WebSphere Portal 8 Development using Rational Application Developer 8.5

Course Summary

Description

This course will introduce attendees to Portlet development using Rational Application Developer 8.5 as their development platform. It will cover JSR 286 development, iWidget development, Portlet Filters, Client-Side Aggregation and component packaging and deployment. The WebSphere Portal 8.0 theme architecture will be covered. Finally, Mobile development options for WebSphere Portal 8.0 will be covered.

Topics

- What is WebSphere Portal?
- What is Rational Application Developer?
- What are Portlets?
- Understanding the JSR 286 API
- Explore the Portlet Tag Libraries
- Portlets and form processing
- Portlet Preferences and Configuration
- Explore Interactive Portlet
- Introduction to Spring 3 and Portlet
- Understanding client-side aggregation
- Understanding Resource Serving
- Using Dojo with Portlets
- Exploring the iWidget API
- Understanding Portlet filters
- Understanding Portlet services
- Exploring personalization in Portlets
- Developing WebSphere Portal theme and skins
- Exploring Mobile Development with WebSphere Portal

Prerequisites

Course attendees must have web development experience.

Duration

Five days
I. What is WebSphere Portal?
   A. Discuss Applications Servers
   B. Discuss the Portal 8 features
   C. Understand the benefits of WebSphere Portal
   D. Understand Portal Pages and Portlet
   E. Describe Portal Branding (Themes and Skins high level)
   F. Describe WebSphere Content Management
   G. Understand how Portlets are deployed
   H. Review Portlet components
   I. Review WebSphere Portal Security and Authorization features
   J. Discuss Personalization Rules and Visibility Rules
   K. Review common WebSphere Portal architectures
   L. Lab 1: Explore the WebSphere Portal environment
   M. Start the WebSphere Portal Server
   N. Explore the WebSphere Application Server Integrated Solutions Console
   O. Explore the WebSphere Portal Administration Console
   P. Review serverIndex.xml, log files, and start, stop, and server status scripts
   Q. Review common ConfigEngine commands

II. What is Rational Application Developer?
   A. Understand the Eclipse platform
   B. Discuss the Portal specific development features provided with RAD
   C. Discover how to configure the Portal development features and environment
   D. Discuss how to most efficiently configure the WebSphere Portal server for development purposes
   E. Discuss the enhancements to Portal development using Rational Application Developer 8.5
   F. Review the Portal Toolkit and mobile development enhancements
   G. Lab 2: Configuring the Rational Application Developer environment
   H. Add the WebSphere Portal Server to the Rational Application Developer servers view
   I. Configure WebSphere Portal administration and review deployment protocols (RMI versus SOAP configurations)
   J. Explore new Portal 8 development features

III. What are Portlets?
   A. Define component technologies
   B. Review common Portlet concepts
   C. Describe the Portlet container
   D. Understand the advantages of Portlets
   E. Describe the different portlet specifications
   F. Understand the Portlet life-cycle (init, action, render, destroy)
   G. Understand Portlet modes (View, Edit, Help)
   H. Describe the Window States (Normal, Maximized, Minimized)
   I. Understand Portlet Sessions
   J. Describe the portlet artifacts
   K. Understand how Portlets are packaged
   L. Review Portlet Installation (WARs, EARs, Admin console, scripts)
   M. Lab 3: Developing, deploying, and testing Portlets
   N. Create a new Portlet using the Rational Application Developer wizards and testing Portlets
   O. Deploy the Portlet using RAD
   P. Export the Portlet as a WAR
   Q. Install the WAR file via the WebSphere Portal administration console

IV. Understanding the JSR 286 API
   A. Understand the PortletRequest object
   B. Understand the PortletResponse object
   C. Review the Action, Rendering, Events, and Resource Serving
   D. Understand where the JSPs are stored
   E. Discuss Public Render Parameters
   F. Lab 4: Discovering the JSR 286 Portlet API
   G. Create a JSR 286 Portlet Project and Portlet
   H. Use the wizard to add the View, Help, and Edit modes
   I. Manually configure the Edit Defaults modes for the portlet
   J. Discuss Portlet Filters
   K. Discuss Resource Serving
   L. Understand Portlet Events
   M. Discuss Caching
   N. Review Portlet Resource Bundles

V. Explore the Portlet Tag Libraries
   A. Describe the Portlet Tag Library
   B. Understand how to define the Portlet TLD
   C. Understand the function of the defineObjects tag
   D. Describe the available JSP objects available
   E. Discuss the Portlet namespace and how to best define JavaScript functions and variables
   F. Learn how to load Portlet Preferences from Portlets
   G. Describe caching techniques
   H. Discuss the JSP EL
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Course Outline (cont’d)

I. Understand Best Practices and Techniques
J. Explore common 3rd party tag libraries often used by Portlets
K. Lab 5: Explore Portlet tag libraries
L. Define the Portlet Tag libraries in JSPs
M. Use Portlet Resource Bundles
N. Create a renderURL and demonstrate the functionality
O. Create an actionURL and demonstrate the functionality
P. Create a resourceURL and demonstrate the functionality
Q. Use the pre-defined Portlet objects

VI. Portlets and form processing
A. Discuss public render parameters
B. Understand how to process Form input data from Portlets
C. Discuss both Server-side and client-side validation techniques
D. Demonstrate how to change the Portlet Window state
E. Discuss multi-part form data processing
F. Understand how to store Portlet session data
G. Lab 6: Processing form input with Portlets
H. Create an HTML form and create an actionURL
I. Create several input parameters
J. Process the input parameter values
K. Implement different rendering methods based on form input
L. Implement Server-side validation
M. Implement standard error processing techniques

VII. Portlet Preferences and Configuration
A. Discuss Portlet-managed modes
B. Understand how to create initialization parameters
C. Describe the PortletConfig object
D. Understand the Edit, Edit_Defaults, and Config mode
E. Review the PortletPreferences object
F. Lab 7: Explore Portlet Preferences and Configuration
G. Define Portlet default initialization parameters for a portlet
H. Override the existing portlet configuration from both the configuration mode and edit defaults mode
I. Create a copy of the portlet
J. Demonstrate the differences between configuration settings

VIII. Explore Interactive Portlet
A. Describe inter-portlet communication techniques
B. Describe publishing and consuming events
C. Discuss event namespace definitions and usage
D. Understand how to define publishing events
E. Discuss Event processing annotations
F. Understand public render parameters
G. Understand how AJAX and Portlet interactions
H. Discuss the differences between AJAX usage of Servlet and Portlet frameworks
I. Discuss cookie usage
J. Lab 9: Developing, Configure, and test interactive Portlets
K. Create a Portlet to implement messaging via Portlet events
L. Review how Portlet sessions can be used to exchange data
M. Review how to consume public render parameters

IX. Introduction to Spring 3 and Portlet Development
A. Discuss how the Spring 3 libraries can be used by Portlets
B. Discuss Portlet Spring MVC
C. Understand how to create a Spring Portlet
D. Describe the Spring Portlet artifacts
E. Consider best practices for error handling, logging, package structure, etc.
F. Lab 10: Creating a Spring 3 based Portlet
G. Create a Spring 3 based Portlet
H. Demonstrate how to handle different action requests
I. Review the Portlet artifacts as they relate to Spring 3
J. Update the Portlet libraries
K. Use annotations to handle multiple rendering processes

X. Understanding client-side aggregation
A. Describe client-side aggregation
B. Discuss the advantages of CSA and the improved user experience
C. Describe how Portlet customization and personalization is handled
D. Discuss how REST services are consumed
E. Understand the drawbacks of CSA
WebSphere Portal 8 Development using Rational Application Developer 8.5

Course Outline (cont’d)

XI. Understanding Resource Serving
   A. Understand resource URLs
   B. Describe the ResourceServingPortlet interface
   C. Describe caching levels of resources
   D. Understand how to implement REST based services
   E. Describe common data interchange formats
   F. Describe challenges of data encoding
   G. Understand how to serve resources
   H. Describe best practices when serving resources
   I. Lab 12: Explore resource serving
   J. Create a portlet to produce a REST-based JSON feed
   K. Explore the elements of the resource serving portlet
   L. Consume the JSON data

XII. Using Dojo with Portlets
    A. Review the Rich Text Editor WYSIWYG features
    B. Understand Split design view
    C. Discuss Client-side capabilities
    D. Review the Dojo toolkit functionality
    E. Review common Dojo components
    F. Lab 13: Using Dojo and Portlets (Optional)
    G. Review Dojo functionality and includes
    H. Implement AJAX enabled
    I. Implement logging message to Dojo console

XIII. Exploring the iWidget API
      A. Understand the differences between Client-side aggregation and Server-side aggregation
      B. Describe how Portlets and iWidget components behave based on aggregation type
      C. Discuss the components of iWidgets
      D. Review how iWidgets are personalized
      E. Discuss how iWidgets are deployed
      F. Describe iWidget Best Practices
      G. Lab 14: Developing, Deploying and Testing iWidgets (Optional)
      H. Create an iWidget using the RAD 8.5 wizards
      I. Deploy the iWidget
      J. Create CSA Portal page
      K. Configure both iWidgets and Portlets on the Portal Page

XIV. Understanding Portlet filters
     A. Discuss the uses of Portlet Filters
     B. Understand the Portlet Filter lifecycle
     C. Compare Servlet and Portlet filters
     D. Understand Portlet Filter Types: ResourceFilter, RenderFilter, ActionFilter, EventFilter
     E. Write filter classes
     F. Add Portlet filter entries to the Portlet.xml
     G. Describe best practices
     H. Lab 15: Developing, deploying, and testing Portlet filters
     I. Create Action Portlet filter to log user access
     J. Create a Portlet RenderFilter to track analytics
     K. Deploy the Portlet filter
     L. Configure the Portlet filter

XV. Understanding Portlet services
    A. Describe the advantages of Portlet services
    B. Review available Portlet services
    C. Understand how Portlet services are created
    D. Review how Portlet Services are configured
    E. Discuss how to lookup Portlet services
    F. Understand the Portlet service life-cycle
    G. Lab 16: Developing, Deploying and Testing Portlet services
    H. Create a Portlet service implementation
    I. Deploy the Portlet service
    J. Register the Portlet service
    K. Consume the new portlet service from a Portlet

XVI. Developing WebSphere Portal theme and skins
     A. Describe WebSphere Portal themes and skins
     B. Discuss the use of WebDAV
     C. Describe static and dynamic resources
     D. Understand Portal 8 styles
     E. Define theme CSS files
     F. Understand how to create a new Portal 8 theme
     G. Describe Dynamic content spots
     H. Understand how to customize navigation
     I. Discuss how to configure Portal theme modules
     J. Describe how to use jQuery in a Portal 8 theme
     K. Review common portal theme JSP tag libraries
     L. Understand best practices of theme development
     M. Lab 17: Creating a WebSphere Portal theme
     N. Create a new WebSphere Portal 8 theme by copying an existing theme
     O. Customize the new theme
     P. Modify theme references to new dynamic resources
     Q. Create a custom skin
     R. Apply the custom theme to a Portal page

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XVII. Exploring Mobile Development with WebSphere Portal
A. Describe challenges of mobile development
B. Define multichannel development capabilities
C. Discuss HTML5 and CSS3 support
D. Review the Mobile Browser Simulator
E. Configure smartphone and tablet support features
F. Understand the Device Support features
G. Describe the artifacts created
H. Review Dojo Mobile
I. Understand Device classes and how to extend device support
J. Discuss Client Profile information (CC/PP)
K. Lab 18: Review Mobile development with WebSphere Portal
L. Explore the Mobile development features of Rational Application Developer 8.5
M. Review mobile theme development features