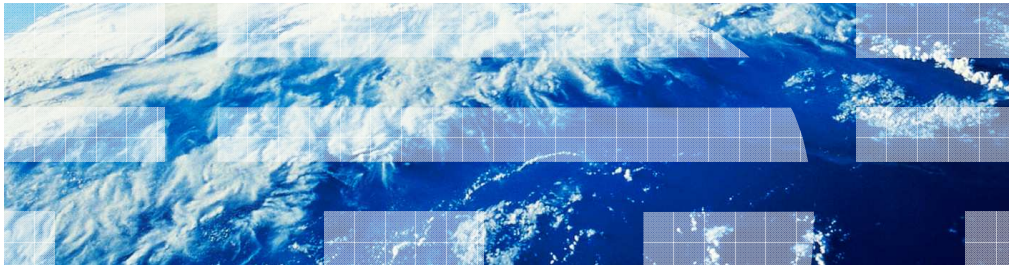


WebSphere Message Broker Version 7

The SCA nodes - Part 1



This session is the first of four which describe the new SCA nodes in Message Broker version 7. The SCA nodes are provided to allow easy connectivity with WebSphere® Process Server using the Service Component Architecture. This is typically shortened to SCA.

Overall agenda for SCA nodes

- Part 1: Introduction to SCA (this session)
 - Overview of SCA, WebSphere Process Server and WebSphere Integration Developer
- Part 2: What is available 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

Part one of the SCA nodes provides an introduction to the Service Component Architecture, and how it is implemented in WebSphere Process Server and WebSphere Integration Developer.



Section

Part 1 - Introduction to SCA

3

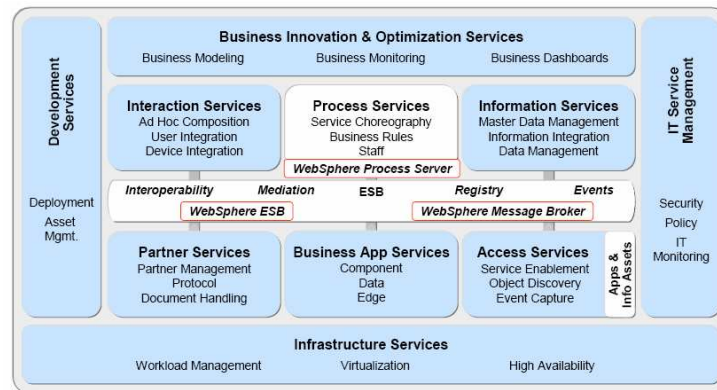
The SCA nodes - Part 1

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Part 1 is an Introduction to SCA.

IBM SOA foundation

- The IBM SOA Foundation
 - An integrated, open set of software, best practices, and patterns
 - Provides full support for the SOA life cycle



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The SCA nodes - Part 1

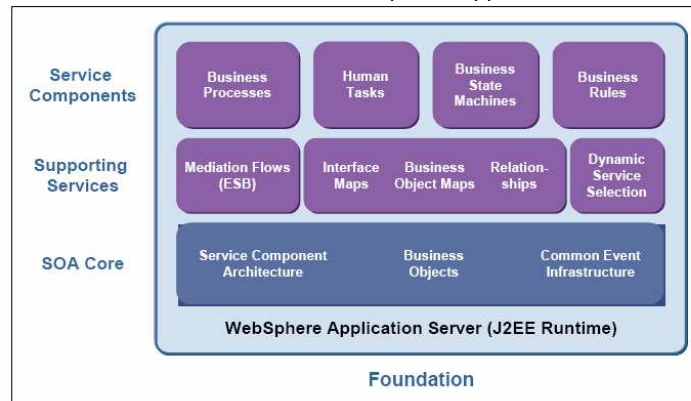
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The IBM SOA Foundation is an integrated, open set of software, best practices, and patterns that provides what you need to get you started with a service-oriented architecture, or SOA. The SOA Foundation provides full support for the SOA life cycle through an integrated set of tools and runtime components that allow you to use skills and investments across the common runtime, tools, and management infrastructure.

The IBM SOA reference architecture shown in the diagram is a way of looking at the set of services that go into building an SOA. These capabilities can be implemented on a build-as-you-go basis, allowing capabilities and project-level solutions to be easily added as new requirements are addressed over time. The reference architecture shows the tight integration with other critical IT aspects such as security, IT monitoring, virtualization, and workload management.

WebSphere Process Server

- WebSphere Process Server is a business integration server that was built to support solutions based on SOA
- You can use it to build advanced business processes
- WebSphere Process Server is based on WebSphere Application Server



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WebSphere Process Server includes three layers:

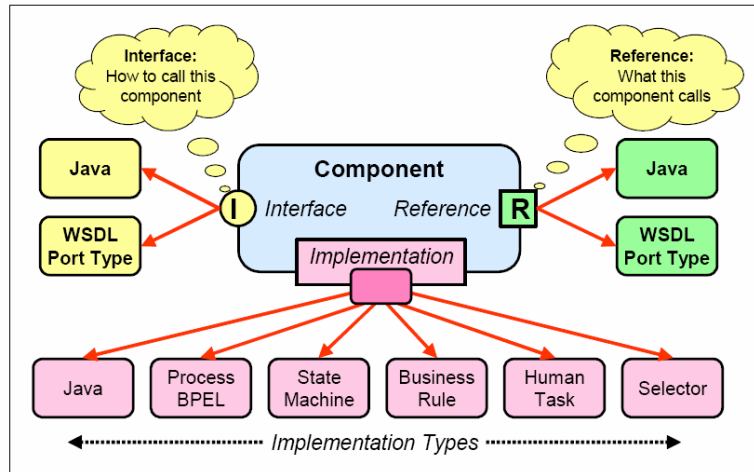
First, the **SOA Core**: The service-oriented architecture core of WebSphere Process Server provides both uniform invocation and data-representation programming models and monitoring and management capabilities for applications running on WebSphere Process Server.

Second, the **Supporting services**. The supporting services in WebSphere Process Server address a range of transformation challenges for connecting components and external artifacts.

Finally, the **Service components**. All integration artifacts running on WebSphere Process Server (for example, business processes, business rules, and human tasks) are represented as components with well defined interfaces.

Service Component Architecture (SCA)

- Service Component Architecture separates business logic from implementation, so that you can focus on assembling an integrated application without knowing implementation details
- The implementation of business processes is contained in service components



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The SCA nodes - Part 1

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The following terms are important items in the Service Components Architecture.:

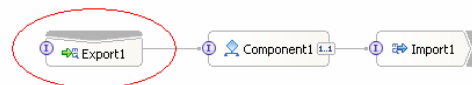
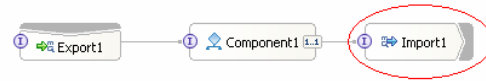
First, the SCA interface. By definition, an interface is the place at which independent and often unrelated systems meet and communicate with each other. An interface can be defined by any programming or interface definition language. WebSphere Process Server currently supports a Java interface definition and an XML definition, using the Web services Description Language. The arguments described in an XML schema are exposed to programmers as Service Definitions Objects, or SDOs. The WebSphere Integration Developer tool primarily generates interfaces using the WSDL representation.

Second, SCA implementation. The SCA implementation specifies the implementation type of the component's interface. Developers can implement business services in their language of choice, for example, Java, BPEL, or state machine. Current implementation types include business process, human task, interface map, selector, business rules, business state machine, and Java.

Finally, SCA references. An SCA reference specifies other SCA services that a component uses. These can be soft links that do not have to specify which specific component is to be used.

SCA import and SCA export

- Import
 - An *import* allows you to use functions that are not a part of the module that you are assembling. You use an import to invoke an external function
- Export
 - An export is a published interface from a component that offers its service to the outside world. The export allows an external program to invoke services provided by the component
- Imports and exports require binding information, which specifies how the data is transported from the modules



You can call or expose services using imports and exports, with the appropriate bindings that specify how data is transferred.

Imports and exports allow modules to publish their services and to use services from other sources.

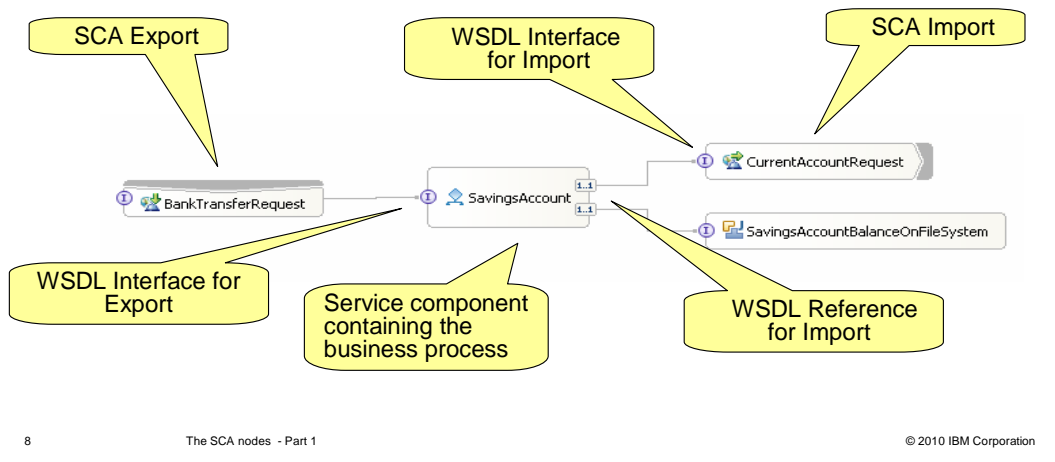
Imports and exports require binding information, which specifies the means of transporting the data from the modules.

An *import* allows you to use functions that are not a part of the module that you are assembling.

An *export* is a published interface from a component to offer its service to the outside world, for example, as a Web service.

WebSphere Integration Developer

- WebSphere Integration Developer is the development tool for the construction of SOA-based applications
- These applications are deployed to WebSphere Process Server



WebSphere Integration Developer is the tool that you will use to construct applications that are going to be deployed in the WebSphere Process Server system.

WebSphere Integration Developer is an Eclipse-based application, and the primary perspective for working with business modules is the Business Integration perspective. When you create a module, an assembly diagram for the module is created. As you add components to your module, you populate the assembly diagram with these components.

From the assembly diagram, you define the interfaces to each component, generate binding information for access to the module, and can generate the implementation for service components.

The export component represents the interface to the module for clients.

The import component represents the interface to a service, for example, an interface to WebSphere Message Broker.

The service component, Savings Account, in the center of the screen capture, has been implemented as a business process.



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