.

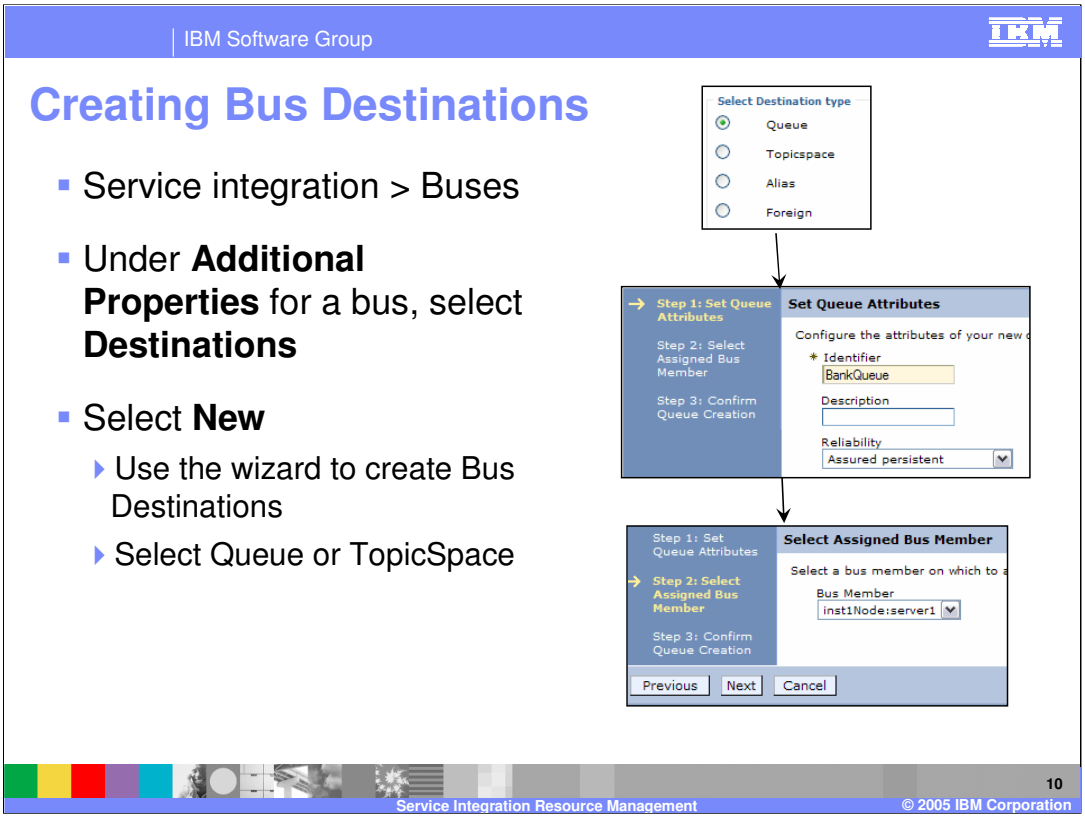
From this panel you can set the initial state of the engine upon server startup, as well as define the data store where the engine will store persistent messages. Additionally, you can create links to other buses, known as gateway links, or links to WebSphere MQ clients or Queue Managers, using the respective links. These links enable your bus to communicate with WebSphere MQ as if your messaging engine was in fact a WebSphere MQ Queue Manager.

Configuring the Data Store

- Create the database
- Create the tables
  - Tables can be created automatically when the Data Store is started
    - "Create tables" checkbox
  - Administrator can create the tables
    - Use the SIBDDLGenerator command to get the DDL
    - sibDDLGenerator -system db2 -version 8.1 -schema SIB -user test > DDL.txt
- Create the data source
- Configure the Data Store
  - Performed when adding a Bus Member
  - To make changes:
    - Buses > *bus_name*> Messaging Engines > *messaging_engine_name* > Data Store



A messaging engine needs connectivity to a relational database in order to store persistent messages. Once you have created the database, you can use this panel to tell the messaging engine how to communicate with it. Create a data source that connects to the database, just as you would for connecting your application code to a database. Then enter the name of the data source on this panel to associate the data source with your messaging engine. Selecting the Create Tables check box will tell the messaging engine to create the necessary tables in the database the first time it connects. If the database user ID you have assigned the data source does not have the necessary authority to create tables, your database administrator can import the tables generated by the SIBDDLGenerator command-line utility.



The Destinations link on the main configuration page for a Bus will lead to a page for creating queues and topicSpaces on the bus. You can also create Aliases and Foreign destinations, which are links to other destinations, from this page.

To create a destination, first choose the type of destination. Then give it a name, and choose a level of reliability from the pop-up menu. Finally, choose the cluster (or stand-alone server) that will host the destination by associating it with a Bus Member.

Summary

- Service Integration Bus resource management is performed using either the Administrative Console or the wsadmin scripting interface
  - Buses
  - Bus Members
  - Messaging Engines
  - Destinations

In summary, this presentation has focused on managing Service Integration Bus resources using the Administrative Console. Buses are the main unit of administration for Service Integration resources. Adding a Bus Member associates a cluster (or stand-alone server) with the Bus. Messaging engines run within a server or a cluster to handle the messaging workload for a particular Bus. Destinations (queues and topicSpaces) are the points of communication on a Bus. In addition to console-based configuration, all of these resources can also be configured using wsadmin.

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