



IBM Software Group

Discovering business application services, featuring IBM
WebSphere Application Server ND V7.0

The Value of WebSphere - Service Integration Bus

An IBM Proof of Technology



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Updated September 28, 2009

Goal: Leverage Benefits of Service Integration Bus

You want to ...

- Quickly configure high availability and scalability for the Service Integration Bus
- Create flexible workload management policies for message-driven beans

IBM Solution

- Administrative wizard for trouble-free configuration of high availability and scalability
- Additional options for message-driven bean connection in a cluster
- Finer control over sending messages to a service integration bus

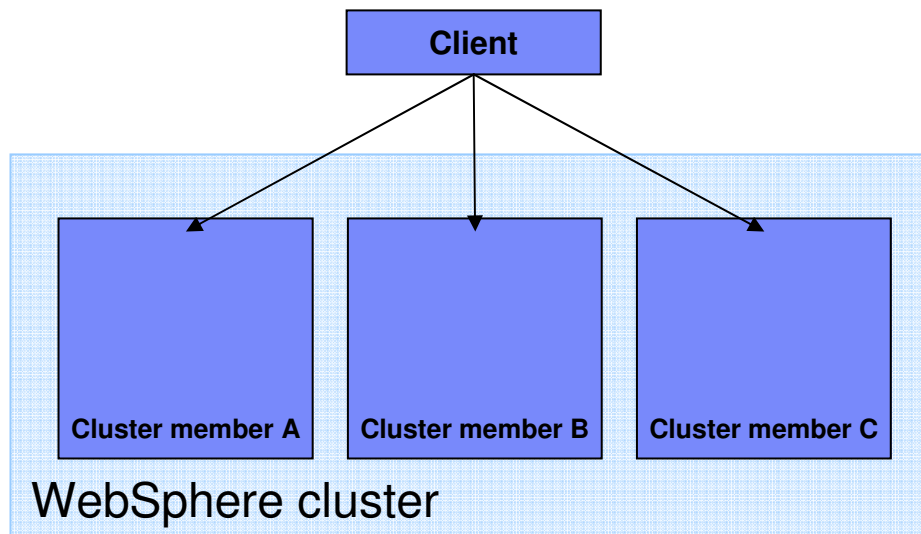
Agenda

- SIB in V6
- MDB Enhancements
- SIB – Cluster and Administrative Enhancements
- New JMS clients
- WebSphere MQ Enhancements

Section

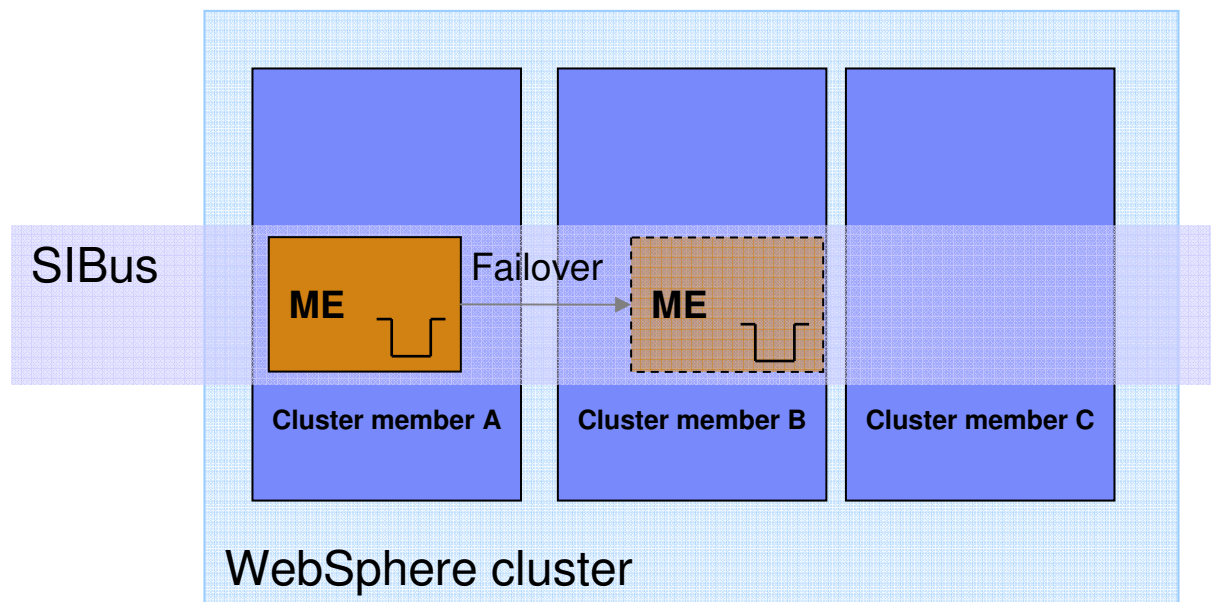
Service integration bus connection behavior in WebSphere Application Server v6.x

WebSphere Cluster



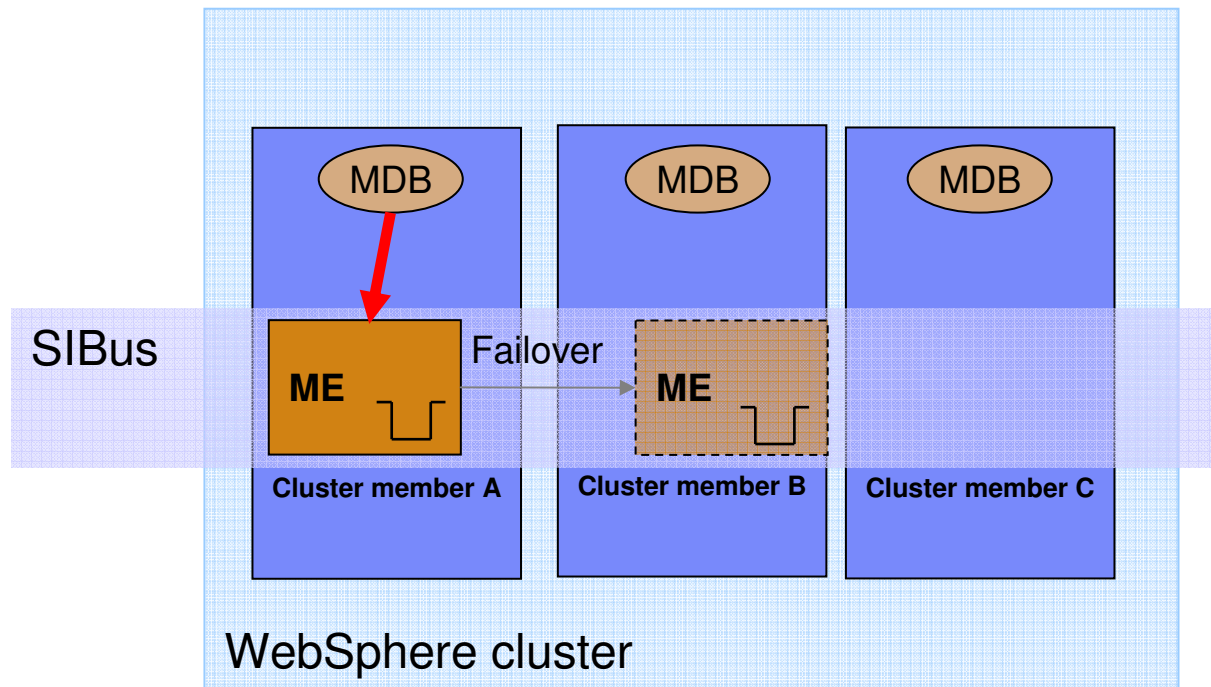
J2EE HA is accomplished by running **several copies** of the same logic.

Service Integration Bus - High Availability



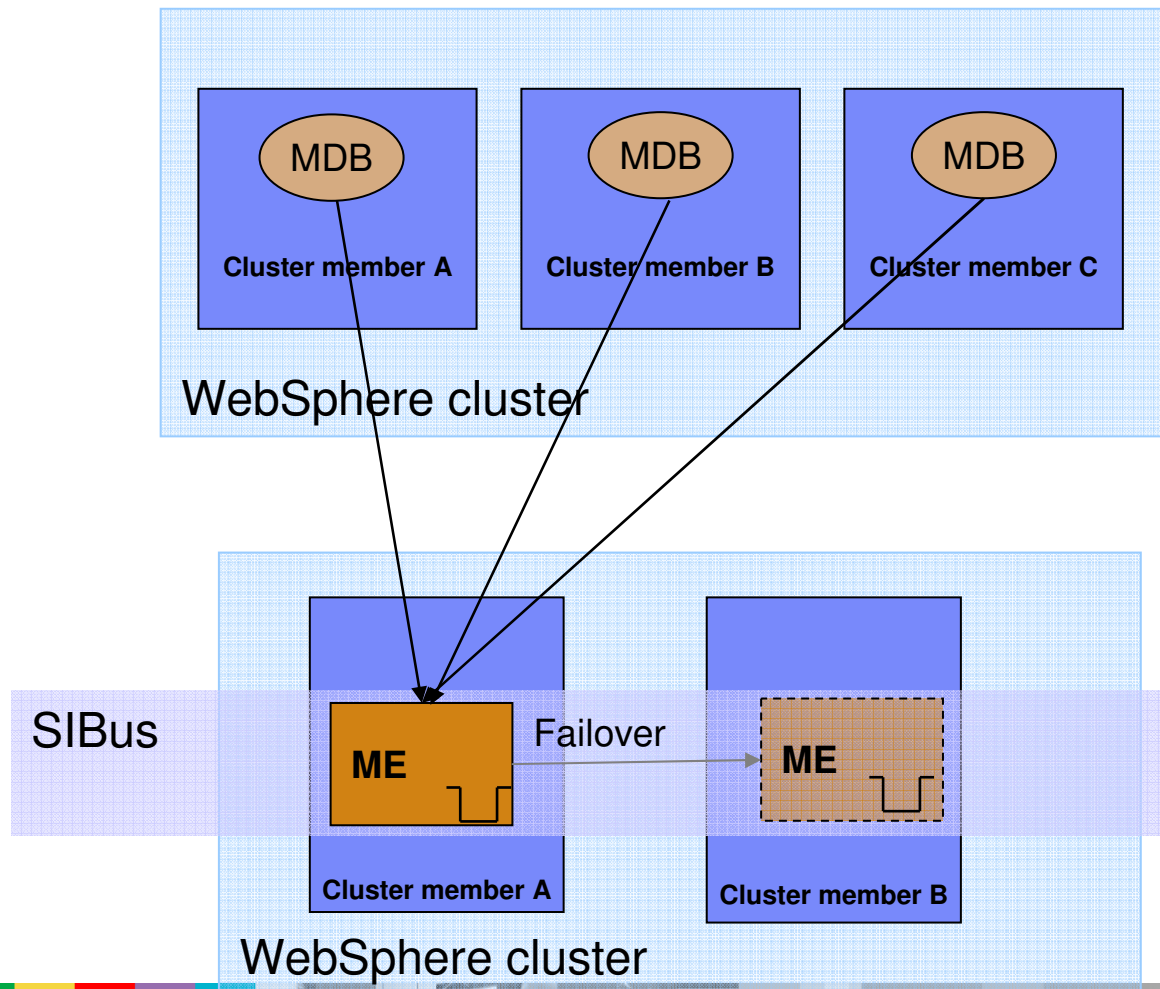
The SIBus Messaging Engine is a **singleton service**. HA is accomplished by failing over the ME service to a different cluster member.

How a message-driven bean connects in a single cluster



Only the MDB in Cluster Member A will receive messages.

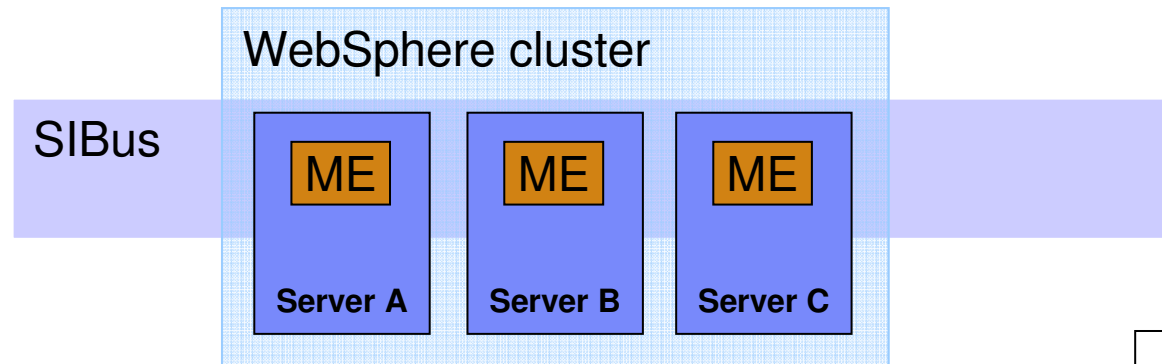
MDB connection behavior: Between a cluster and a separate bus member



With MDBs in separate cluster, all MDBs receive messages.

Service integration bus - Workload sharing or scalability configuration

- Multiple active messaging engines for the bus



Requires administrator to know core groups and match criteria to configure.

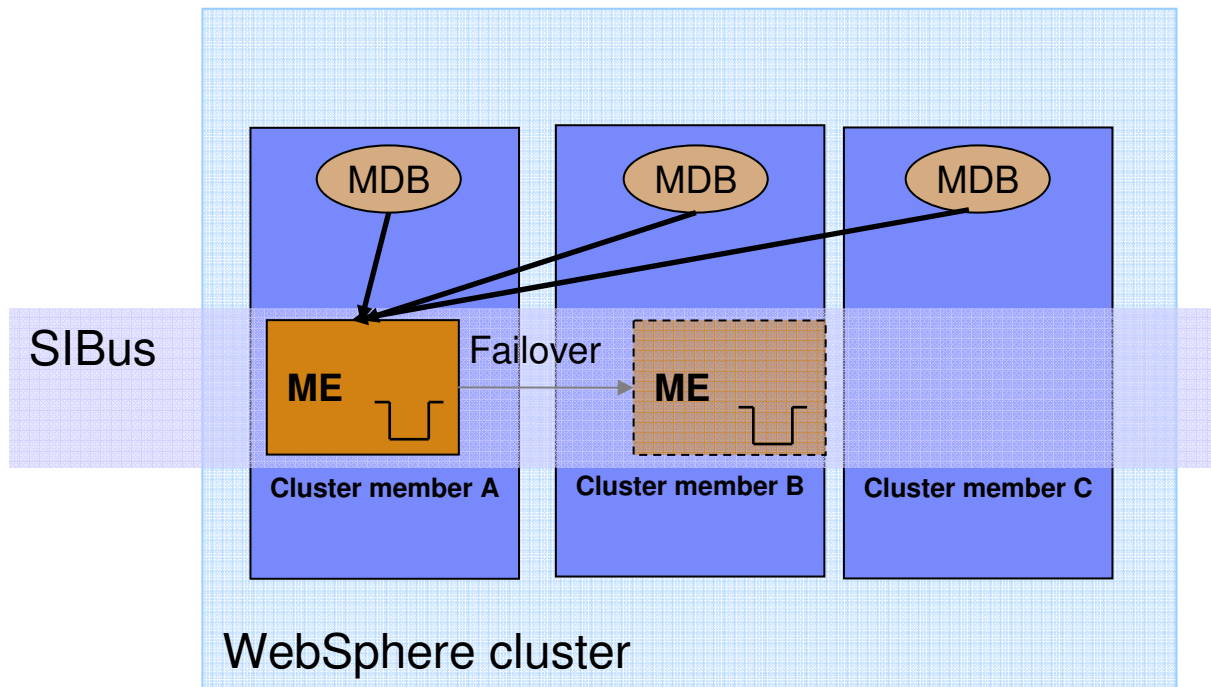
Section

Enhancements for message-driven beans

New MDB consumption options for clusters

- In V6.1 an MDB endpoint is started in each cluster member that is hosting an active messaging engine
- New options in V7:
 - ▶ Start an MDB on each cluster member, whether or not a local messaging engine is present
 - ▶ Message Visibility
 - Allow the message consumer to simultaneously consume from all queue points of a service integration bus queue

SIBus MDB connection behavior: Within a single cluster bus member



New feature -- Always activate MDBs in all servers.

Section

Simplified administration and cluster enhancements in V7

Simplified cluster configuration

- New wizard simplifies configuring messaging engines in clustered environments
- **Messaging engine policy assistance**
 - ▶ Helps determine your needs and configure messaging engines for high availability or scalability
 - ▶ Saves labor and frees the user from needing to know about core groups and policies

Simplified cluster configuration

Messaging engine policy assistance settings

Select a predefined messaging engine policy to apply to the selected cluster when it is added as a bus member.

Step 1: Select server, cluster or WebSphere MQ server

→ **Step 1.1: Messaging engine policy assistance settings**

(The next step of the wizard depends on decisions made in the current step)

Step 2: Summary

Messaging engine policy assistance settings

Enabling messaging engine policy assistance enables a predefined or custom policy to be applied to the selected server cluster. Tooling will be enabled to assist in maintaining the policy if the server cluster changes in size. Restrictions will be placed on the changes that can be made to associated core group policies.

Enable messaging engine policy assistance?

Select	Policy type	Is further configuration required?
<input checked="" type="radio"/>	High availability	No
<input type="radio"/>	Scalability	No
<input type="radio"/>	Scalability with high availability	No
<input type="radio"/>	Custom	Advice is not available for a custom configuration.

Improved administrative control of MDBs

- Message-Driven Beans can be started and stopped independently
 - ▶ Can be triggered manually or when a message failure threshold is reached
 - ▶ Helps prevent failures of dependent resources from causing broader application failures





Enterprise Applications ?



Enterprise Applications > TradeProcessorApplication > Manage message endpoints

Use this page to manage situations where messaging providers fail to deliver messages to their intended destinations. For example, a provider might fail to deliver messages to a message endpoint when its underlying Message Driven Bean attempts to commit transactions against a database server that is not responding. To temporarily deactivate a message endpoint from handling messages, select the appropriate endpoint and click Pause. After the message endpoint is inactive, repair the underlying cause of the message delivery failures. To reactivate the message endpoint, select the appropriate endpoint and click Resume. To view the configuration binding for the underlying endpoint message Driven Bean and Activation Specification, click the name of the message endpoint.

⊕ Preferences

Pause Resume

Select	Name (Activation Specification) ⌵	Running object scope ⌵	Status ⌵
You can administer the following resources:			
<input type="checkbox"/>	TPMDB_J2CMessageEndpoint (jms/tradeAS)	Cell:thinkCell01 Node:thinkNode02 Server:server01	
<input type="checkbox"/>	TPMDB_J2CMessageEndpoint (jms/tradeAS)	Cell:thinkCell01 Node:thinkNode02 Server:server02	

Improved administrative control of MDBs

- Visualization of relationships between MDBs and service integration bus destinations available in the admin console

Buses [Buses](#) > [msgBus](#) > [Destinations](#) > [TradeQueueDestination](#)
> **Application resources for this destination**

This pane provides an expandable tree view of all the applications and messaging resources that reference the current destination, both directly and indirectly. As many of the references as possible are resolved to links to the associated configuration panel for the referenced object.

Local Topology

Destination

- TradeQueueDestination
 - JMS destinations
 - [Trade Processor Queue](#)
 - JMS activation specification
 - [Trade Processor Activation Spec](#)
 - [Trade Processor Activation Spec](#)
 - Enterprise JavaBeans
 - Enterprise JavaBeans
 - TPMDB
 - Modules
 - [TPEJB](#)
 - Application
 - [TradeProcessorApplication](#)

Section

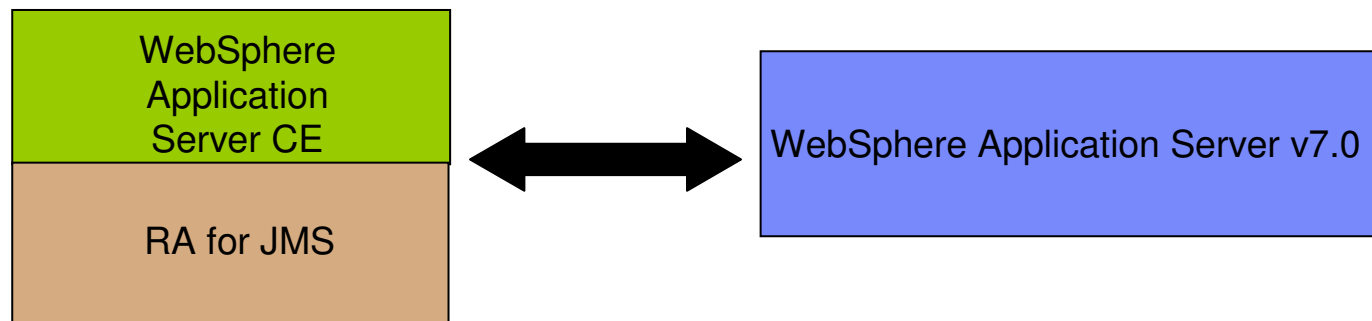
New JMS clients

Thin JMS client

- V7 includes a new thin client JAR to enable client access from Java™ SE clients
 - ▶ Requires Java SE 5 at a minimum
 - ▶ Provides outbound communication from clients and 1-phase commit support
 - ▶ Supports the Open Service Gateway Initiative Service Platform as instantiated by the Eclipse Rich Client Platform (RCP) level 3.2
- `com.ibm.ws.sib.client.thin.jms_7.0.0.jar`
 - ▶ Found in the 'runtimes' folder alongside the web services and administrative thin client JARs
- Client can now coexist with EJB, JAX-WS and JAX-RPC clients

JMS Resource adapter for other application servers

- V7 provides a JMS JCA (Java EE Connector Architecture) resource adapter (RAR file) for use with third-party application servers
 - ▶ WebSphere Application Server Community Edition (CE)
 - ▶ JBoss Application Server 4.0.5 and later
- Enables first-class communication from with Service Integration Bus resources
 - ▶ Inbound and outbound communications
 - ▶ 2-phase commit support



Section

WebSphere MQ Enhancements

Enhancements for WebSphere MQ

- WebSphere Application Server V7 contains a JCA (Java EE Connector Architecture) RA (Resource Adapter) for WMQ
- Enables message delivery to Message-Driven Beans using activation specifications, the standard Java EE delivery mechanism
- Listener port usage is deprecated
 - ▶ Listener ports can be converted to activation specifications

Section

Summary

Summary

- V7 includes several improvements to the Service Integration components
 - ▶ Simplified configuration panels and new wizards
 - ▶ Support for new client types
 - Thin JMS client library for Java SE clients
 - Resource adapter for WebSphere Community Edition and JBoss clients
 - ▶ Enhancements for message-driven beans
 - MDB start and stop capability
 - Enhanced clustering options
 - ▶ JCA connectivity to WebSphere MQ will be delivered by WebSphere MQ V7

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