



IBM Software Group

IBM® WebSphere® Application Server V6.1 Feature Pack for Web Services

Overview



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This presentation will focus on explaining the IBM® WebSphere Application Server V6.1 Feature Pack for Web Services.

Agenda

- Feature pack overview
- Contents of the feature pack for Web services



This presentation will begin with a general overview of feature packs, explaining the reasons for using them. Then, the presentation will explain the particular enhancements and features offered by the feature pack for Web services. The appendix of this presentation, includes URLs for most of the specifications supported by the feature pack for Web services.

Section

Feature pack overview



The next section will provide an overview of the feature pack strategy.

Feature pack overview

- Feature packs provide a flexible mechanism to deliver content between full WebSphere Application Server releases
 - ▶ Themed based on content
 - ▶ Allows users to stay on a stable base
 - ▶ Enable users who want to try new functionality
- Used to provide support for new or enhanced technologies
 - ▶ Web services
 - ▶ EJB 3.0
- A new delivery vehicle (not a replacement for refresh packs)
 - ▶ No burden on footprint when features are not installed
 - ▶ Not a required installation

Feature packs help provide a new flexible way to add new technologies and features to WebSphere Application Server, between major releases. Feature packs are themed based on similar content, for instance the feature pack for Web services adds new technologies surrounding Web services. Customers who want to use these new features can add the feature pack to their already existing, stable WebSphere Application Server V6.1 environments. Other feature packs will be created to support different technologies, such as EJB 3.0. Feature packs are a new delivery vehicle for WebSphere Application Server, they are not a replacement for any current content vehicles such as refresh packs. Feature packs are not a required installation, and when not installed will not increase the overall footprint of the environment with unused technologies.

Feature pack details

- Feature pack content extends base WebSphere Application Server function
 - ▶ An optional installation on top of WebSphere Application Server, similar to stack product
- Feature pack content will either be added to the next major WebSphere Application Server release or a feature pack rebased on the next major release will be made available
 - ▶ Current feature packs install on WebSphere Application Server V6.1
- GA feature packs support the same configurations as the WebSphere Application Server release
 - ▶ Includes platforms and language support
 - ▶ Applicable to Express, Base and Network Deployment
- Feature pack inherits End Of Service (EOS) from base WebSphere Application Server release
 - ▶ Same extended support rules apply

Feature packs are designed to extend base WebSphere Application Server functionality. They are optional installations that add new features onto existing installations much like other stack products like WebSphere Application Server Extended Deployment. Content provided by a feature pack will eventually be added in to the next major release of WebSphere Application Server, or there will eventually be another feature pack created for that next major release. The current feature packs are all to be used with WebSphere Application Server V6.1. Feature packs can support the same configurations as WebSphere Application Server, with the same language and platform support, and can be added to both express, base and network deployment environments. Feature packs will inherit the same end of service dates from the base WebSphere Application Server release they work with, so in this case WebSphere Application Server V6.1. The same rules will apply for extended support statements.

Section

Feature pack for Web services

The next section describes the specific technologies provided by the feature pack for Web services.

Feature pack for Web services

Features

- ▶ JCP-based programming model
 - JAX-WS 2.0
 - JAXB 2.0
 - SAAJ 1.3
 - StAX 1.0

- ▶ Web services standards
 - RAMP profile
 - WS-ReliableMessaging
 - WS-SecureConversation
 - WS-Addressing
 - WS-I Basic Security Profile
 - WS-I Basic Profile 1.0
 - SOAP 1.2, MTOM / XOP
 - WS-AtomicTransactions
 - WS-Distributed management (WSDM)

Benefits

- ▶ Standardized (and portable) application programming model
 - Simple annotation based
 - Fast pull parser based
 - Asynchronous programming model

- ▶ Standards-based Interoperability w/other vendors implementations
 - Securely
 - Reliably
 - Asynchronously

- Efficiently
- Transactionally
- ▶ Standards-based manageability



The feature pack for Web services provides a new Java community process based programming model for the Java API for XML based Web services. This includes additional specifications for the Java API for XML Binding, and updates to the SOAP API for Attachments in Java and the SOAP specifications. This new programming model provides an updated, standardized way to develop Web service based applications. It includes annotations support, and an asynchronous messaging model. The feature pack for Web services also provides support for other Web services standards, such as the Reliable Asynchronous Messaging Profile or RAMP. This includes standards for various qualities of server, such as reliable message, secure conversation and Web services addressing. The feature pack also provides support for a new SOAP Message Transmission Optimization Mechanism or MTOM. This is a new standard that describes a faster method for dealing with large binary attachments in Web services.

Apache Axis2 engine

- Axis2 is used as the Web services engine within WebSphere Application Server for JAX-WS
 - ▶ Does not support the Axis2 programming model
 - ▶ Instead uses the JAX-WS programming and configuration model
- Participate directly in Apache Axis2 open-source project
 - ▶ Minimize IBM-only code
 - ▶ Improve interoperability

The Apache Axis2 runtime is used as a new Web services engine within WebSphere Application Server V6.1 for JAX-WS. Even though this runtime is based on Axis2, it does not support the separate Axis2 programming model, you must program based on the JAX-WS programming and configuration model defined by the feature pack for Web services. The runtime is based on Axis2 for a number of reasons, by being involved in the open source project IBM was able to minimize IBM specific code and generally improve overall interoperability.

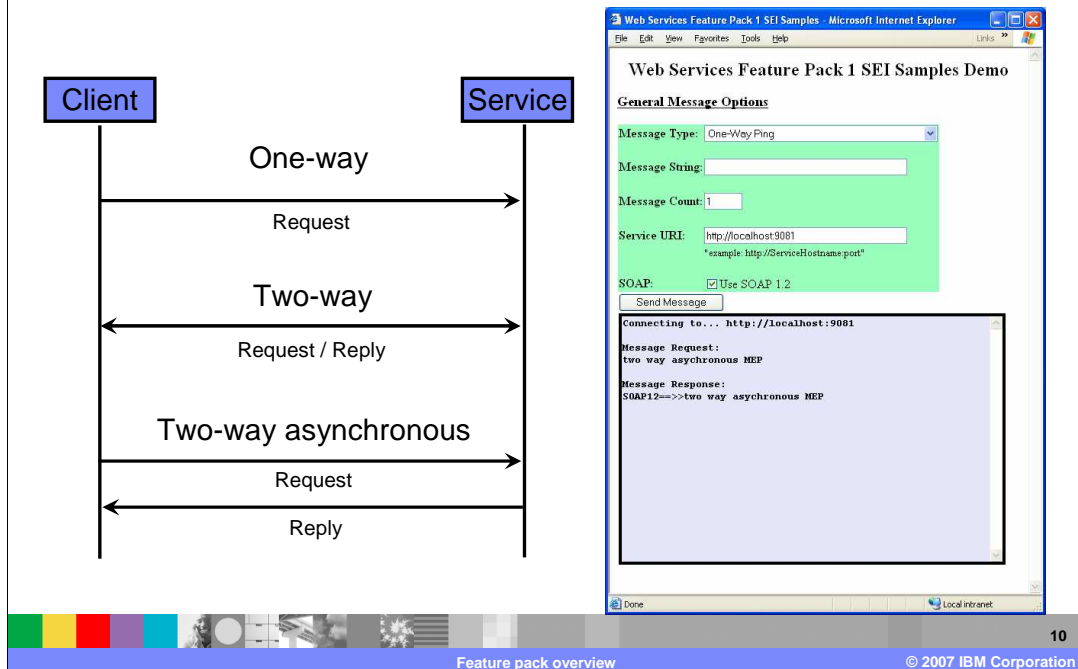
Interoperability

- Shipping simple message exchange pattern (MEP) samples
 - ▶ Used in testing interoperability between IBM and Microsoft® at the product level
 - ▶ Both IBM and Microsoft samples have been shipped, along with documentation, in the feature pack for Web services to demonstrate core functionality
- Updating WS-I Supply Chain Management (SCM) application to use new JAX-WS programming model
 - ▶ Ensure feature pack for Web services continues to comply with WS-I BP & BSP profiles
- Continuing focus on Standards Body Participation
 - ▶ WS-I, OASIS
 - ▶ Product code used in Standards Body Participation



The feature pack for Web services also has an important focus on interoperability. Interoperability samples based on simple message exchange patterns are shipping with the feature pack for Web services, these have been used in testing interoperability with Microsoft® products. The feature pack has also updated the WS-Interoperability based supply chain management application based on the new JAX-WS programming model. The tool also continues to offer configurations based on interoperability specifications.

Simple message exchange pattern samples



The samples that are shipped with the feature pack for Web services deal with a number of message exchange patterns. There are three patterns to consider. A one-way request, that sends a request from the client to a target service. A two-way request and response, where the client sends a request to a service and then waits for a reply. And an asynchronous two-way pattern, where the client sends a request to a target service, and expects but does not wait to receive a response.

Section

Summary

The next section provides a summary of this presentation.

Summary

- Feature packs provide a flexible option to add technologies to an existing environment
 - ▶ Allow users to maintain a stable base
- The feature pack for Web services provides new support for advanced Web services features
 - ▶ JAX-WS programming model
 - ▶ New qualities of service



The new strategy for feature packs provides a flexible option to add new technical features onto existing WebSphere Application Server V6.1 environments. Customers can evaluate and use the feature packs with the technologies they need, and ignore feature packs they are not interested in. The feature pack for Web services, is a feature pack providing new support for Web services technologies, such as a JAX-WS programming model, and new qualities of service like reliable messaging.

Section

References

The next section provides references for this presentation.

References

- **Reliable Asynchronous Messaging Profile (RAMP)**
<http://www-128.ibm.com/developerworks/webservices/library/specification/ws-ramp/>
- **Service Component Architecture (SCA) and Service Data Objects (SDO)**
<http://www-128.ibm.com/developerworks/webservices/library/specification/ws-scasdosumm/>
- **JAX-WS 2.0**
<http://www.jcp.org/en/jsr/detail?id=224>
- **JAXB 2.0**
<http://www.jcp.org/en/jsr/detail?id=222>
- **Apache Axis2**
<http://ws.apache.org/axis2>
- **Pattern solutions**
<http://www-128.ibm.com/developerworks/rational/products/patternsolutions/>

This slide is a reference, listing the locations of various specifications provided by the feature pack for Web services.

References

- **OASIS WS-Reliable Exchange**
http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=ws-rx
- **W3C WS-Addressing**
<http://www.w3.org/2002/ws/addr/>
- **OASIS WS-Security**
http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wss
- **WS-Secure Conversation**
<http://www-128.ibm.com/developerworks/library/specification/ws-secon/>
- **WS-Transactions**
<http://www.alphaworks.ibm.com/wsspec/agreement/ws-tx>
- **SOAP 1.2**
<http://www.w3.org/TR/soap/>
- **MTOM**
<http://www.w3.org/TR/2005/REC-soap12-mtom-20050125/>

This slide is a reference, listing the locations of various specifications provided by the feature pack for Web services.

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