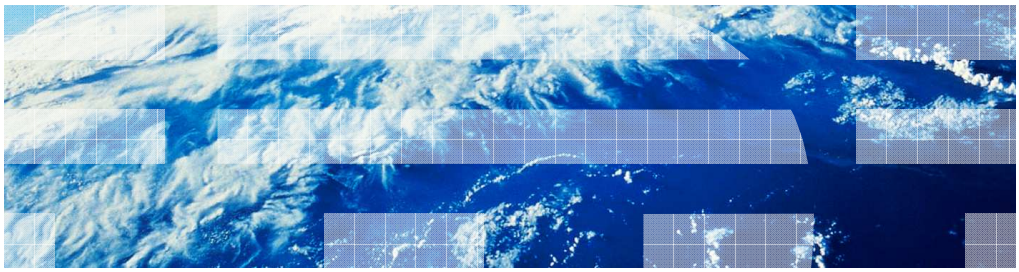
WebSphere Message Broker Version 7

The SCA nodes - Part 4



WebSphere. software

This is the fourth and final session describing the new SCA nodes in Message Broker version 7.

Overall agenda for SCA nodes

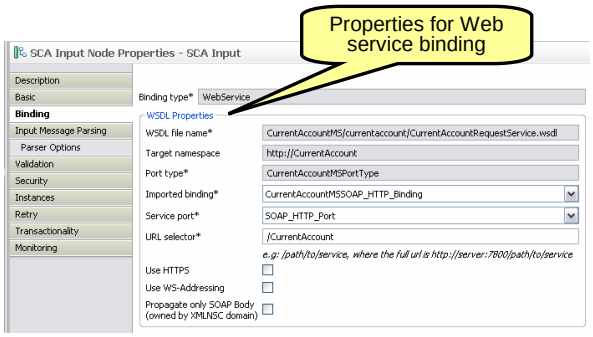
- Part 1: Introduction to SCA
  - Overview of SCA, WebSphere Process Server and WebSphere Integration Developer
- Part 2: What's new in WebSphere Message Broker V7.0
  - Scenarios
  - Broker SCA definition
  - SCA nodes
- Part 3: Toolkit wizards
  - SCA importer
  - Generate Broker SCA Definition wizard
  - SCA exporter
- Part 4: Runtime processing of SCA messages
  - Binding types
  - Message routing
  - Message processing

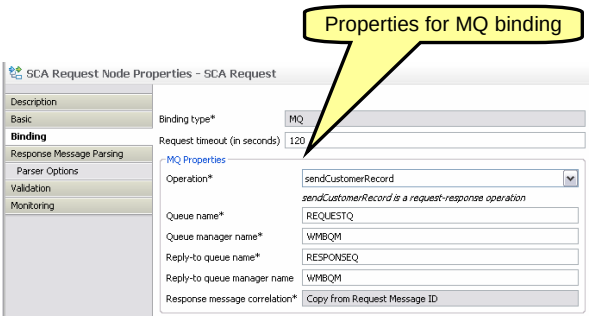
This final session will describe how Message Broker handles SCA messages at runtime. It will show how a variety of binding types are handled, and how messages are processed and routed.

Earlier sessions have discussed the concepts of SCA, and how these applications are constructed in the Message Broker Toolkit.

Two binding types

- Web services (SOAP/HTTP)
  - Properties defined in the wsdl are automatically configured in the SCA nodes
- MQ
  - Queue manager, queue and response message correlation properties are automatically configured in the SCA nodes





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First, as a reminder from the earlier sessions, the SCA nodes support either Web services or MQ bindings.

For Web services, only SOAP 1.1 over HTTP using JAX-RPC is supported.

The binding type is determined from the SCA import or SCA export contained within the broker SCA definition.

The binding properties shown in the SCA nodes are only those that are specific to the binding type being used.

Pairs of SCA nodes must use the same binding type. The SCA reply node does not allow you to switch transports. If the SCA input node uses Web services then the reply node will also use Web services. The same rule applies to the asynchronous request and reply nodes.

Web services binding properties (1)

- The SCA input node contains these properties in the binding tab when the binding type is Web services:

Property	Description
Binding type	The binding type
WSDL file name	The name of the WSDL file used to configure this node
Target namespace	Displays the namespace used in the WSDL file
Port type	The combo-box lists all port types defined in the WSDL file. By default, the first port type found in the SCA Import file is selected
Imported binding	The combo-box lists all SOAP bindings with HTTP transport associated with the selected port type. The selected binding is resolved from the Port value set in the SCA Import
Service port	The combo-box lists all WSDL ports that point to the selected binding. The port value is set from the SCA Import
URL Selector	This property is automatically set from the soap address of the selected port You can change this value to your own value
Use HTTPS	This is configured automatically from the <soap:address> element of the selected service port from the WSDL file
Use WS-Addressing	This property indicates whether to engage WS-Addressing on the SCA Input node
Propagate only SOAP Body	By default the entire SOAP message is propagated. If this check box is checked, then the SOAP envelope and headers are stored in the local environment and the SOAP message body is propagated under the XMLNSC domain

This table describes the SCA input node properties, and is provided for reference.

Web services binding properties (2)

- The SCA request and asynchronous request node contains these properties in the binding tab when the binding type is Web services:

Property	Description
Binding type	The binding type
WSDL file name	The name of the WSDL file used to configure this node
Target namespace	Displays the namespace used in the WSDL file
Port type	The combo-box lists all port types defined in the WSDL file. By default, the first port type found in the SCA Export file is selected
Imported binding	The combo-box lists all SOAP bindings with HTTP transport associated with the selected port type. The selected binding is resolved from the Port value set in the SCA Export
Operation	The combo-box lists all operations defined by the selected port type and implemented by the selected binding. The first operation in the list is selected by default
Service port	The combo-box lists all WSDL ports that point to the selected binding. The port value is set from the SCA Export
Web service URL	This property is automatically set from the soap address of the selected port. You can change this value to your own value

This table shows the properties for the request and asynchronous request nodes, when the request is made using Web services.

MQ binding properties

- The SCA request and SCA asynchronous request node contains these properties in the binding tab when the binding type is MQ

Property	Description
Binding type	The binding type
Operation	The selected operation from the selected binding in the WSDL file. The WSDL resides within the Broker SCA definition file
Queue name	The queue that receives a request message from Message Broker
Queue manager name	The queue manager that receives a request from Message Broker
Reply-to queue name	The queue that receives a response message from WebSphere Process Server
Reply-to queue manager name	The queue manager that receives a response from WebSphere Process Server
Response message correlation	This is an indication of how WebSphere Process Server should fill in correlation ID information in the response message

This tables shows the properties when the binding type is MQ.

When using the SCA input node, if you are using the MQ binding, you must specify the queue name that receives MQ messages.

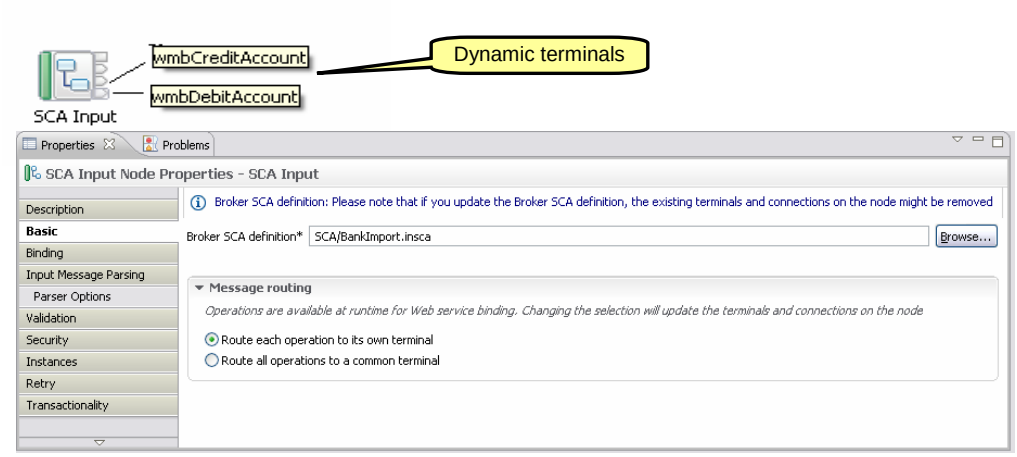
The message flow will expect the Reply-to destination to be provided in the MQMD header of the inbound message. WebSphere Process Server fills in this value when sending the inbound request to Message Broker.

Additionally, a response message correlation property is not necessary as this is also specified in the MQMD header of the incoming message.

The SCA input node supports all MQ data bindings used by Process Server. You can set the message domain yourself when the binding type is MQ.

SCA message routing

- In the SCA Input node, you can configure how the node should route a message



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The SCA input node uses dynamic terminals to process the message body.

These terminals are determined by operations contained in the WSDL interface file.

An incoming message is routed to the appropriate terminal dependent on the target operation.

You can configure the node to use a common out terminal.

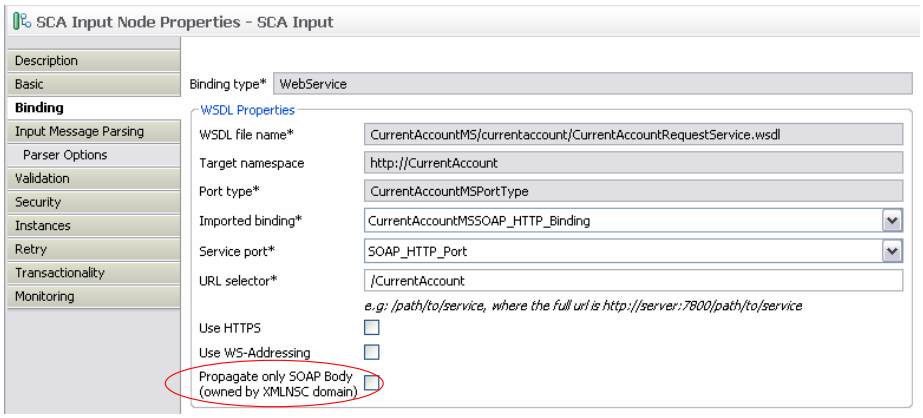
If you select this option to use a common out terminal, then the dynamic terminals are deleted from the node in the message flow canvas. At runtime all messages are routed to the common out terminal.

Also, the check box “Propagate only SOAP Body” in the Binding tab is grayed out, as the whole SOAP message is always propagated when the common out terminal is used.

If the binding type is MQ, then you cannot select the option to propagate the message to the operation terminal. In this case, the message is always propagated to the common out terminal

SCA message processing (1)

- For Web services, the message can be propagated with or without the SOAP envelope and SOAP headers
- By default, the entire SOAP message (including the envelope and headers) is propagated. In this case the message is propagated in the SOAP domain
- If the check box is checked, then the SOAP envelope and headers are stored in the local environment and the SOAP message body is propagated under the XMLNSC domain



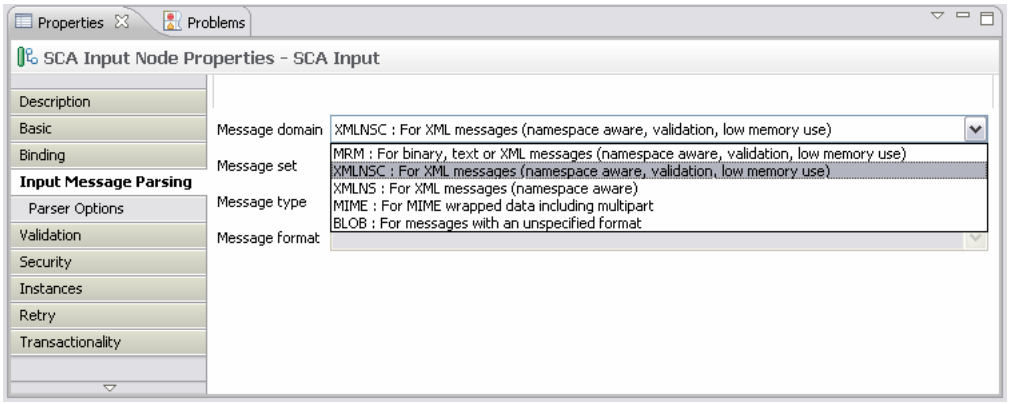
The entire SOAP message is propagated by default. This is configurable using the ‘Propagate only SOAP Body’ check box.

If the check box is checked, the SOAP envelope and headers are stored in the local environment. The SOAP message body is available in the message tree under the XMLNSC domain and is propagated to the correct operation terminal.

If the check box is unchecked, which is the default, the SOAP envelope and headers are not stored in the local environment and the entire SOAP message is propagated in the SOAP domain. This allows the message flow to act as a Web service intermediary and forward the request to the real Web service.

SCA message processing (2)

- For MQ, the message is propagated according to the domain that is selected in the parsing tab
- The XMLNSC domain should be selected to parse XML messages
- The MRM domain should be selected to parse non-XML messages, like CSV or COBOL



For the MQ binding, the message headers and the message body are available in the tree under Root. The transport headers are available in the normal place before the body.

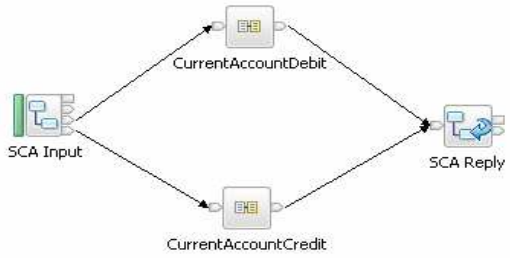
The SCA input node supports all MQ data bindings used by WebSphere Process Server. You can specify the message domain when the binding type is MQ.

If the data binding in the SCDL indicates all the operations are using XML, then the XMLNSC domain is selected as the default; otherwise the BLOB domain is selected as the default.

The SCA nodes allow non-XML data to be sent and received from WebSphere Process Server using the MQ binding. The MRM domain should be used to parse non-XML messages received from process server.

SCA sample

- A sample is provided which demonstrates the capability offered by all the SCA nodes
  - Located in the “Transports and Connectivity” section in Samples and Tutorials
  - The sample re-creates a scenario in which a savings account is linked to a current account
  - The savings account is hosted by WebSphere Process Server
  - You can extend the sample to allow the current account to be hosted by WebSphere Message Broker



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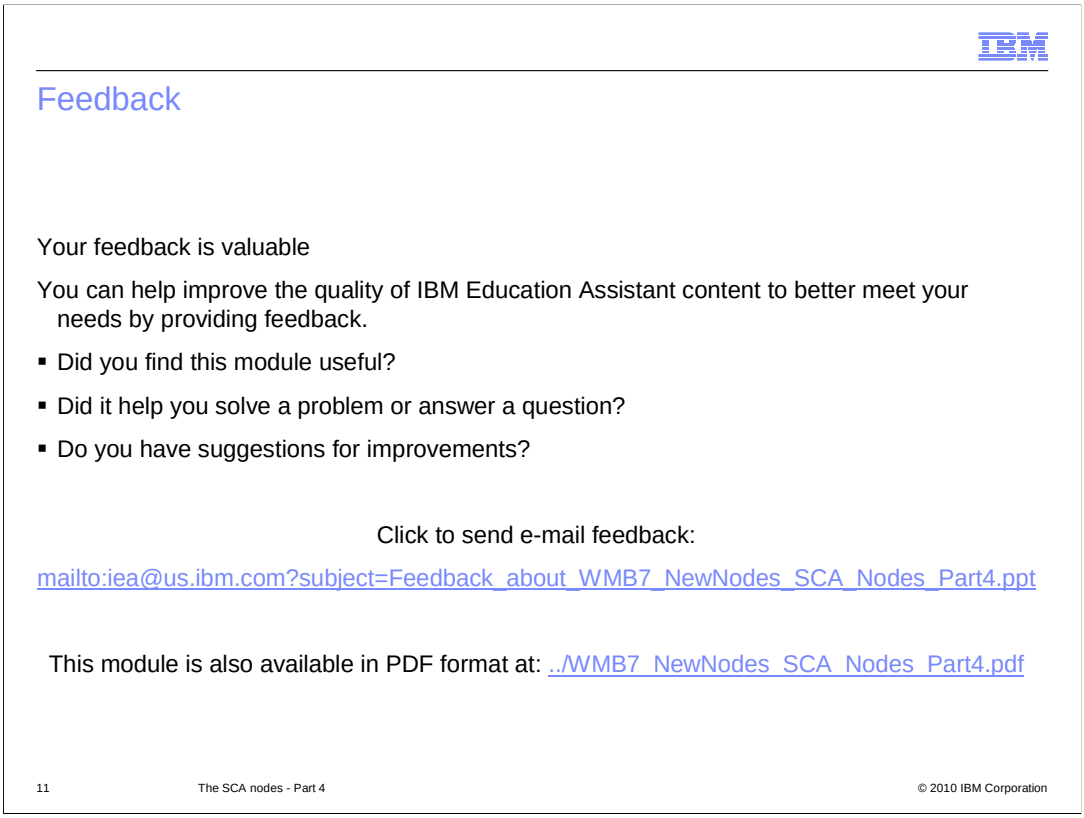
The SCA nodes sample re-creates a scenario in which a savings account is linked to a current account. The sample shows you how to do two things.

First, a money transfer from the current account to the savings account using the asynchronous request and response nodes.

Secondly, a money transfer from the savings account to the current account using the SCA input and reply nodes.



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