



WebSphere Portal 8 Development using Rational Application Developer 8.5

Custom Course Outline



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Course 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. In addition, Mobile development options for WebSphere Portal 8.0 are reviewed.

Prerequisites

Course attendees must have web development experience.

Duration

5 Days



Day 1

Lesson 1: What is WebSphere Portal?

- Discuss Applications Servers
- Discuss the Portal 8 features
- Understand the benefits of WebSphere Portal
- Understand Portal Pages and Portlet
- Describe Portal Branding (Themes and Skins high level)
- Describe WebSphere Content Management
- Understand how Portlets are deployed
- Review Portlet components
- Review WebSphere Portal Security and Authorization features
- Discuss Personalization Rules engine and Visibility Rules
- Review common WebSphere Portal architectures

Lab 1: Exploring the WebSphere Portal Environment

- Explore the command line scripts to start, stop, and determine the server status of the WebSphere Portal server
- Explore the WebSphere Portal Administration Console
- Create a URL Mapping to simplify WebSphere Portal Administration access
- Create a label, page, and URL from the WebSphere Portal Administration tools

Lesson 2: What is Rational Application Developer?

- Understand the Eclipse platform
- Discuss the Portal specific development features provided with RAD
- Discover how to configure the Portal development features and environment
- Discuss how to most efficiently configure the WebSphere Portal server for development purposes
- Discuss the enhancements to Portal development using Rational Application Developer 8.5
- Review the Portal Toolkit and mobile development enhancements

Lab 2: Configuring the Rational Application Developer Environment

- Add the WebSphere Portal Server to the Rational Application Developer servers view
- Review the WebSphere Portal server configuration settings and review deployment protocols and features



Lesson 3: What are Portlets?

- Define component technologies
- Review common Portlet concepts
- Describe the Portlet container
- Understand the advantages of Portlets
- Describe the different portlet specifications
- Understand the Portlet life-cycle (init, action, render, destroy)
- Understand Portlet modes (View, Edit, Help)
- Describe the Window States (Normal, Maximized, Minimized)
- Understand Portlet Sessions
- Describe the portlet artifacts
- Understand how Portlets are packaged
- Review Portlet Installation (WARs, EARs, Admin console, scripts)

Lab 3: Developing, deploying, and testing Portlets

- Create a new Portlet using the Rational Application Developer wizards and explore available features
- Deploy the Portlet using RAD
- Export the Portlet as a WAR (Optional)
- Install the WAR file via the WebSphere Portal Administration console (Optional)

Lesson 4: Understanding the JSR 286 API

- Understand the PortletRequest object
- Understand the PortletResponse object
- Review the Action, Rendering, Events, and Resource Serving
- Understand where the JSPs are stored
- Discuss Public Render Parameters
- Discuss Portlet Filters
- Discuss Resource Serving
- Understand Portlet Events
- Discuss Caching
- Review Portlet Resource Bundles

Lab 4: Discovering the JSR 286 Portlet API

- Create a JSR 286 Portlet Project and Portlet and use the wizard to add the View, Help, and Edit, Configure, and Edit Defaults modes
- Update the resource bundles and configure initialization parameters
- Examine the generated view JSP and create a custom Portlet JSP
- Examine the generated Portlet Java class
- Review the code



Day 2

Lesson 5: Explore the Portlet Tag Libraries

- Describe the Portlet Tag Library
- Understand how to define the Portlet TLD
- Understand the function of the defineObjects tag
- Describe the available JSP objects available
- Discuss the Portlet namespace and how to best define JavaScript functions and variables
- Learn how to load Portlet Preferences from Portlets
- Describe caching techniques
- Discuss the JSP EL
- Understand Best Practices and Techniques
- Explore common 3rd party tag libraries often used by Portlets

Lab 5: Exploring Portlet tag libraries

- Define the Portlet Tag libraries in JSPs
- Use the pre-defined Portlet objects
- Use Portlet Resource Bundles
- Create a renderURL and demonstrate the functionality
- Create an actionURL and demonstrate the functionality
- Create a resourceURL and demonstrate the functionality

Lesson 6: Processing Form Input with Portlets

- Discuss public render parameters
- Understand how to process Form input data from Portlets
- Discuss both Server-side and client-side validation techniques
- Demonstrate how to change the Portlet Window state
- Discuss multi-part form data processing
- Understand how to store Portlet session data

Lab 6: Processing form input with Portlets

- Create an HTML form and create the <portlet:actionURL/>
- Create several input parameters
- Process the input parameter values
- Implement Client-side and Server-side validation
- Implement error processing techniques



Lesson 7: Portlet Preferences and Configuration

- Discuss Portlet-managed modes
- Understand how to create initialization parameters
- Describe the PortletConfig object
- Understand the Edit, Edit_Defaults, and Config mode
- Review the PortletPreferences object

Lab 7: Exploring Portlet Preferences and Configuration

- Define Portlet default initialization parameters for a portlet
- Override the existing portlet configuration from both the configuration mode and edit defaults mode
- Create a copy of the portlet
- Demonstrate the differences between configuration settings



Day 3

Lesson 8: Exploring Interactive Portlet

- Describe inter-portlet communication techniques
- Describe publishing and consuming events
- Discuss event namespace definitions and usage
- Understand how to define publishing events
- Discuss Event processing annotations
- Understand public render parameters
- Understand how AJAX and Portlet interactions
- Discuss the differences between AJAX usage of Servlet and Portlet frameworks
- Discuss cookie usage

Lab 8: Developing, Configuring, and Testing Interactive Portlets

- Create Portlets to implement messaging via Portlet events
- Review how Portlet sessions can be used to exchange data
- Configure JSR 286 events
- Configure WebSphere Portal wiring

Lesson 9: Introduction to Spring 3 and Portlet Development

- Discuss how the Spring 3 libraries can be used by Portlets
- Discuss Portlet Spring MVC
- Understand how to create a Spring Portlet
- Describe the Spring Portlet artifacts
- Consider best practices for error handling, logging, package structure, etc.

Lab 9: Creating Spring 3 Based Portlets

- Create a Portlet Project to support Spring 3
- Import the Spring 3 libraries
- Create a Spring 3 based Portlet
- Review the Portlet artifacts as they relate to Spring 3
- Test the Spring 3 based portlet

Lesson 10: Understanding client-side aggregation

- Describe client-side aggregation
- Discuss the advantages of CSA and the improved user experience
- Describe how Portlet customization and personalization is handled
- Discuss how REST services are consumed
- Understand the drawbacks of CSA



Lesson 11: Understanding Resource Serving

- Understand resource URLs
- Describe the ResourceServingPortlet interface
- Describe caching levels of resources
- Understand how to implement REST based services
- Describe common data interchange formats
- Describe challenges of data encoding
- Understand how to serve resources
- Describe best practices when serving resources

Lab 11: Exploring Resource Serving Portlets

- Import an existing Spring 3.0 based portlet
- Import the PDF and XML resources
- Update the Spring View Controller and view.jsp to render the content and demonstrate Resource URLs
- Use a resourceURL to download JSON data



Day 4

Lesson 12: Using Dojo with Portlets

- Review the Rich Text Editor WYSIWYG features
- Understand Split design view
- Discuss Client-side capabilities
- Review the Dojo toolkit functionality
- Review common Dojo components

Lab 12: Using Dojo with Portlets

- Review Dojo functionality and includes
- Configure the Project facets to use the Dojo Facets
- Implement Dojo AJAX calls to consume JSON data

Lesson 13: Exploring the iWidget API

- Understand the differences between Client-side aggregation and Server-side aggregation
- Describe how Portlets and iWidget components behave based on aggregation type
- Discuss the components of iWidgets
- Review how iWidgets are personalized
- Discuss how iWidgets are deployed
- Describe iWidget Best Practices

Lab 13: Developing, Deploying and Testing iWidgets

- Create an iWidget using the RAD 8.5 wizards
- Explore the iWidget components
- Deploy the iWidget

Lesson 14: Understanding Portlet Filters

- Discuss the uses of Portlet Filters
- Understand the Portlet Filter lifecycle
- Compare Servlet and Portlet filters
- Understand Portlet Filter Types: ResourceFilter, RenderFilter, ActionFilter, EventFilter
- Write filter classes
- Add Portlet filter entries to the Portlet.xml
- Describe best practices



Lab 14: Developing, Deploying, and Testing Portlet Filters

- Create Portlet Action filter to log user access
- Create a Portlet Render filter to track analytics
- Export and Configure the Portlet filters
- Apply the Portlet Filters to an existing Portlet

Lesson 15: Understanding Portlet Services

- Describe the advantages of Portlet services
- Review available Portlet services
- Understand how Portlet services are created
- Review how Portlet Services are configured
- Discuss how to lookup Portlet services
- Understand the Portlet service life-cycle

Lab 15: Developing, Deploying and Testing Portlet Services

- Create a Portlet service implementation
- Package and Deploy the Portlet service
- Register the Portlet service
- Consume the new portlet service from a Portlet



Day 5

Lesson 16: Developing WebSphere Portal theme and skins

- Describe WebSphere Portal themes and skins
- Discuss the use of WebDAV
- Describe static and dynamic resources
- Understand Portal 8 styles
- Define theme CSS files
- Understand how to create a new Portal 8 theme
- Describe Dynamic content spots
- Understand how to customize navigation
- Discuss how to configure Portal theme modules
- Describe how to use jQuery in a Portal 8 theme
- Review common portal theme JSP tag libraries
- Understand best practices of theme development

Lab 16: Creating WebSphere Portal Themes

- Create a new WebSphere Portal 8 theme
- Customize the new theme
- Modify theme references to new dynamic resources
- Apply the custom theme to a Portal page and test

Lesson 17: Exploring Mobile Development with WebSphere Portal

- Describe challenges of mobile development
- Define multichannel development capabilities
- Discuss HTML5 and CSS3 support
- Review the Mobile Browser Simulator
- Configure smartphone and tablet support features
- Understand the Device Support features
- Describe the artifacts created
- Review Dojo Mobile
- Understand Device classes and how to extend device support
- Discuss Client Profile information (CC/PP)

Lab 17: Mobile Development and WebSphere Portal 8

- Review mobile theme features
- Review mobile theme development features

Course Review