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

Development options

This presentation will focus on explaining the available tools options that can be used for application development with the IBM WebSphere Application Server V6.1 Feature Pack for Web Services.

Agenda

- Overview

- WebSphere Application Server toolkit

- IBM Rational® Application Developer

This presentation will begin with an overview of the tools options available for developing Web Services applications for the Feature Pack for Web Services. It will explain the development support for the Feature Pack for Web Services in the Application Server Toolkit. Finally, it will explain how the IBM Rational Application Developer V7 can be updated to also be used for the Feature Pack for Web Services.

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Section

Overview

Development options

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3

This section will provide an overview of the tools for the Feature Pack for Web Services.

Development life cycle scenarios

- Application architect
  - ▶ Develop WSDL/XSD contracts

- Application developer
  - ▶ Generate top-down Java™ artifacts
  - ▶ Annotate Java bean classes

- Assembler
  - ▶ Package portable classes, schemas, and WSDLs

- Deployer
  - ▶ Deploy packaged WAR

- Administrator
  - ▶ Administer applications, manage "policy"

4

The roles listed above have been identified as key to development and management of Web Services in WebSphere Application Server. In many cases, the same people play one or more of these roles. In developing the Feature Pack for Web Services close attention was paid to the roles and responsibilities of each one of these roles.

For the architect role, developing WSDL and XSD files, their role actually gets simplified. Since JAXB 2.0 is used as the mapping language, and handles all of XSD schema, it's easier for architects to develop services that leverage the full breadth of XSD. The application developer also has a number of new tools available to create JAX-WS based Web Services. Administrators have also had their roles improved and simplified through the introduction of policies.

Tools options

- Command-line tools
  - JAX-B 2.0 XSD->Java generation (xjc)
  - JAX-B 2.0-> Schema generation (schemagen)
  - JAX-WS 2.0 WSDL->Java (wsimport)
  - JAX-WS 2.0 Java->WSDL (wsgen)

- Rational Application Developer and WebSphere Application Server toolkit
  - GUI Wizards to drive command-line tools
  - Feature pack awareness (facet)
  - Annotation validation
  - JAX-WS navigator view
  - Policy set support

5

For the application developer, the Feature Pack for Web Services provides a set of tools to help make development easier. At the most basic level there is command line tools to generate various artifacts. An XJC command can be used to generate Java artifacts based on a JAXB 2.0 XSD definition or also from a WSDL file. There are also WSIMPORT and WSGEN commands for top down and bottom up Web Services development. There are also updates to the application server toolkit and Rational Application Developer, with additions to wizards for the creation of Web Services. These have been extended to support JAX-WS and JAXB based Web Services with; annotation validation, graphical wizards, publishing tools for developed Web Services and a Jython debugger for scripting.

Packaging model

- Provider:
  - ▸ bundle JAX-WS "annotated" classes, WSDL, and XSD schema within a WAR module

- Client:
  - ▸ bundle JAX-WS "annotated" classes, WSDL, and XSD schema within any J2EE module

- Thin client:
  - ▸ Place JAX-WS "annotated" classes, WSDL, and XSD schema along with the stand-alone thin client Web Services runtime

6

Web Services providers can be packaged along with the JAX-WS annotated classes, WSDL and XSD schema within a WAR module. Clients can be packaged in a similar method within any J2EE module. For thin clients, or clients not deployed within a WebSphere Application Server runtime stand-alone thin client Web Service runtime.

Section

WebSphere Application Server toolkit

The next section shows the new JAX-WS development features offered by the WebSphere Application Server Toolkit.

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IBM WebSphere Application Server toolkit

- Provides a complete environment to help you build applications for IBM WebSphere Application Server V6.1
  - ▶ Application creation
  - ▶ Application testing
  - ▶ Application deployment

- Highly integrated with WebSphere Application Server to facilitate the above functions
  - ▶ More than just a deployment tool
  - ▶ Upgrade process:
    http://www.ibm.com/support/docview.wss?uid=swg24014241

8

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The IBM WebSphere Application Server Toolkit provides a complete development environment for building applications. It provides tools for creating, testing and deploying applications. The application server toolkit is integrated with WebSphere Application Server to make the development tasks, including deployment, easier for users. While the application server toolkit is not a feature risk as IBM Rational Application Developer, it is still a powerful development tool..

IBM WebSphere Application Server toolkit

- Must enable project facet for Feature Pack for Web Services within the application server toolkit to see new Web Services features
  - JAX-WS development wizards
    - Top down
    - Bottom up
  - JSP generation wizards
  - Policy set support
  - Code generation defaults

In order to enable the new features surrounding the Feature Pack for Web Services in the application server toolkit, the project facet for the Feature Pack must be enabled for the project. This will add the ability to use new JAX-WS development wizards, JSP generation wizards, support for policy sets, and the use of code generation defaults.

Section

IBM Rational Application Developer

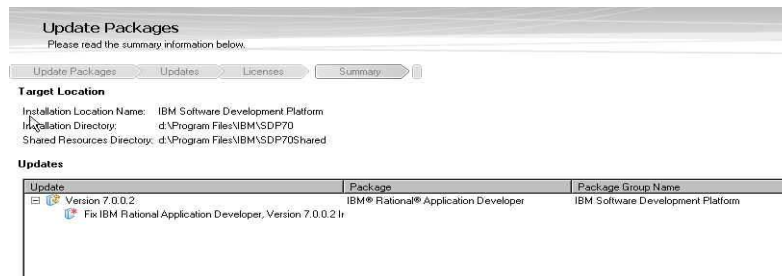The next section explains the addition in IBM Rational Application Developer for the Feature Pack for Web Services.

There is also a update available to add the same wizards and JAX-WS development tools into IBM Rational Application Developer V7 environments. Updating the Rational Application Developer development tools with the Feature Pack for Web Services is a simple process, open the installation manager software in the tools and select update packages.

Rational software update

- The fix pack will automatically install the WebSphere Application Server V6.1 Feature Pack for Web Services
  - Will create a feature pack enabled profile, which is required to take advantage of the JAX-WS runtime

Update Packages
Please read the summary information below.

| Update Packages | Updates | Licenses | Summary | |

Target Location

Installation Location Name: IBM Software Development Platform
Installation Directory: d:\Program Files\IBM\SDP70
Shared Resources Directory: d:\Program Files\IBM\SDP70Shared

Updates

Update	Package	Package Group Name
☐ Version 7.0.0.2	IBM® Rational® Application Developer	IBM Software Development Platform
Fix IBM Rational Application Developer, Version 7.0.0.2 In		

A fix pack will be listed for the Feature Pack for Web Services enhancements for Rational Application Developer. This can be automatically installed and will create a Feature Pack for Web Services enabled profile, which is needed to run JAX-WS applications.

Section

Summary

13

The next section will summarize the materials.

Summary

▪A choice of environments and tools to build applications for IBM WebSphere Application Server V6.1 Feature Pack for Web Services

- ▶ Command line tools
- ▶ Application Server toolkit
- ▶ IBM Rational Application Developer

14

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Developers have a number of choices when creating JAX-WS applications with the Feature Pack for Web Services. Command line tools are available along with options for the Application Server Toolkit and IBM Rational Application Developer.

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15

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