IBM Software Group

IBM WebSphere Application Server V7.0 Feature Pack for Service Component Architecture V1.0.1

JMS binding dynamic deployment

@business on demand.

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This presentation will discuss JMS binding dynamic deployment.

JMS resources dynamic deployment overview

- JMS resources needed for SCA are dynamically created:
  - If resources do not exist
  - Resources relate to the WebSphere® default messaging provider
- Resources are created when adding the SCA composite to a business-level application
- Dynamically created resource is a WebSphere default messaging provider service integration bus
- Dynamically created service integration bus resource is given a name:
  - that is specified in the JMS binding
  - if binding does not specify a resource name, default name is given
- Dynamic resource creation is not supported for multiple-server configurations

The product dynamically creates Java™ Message Service (JMS) resources necessary for a Service Component Architecture (SCA) composite, if those resources do not exist and relate to the WebSphere default messaging provider. The product creates the resources when adding the SCA composite to a business-level application. The dynamically created resource is a WebSphere default messaging provider service integration bus. The product does not create resources that relate to WebSphere MQ; those resources must exist. A dynamically created service integration bus resource is given a name that is specified in the JMS binding or given a default name, if the binding does not specify a resource name. When an SCA composite uses a mixture of existing and non-existent resources, the product dynamically creates the resources that do not exist.
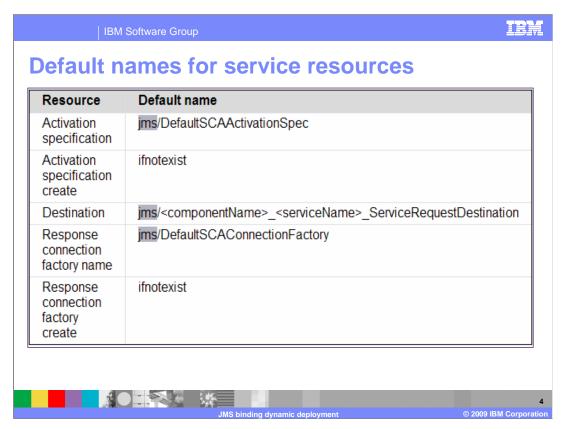
Dynamic resource creation is not supported for multiple-server configurations. For stand-alone application servers, dynamic resource creation is enabled by default. To disable dynamic resource creation, set the admin.jms.DRC.disable system property to true.

Note that Dynamic resource is primarily intended for rapid development and not so much for production deployment (since users most likely will want to configure the resources more precisely than is possible with Dynamic resource).

Default naming of resources

- JNDI name for a resource not specified by JMs binding:
  - service integration bus resource dynamically created
    - Resource assigned a default name: **DefaultSCABus**
- Prerequisite:
  - service integration bus service must be enabled

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When a JMS binding does not specify a Java Naming and Directory Interface (JNDI) name for a resource, the product dynamically creates a service integration bus resource. It then assigns the resource a default name, DefaultSCABus if no other needed resources already exist. If any resources do already exist, the same bus that the existing resources is using is used

Note: You must have service integration bus service enabled for your application server. Before deploying your SCA composite, enable the service integration bus service of the server, and then stop and restart the server.

Default names for service resources

Resource	Default name
Activation specification	jms/DefaultSCAActivationSpec
Activation specification create	ifnotexist
Destination	jms/<componentName>_<serviceName>_ServiceRequestDestination
Response connection factory name	jms/DefaultSCAConnectionFactory
Response connection factory create	ifnotexist

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For an SCA service that uses a JMS binding, the product uses the shown default names if JNDI name values are not supplied in the composite definition.

Service resource creation scenarios

- Composite definition does not define resources

- Composite definition defines destination and activation specification

- Resources for both the destination and activation specification do not exist

- The destination resource does not exist, but the activation specification resource exists

- The destination resource exists, but the activation specification resource does not exist
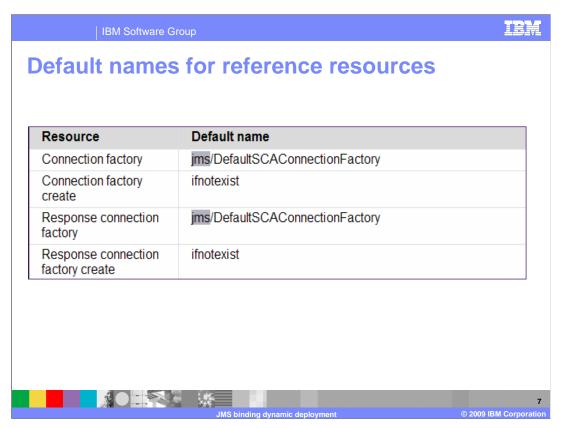
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Listed here are typical patterns for dynamic service resource creation.
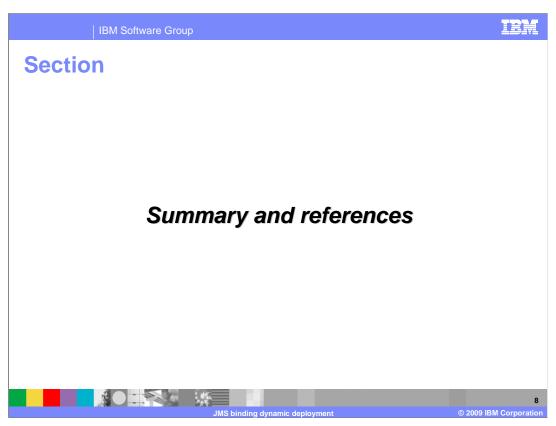
Resources not defined in the composite

- If a composite definition does not define resources:
  - ▸ Default names assigned to all resources using the default service integration bus
  - ▸ Default service integration bus DefaultSCABus created if it does not exist
  - ▸ Default destination jms/*<componentName>_<serviceName>*_ServiceRequestDestination on the default bus created
  - ▸ Default activation specification jms/DefaultSCAActivationSpec created
  - ▸ default response connection factory jms/DefaultSCAConnectionFactory created

Composite definition does not define resources. A composite definition that does not define resources resembles :<binding.jms> </binding.jms>.
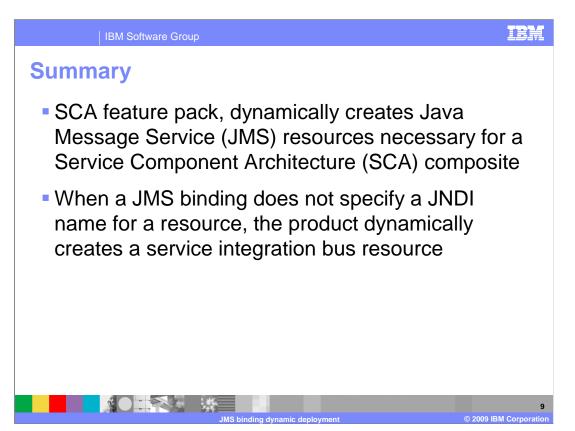
If a composite definition does not define resources, the product assigns default names to all resources using the default service integration bus. It creates the default service integration bus DefaultSCABus if it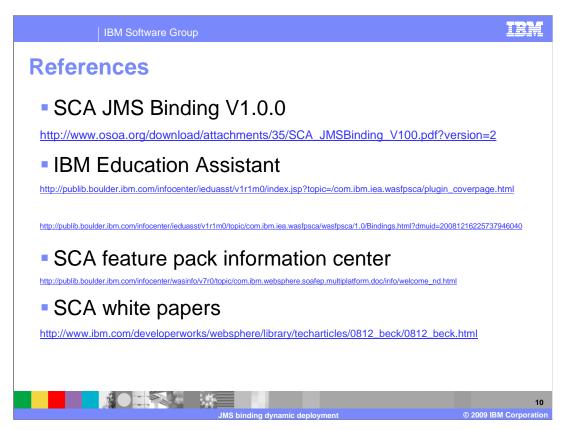 does not exist, the default destination jms/*<componentName>_<serviceName>*_ServiceRequestDestination on the default bus, the default activation specification jms/DefaultSCAActivationSpec if it does not exist and uses the default bus and default destination. It also creates the default response connection factory jms/DefaultSCAConnectionFactory if it does not exist and uses the default bus. When the product creates a destination, a bus destination and a destination resource are created. The bus destination name and the destination resource name are derived from the JNDI name, with / replaced by _.

Default names for reference resources

Resource	Default name
Connection factory	jms/DefaultSCAConnectionFactory
Connection factory create	ifnotexist
Response connection factory	jms/DefaultSCAConnectionFactory
Response connection factory create	ifnotexist

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For an SCA reference that uses a JMS Binding, the product uses the shown default names if JNDI name values are not supplied in the composite definition.
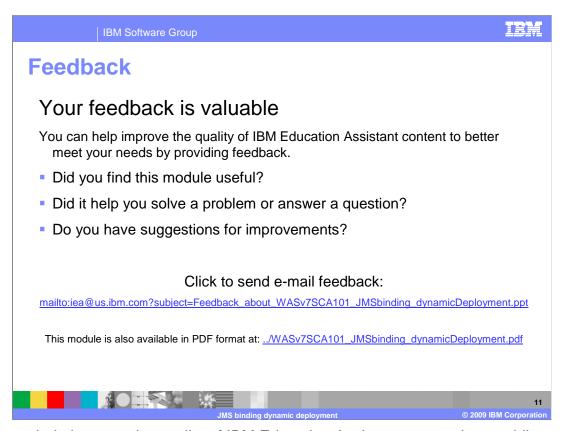
Section

Summary and references

JMS binding dynamic deployment

The next section will provide a summary and references.

Summary

- SCA feature pack, dynamically creates Java Message Service (JMS) resources necessary for a Service Component Architecture (SCA) composite

- When a JMS binding does not specify a JNDI name for a resource, the product dynamically creates a service integration bus resource

In summary, SCA feature pack dynamically creates Java Message Service (JMS) resources necessary for a Service Component Architecture (SCA) composite, if those resources do not exist. When a JMS binding does not specify a Java Naming and Directory Interface (JNDI) name for a resource, the product dynamically creates a service integration bus resource. It then assigns the resource a default name, DefaultSCABus if no other needed resources already exist. If any resources do already exist, the same bus that the existing resources is using is used.

References

- ## SCA JMS Binding V1.0.0

  http://www.osoa.org/download/attachments/35/SCA_JMSBinding_V100.pdf?version=2

- ## IBM Education Assistant

  http://publib.boulder.ibm.com/infocenter/ieduasst/v1r1m0/index.jsp?topic=/com.ibm.iea.wasfpsca/plugin_coverpage.html

  http://publib.boulder.ibm.com/infocenter/ieduasst/v1r1m0/topic/com.ibm.iea.wasfpsca/wasfpsca/1.0/Bindings.html?dmuid=20081216225737946040

- ## SCA feature pack information center

  http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/topic/com.ibm.websphere.soafep.multiplatform.doc/info/welcome_nd.html

- ## SCA white papers

  http://www.ibm.com/developerworks/websphere/library/techarticles/0812_beck/0812_beck.html

Here are some useful references

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