



IBM Software Group

# IBM® Rational® Application Developer V6

## *Integrating Struts and JSF with Portlets*



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## Goals

- Discuss the frameworks to support Java™ Server Faces (JSF) components and Struts based applications within Portal
  - ▶ Highlight wizards in Rational Application Developer V6.0
- Learn the fundamentals of the Struts Portlet Framework (SPF) and JSF components supported in Portal
- Prerequisites: Knowledge of Web application development (Struts, JSF and portlet applications)

## Agenda

- Overview of portal, portlets, Struts and JSF
- Struts Portlet Framework
  - ▶ Portal Development Tools Support
- JSF Portlet Framework
  - ▶ Portal Development Tools Support
- Troubleshooting

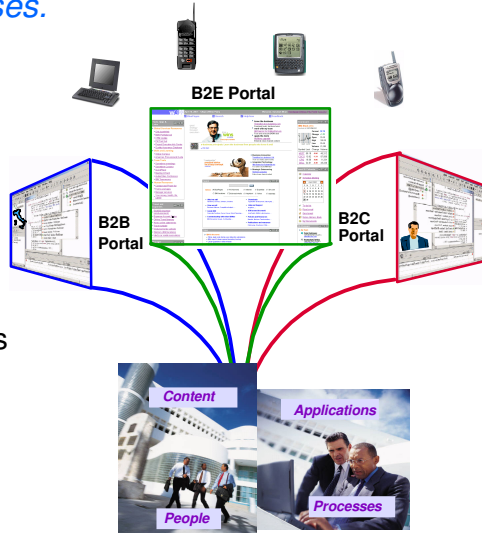
## Section

# *Overview*

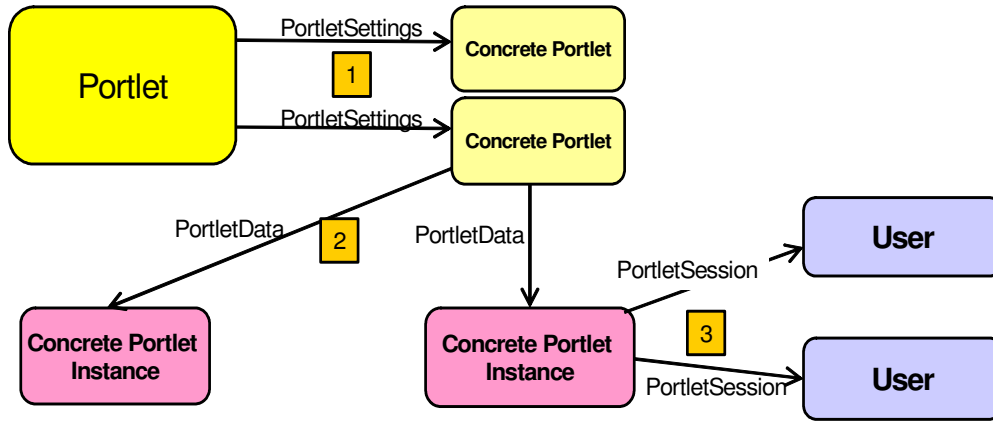
## Portal

*Delivers a single, universal point of access that is integrated, highly customizable, extensible and scalable to interact with key applications, content, people and business processes.*

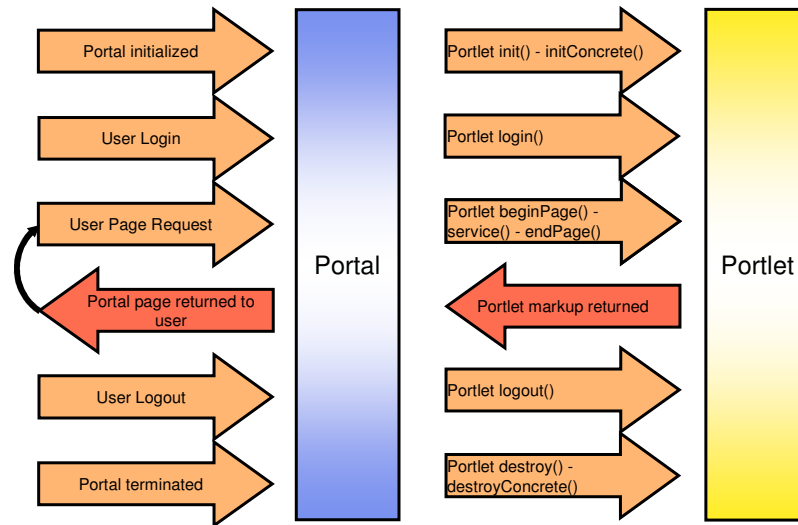
- Provides access to all internal applications and content
- Delivers a collaborative working environment
- Unified workplace – the new standard user interface
- Gives a personalized user interface
- Allows access through multiple devices – convenience and personalization
- Flexible programming framework, little change to existing Web application to make them “portal enabled”



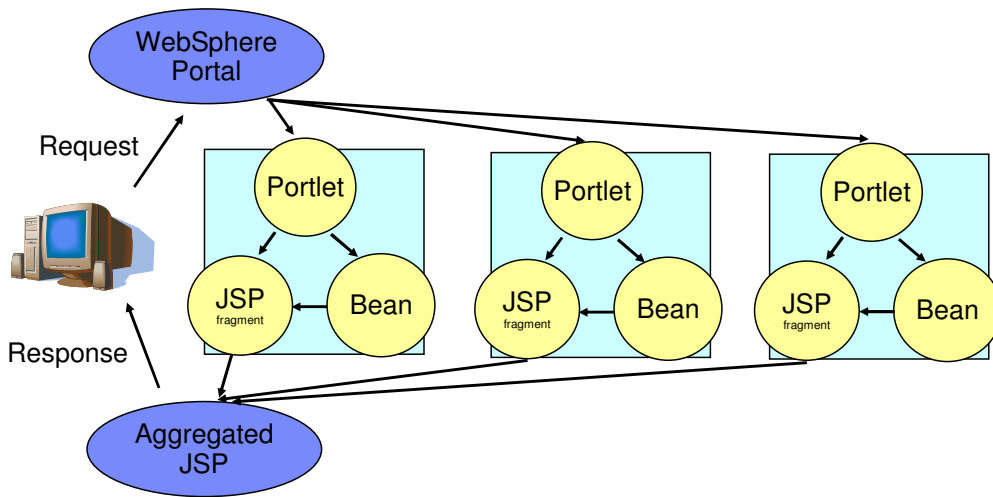
# Portlet Development: Manifestations of a Portlet



# Portlet Development: Portlet Life Cycle



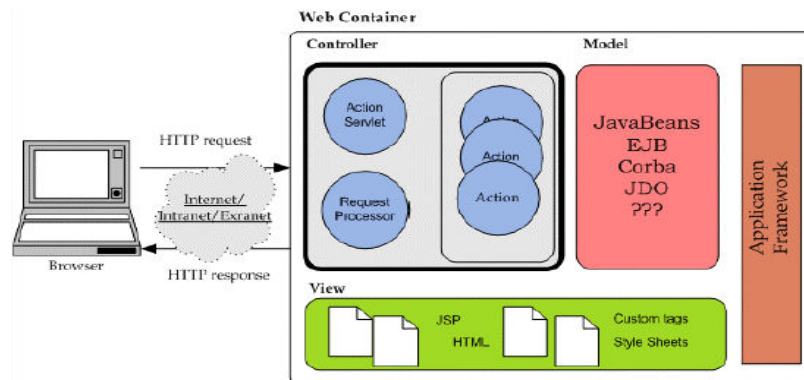
# Portal Model-View-Controller (MVC) Sample



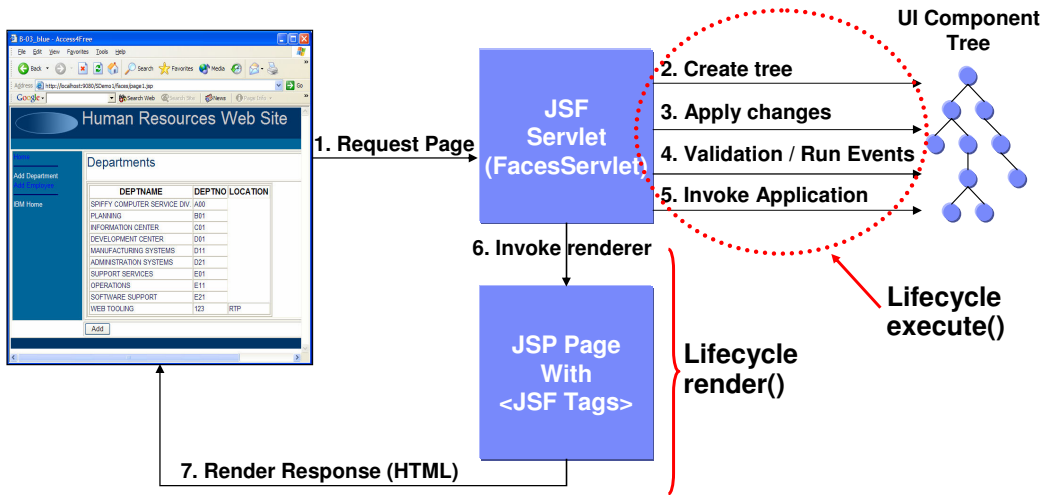


## Struts Overview

- Struts is a conceptual framework for developing Web applications
  - ▶ Variation of the classic Model-View-Controller (MVC) design pattern
- Contains a set of Java™ classes and JSP tag libraries
- See <http://jakarta.apache.org/struts/index.html> for more information



# JavaServer Faces (JSF) Overview



## Section

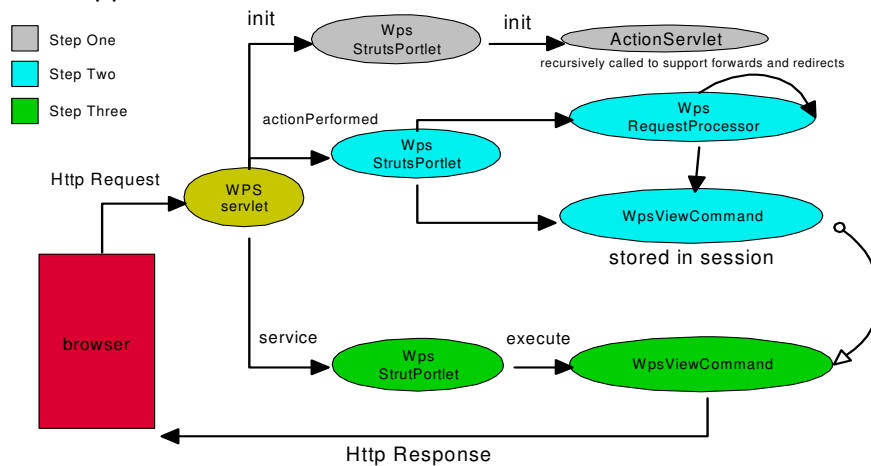
# ***Struts Portlet Framework***

## Struts in Portal

- Struts application in portal is similar to servlet based Struts application
  - ▶ WAR file contains all Struts JARs, JSPs, action and configuration files
  - ▶ WAR file in Portal contains additional files such as portal.xml and portal JAR files
- Key Differences between Struts and portal applications are
  - ▶ Portlet servlet must be configured as main servlet
  - ▶ Portlet actions processing is broken down into two phases
  - ▶ URIs under portal server have special format
  - ▶ Portal server does not support forwards or redirects
- Struts-Portal Framework allows you to run Struts based application in portal

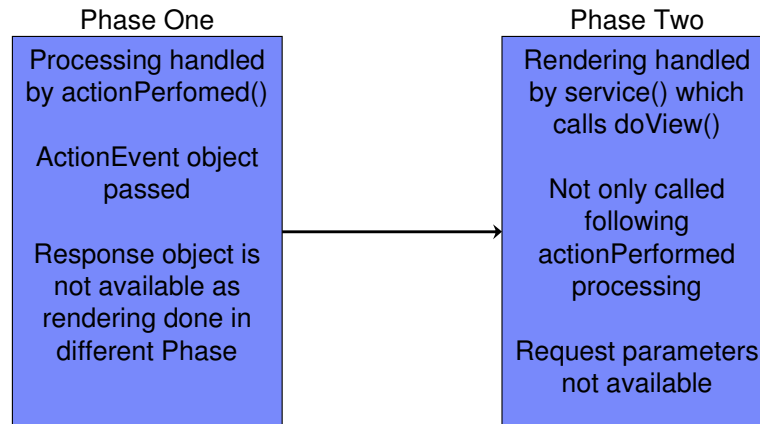
## Struts Portlet Framework

- Allows Struts applications to be deployed within WebSphere® Portal Server
- Samples provided to show how portal features can be incorporated in Struts applications



## Details: Two-Phase Processing

- Portlet processing is split between action processing and service method
  - Servlet only does processing and rendering from service() method



## Details: Struts Portlet URL and Mode Support

- **Struts actions**
  - ▶ Web Container recognizes servlet mapping for Struts actions in Servlet environment
  - ▶ Portal requires URIs created with Response.createURI
    - Struts action is passed to the portlet as a parameter
  - ▶ Provide implementation of Struts tags that create URIs: Form, Link
- **WpsStrutsPortlet matches Struts actions**
  - ▶ Uses struts-servlet-mapping to identify struts actions
  - ▶ Modifies request object so action appears to be the URL
- **Struts module support**
  - ▶ Configure ModuleSearchPath to include client attributes
    - Default value is markup first, then mode
  - ▶ Struts Portlet Framework will search for Struts modules on mode changes
  - ▶ Allows a separate Struts configuration for each mode

## Section

# ***Portal Development Tools: Struts Portlet***



## WebSphere Portal Server V5.0.2.2 Support

- WebSphere Portal Server V5.0.2.2 supports the following functionality for Struts portlets

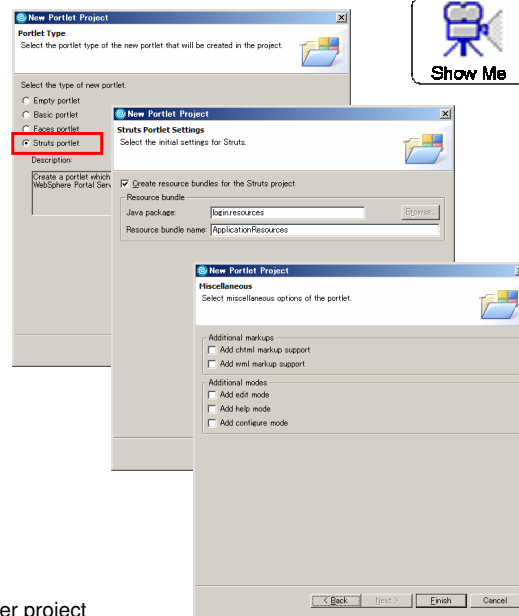
Portlet API	Framework	SDO for JDBC	Cooperative portlet using wiring	Cooperative portlet using Click-to-Action	Collaborative portlet (People Awareness)
IBM API	Struts	Prototype only	Yes	Yes	Yes
JSR 168	Struts	No Struts JSR 168 support in WebSphere Portal V5.0.2.2			



## Creating a Struts Portlet

- Struts Portlet wizard
  - ▶ Portlet settings
  - ▶ Web diagram creation
  - ▶ Resource bundle creation
  - ▶ Portlet modes
- Web Diagram Editor for creating portlet application flow
- Only IBM API is supported in V6.0
  - ▶ JSR 168 support is post-V6.0

\*Note: Portal Tools only allows one Struts portlet per project



## Additional Tool Support

- Action Mapping wizard
  - ▶ Supports the enhanced Struts Portlet Framework (SPF) action class (StrutsAction)
  - ▶ StrutsAction hides details that do not map well to WebSphere Portal
- Struts Configuration File wizard
  - ▶ Adds required <controller> section that specifies WpsRequestProcessor when creating configuration file



# Struts Portlet Development

Right-click on diagram to change module association – support for different markups and modes

Define flow (connections) and create files by invoking wizards

When realizing JSP pages – the New Portlet wizard allows you to choose Struts portlets (fragment)

When realizing an action - can choose Struts Portal action mapping

Insert nodes using drag-and-drop

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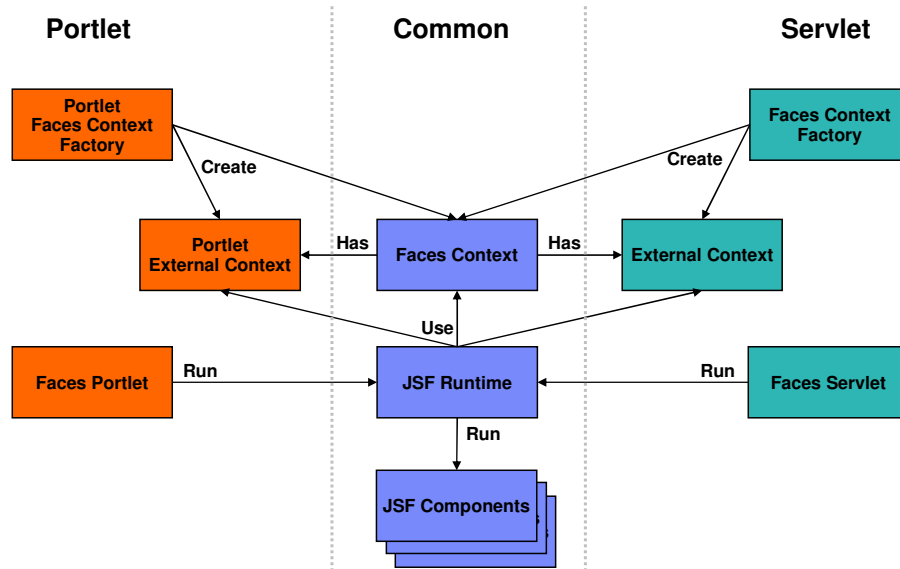
## Section

# *JSF Portlet Framework*

## JSF in Portal

- Create Faces Portlet through New Portlet Project or New Portlet wizards
  - ▶ Adding Faces portlet to portlet project adds support for JSF Framework to project
- JSF portlets share a common layer of functionality with Web applications implemented using JSF
- WPFacesGenericPortlet, instead of Faces servlet is provided for control
- JSF Portlet framework supports all navigation rules
  - ▶ Navigation will happen within the portlet window instead of entire page

# Faces Portlet Architecture



## Section

# *Portal Development Tools: JSF Portlet*



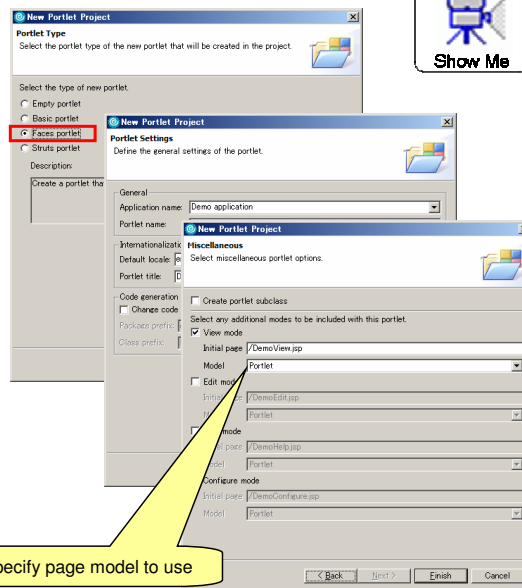
## WebSphere Portal Server V5.0.2.2 Support

- WebSphere Portal Server V5.0.2.2 supports the following functionality for Faces portlets

Portlet API	Framework	SDO for JDBC	Cooperative portlet using wiring	Cooperative portlet using Click-to-Action	Collaborative portlet (People Awareness)
IBM API	JSF	Prototype only	Yes	Yes	Yes
JSR 168	JSF		No	No	No

## Creating a Faces Portlet

- Faces Portlet wizard
  - ▶ Portlet settings
  - ▶ Portlet modes
  - ▶ Initial JSP page
  - ▶ Page model
    - Portlet (default)
    - Portlet with client-side data caching (SDO) – **“Prototype purposes only”**
- Web Diagram Editor can be used for JSF portlet navigation rules
- Supports creating both IBM API and JSR 168 Faces portlets



Specify page model to use

# Faces Portlet Development

Access Portlet API objects and define data sources to drag-and-drop into a page

Visual Editing

Quick Edit for Scripting

Insert components by drag-and-drop

Click-to-Action and People Awareness components available in Portlet drawer

First Name	Last Name	Business Phone	Country	Email
{firstName}	{lastName}	{businessPhone}	{country}	

## Section

# *Troubleshooting*

## Viewing Portal Log in Console

- Installation log file of Portal Test Environment
  - ▶ `INSTALL_ROOT\PortalUTE50\log\WpsInst.log`
- Runtime log files of Portal Test Environment
  - ▶ `INSTALL_ROOT\runtimes\portal_v50\log\wps_TIME_STAMP.log`
  - ▶ Option available in Server Configuration editor to redirect the portal server's log to the Console view

WebSphere Portal v5.0 Test Environment @ localhost

### Portal Options

**Server Configuration**

Enter settings for the WebSphere Portal configuration.

WebSphere Portal administrator

User ID:

Password:

Enable automatic login

User ID:

Password:

Enable base portlets for portal administration and customization

Enable multiple pages when deploying portlet projects

Enable console logging

Enable anonymous user access

Select option to redirect portal output to Console view

## Section

# *Summary and Reference*

## Summary

- Provided brief overview of the Portlet, Struts, and JSF technologies
- Struts Portlet Framework is a package that supports Struts applications in Portal
- JSF Portlet Framework gives developers the ability to use JSF components in Portal development
- Portal Tools wizards allow developers with Struts and JSF skills to easily create portlet applications using these frameworks

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