

Portal Toolkit for WebSphere Portal V4.1

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Agenda

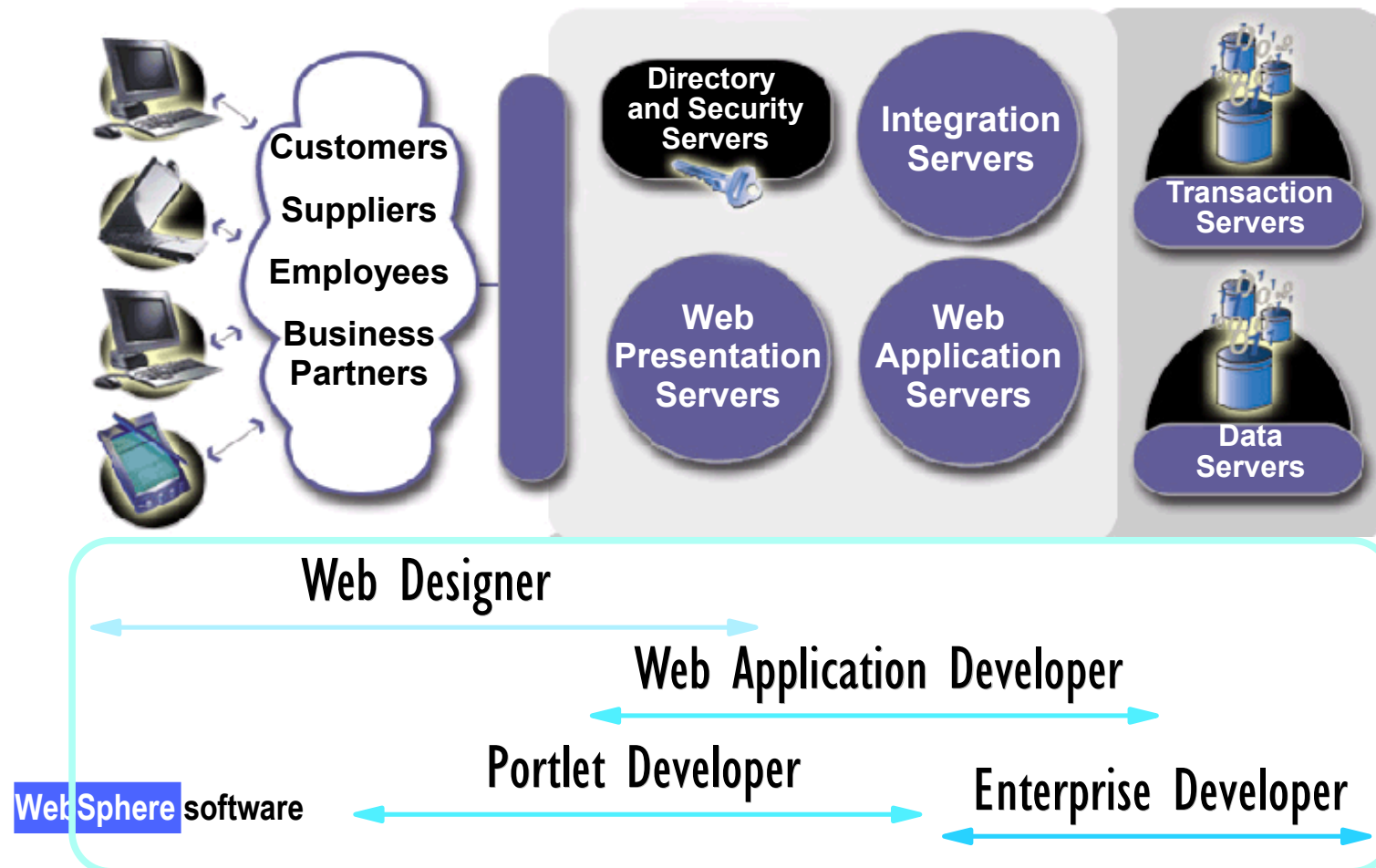
- Studio Family Overview
- Portal Toolkit
 - ▶ Developing Portlets
 - ▶ Debugging Portlets
 - ▶ Deploying Portlets
- Demo of Portal Toolkit
- Summary / Q & A

WebSphere Studio Family Overview

- WebSphere Studio provides best-of-breed **integrated** development support for developing:
 - J2EE Applications:
 - Web Services
 - XML Applications
 - WebSphere Applications
 - and more...
 - ...now including **Portlets**
- End-to-end unit testing for all of the above

WebSphere Studio Workbench

An open, integrated, personalized, extensible environment enabling multiple developer "Perspectives"



Portal Toolkit: Making It Easier....

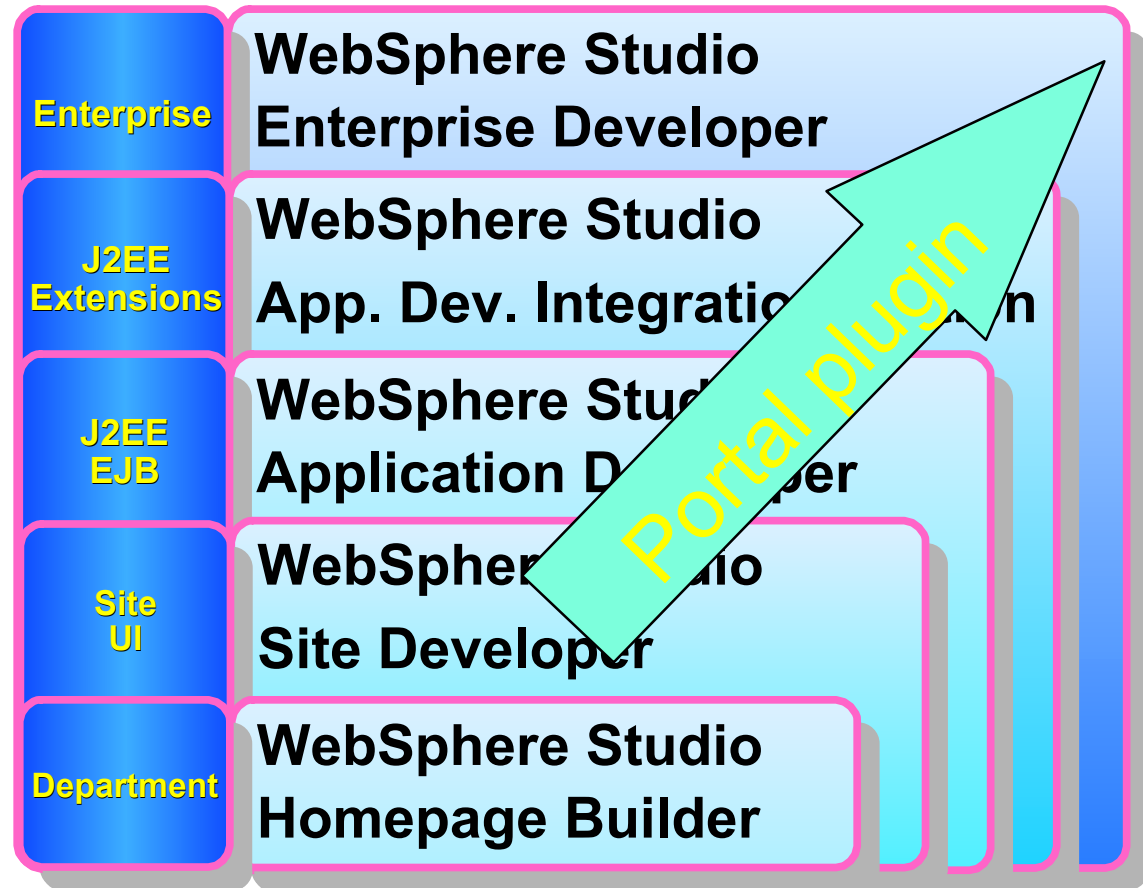
- Creates the portlet java and JSP source
- Creates the portlet directory tree
- Creates and completes the portlet application descriptor
- Packages the portlet application into a WAR file for deployment to the portal server
- Dynamically deploys portlet to the portal server
- Logs the user into the portal
- Displays the debug page in a browser with the portlets added to the page, and shows the portlet debugger perspective in the tools at the same time

WebSphere Everyplace Access Toolkit

- Has the same function as the portal toolkit for WEA V4.1
- In time will evolve to further support handheld and disconnected devices
- V4.2 will include additional samples that support WEA sync and notification API's

Portal Toolkit for WebSphere Studio

- Plugs into
 - WSSD Advanced
 - WSAD
- Designed to work on "higher levels"
 - Higher levels not tested or supported in first release
- Distributed
 - With Portal Offerings
 - From Web Download



Portal Toolkit for WebSphere Studio

- Enhancements to WS Studio Framework that provide a portlet interactive development environment (IDE)
- Includes capabilities to **create, test, debug and deploy** individual portlets and web content
 - ▶ **Portlet Perspective, Portlet Wizard** and **Base projects** to facilitate development of portlet based applications
 - ▶ Wizards and source editor for portlet and web application descriptor documents
 - ▶ Enhancement to **WSAD debugger** to support portlet applications and deploy portlets for debugging
 - ▶ **WAR File builder** to automate packaging of portlet applications to be deployed on WPS

"Old" Portlet Development

1. Create the portlet directory tree including the PORTLET-INF subdirectory
2. Create the portlet application descriptor: portlet.xml
 - ▶ manually edit xml to supply all portlet class names and configuration data
3. Manually create or edit each
 - ▶ Java portlet class
 - ▶ Java bean class
 - ▶ JavaServer Page
4. Run JAR command to package contents of portlet directory tree to a portlet application web archive file (PAR file)
5. Debug on WebSphere Portal Server...

"Old" Portlet Development - Test & Debug

6. Copy the portlet PAR file to the portal server
7. Login to the portal as an administrator
8. Switch to the portlet administration page
9. Browse for portlet PAR file
10. Install the portlet
11. Activate the portlet
12. Switch to the portal customizer
13. Add the portlet to a page
14. Save the page in the customizer
15. Switch to the page
16. Test portlet functionality

Return to step 3 on previous page
and repeat...

"New" Portlet Development

- WebSphere Studio now automates these tasks
 - ▶ Creates the portlet directory tree
 - ▶ Creates and completes the portlet application descriptor
 - ▶ Packages the portlet application into a WAR file for deployment to the portal server
 - ▶ Dynamically deploys portlet to the portal server
 - ▶ Logs the user into the portal
 - ▶ Displays the debug page in a browser with the portlets added to the page

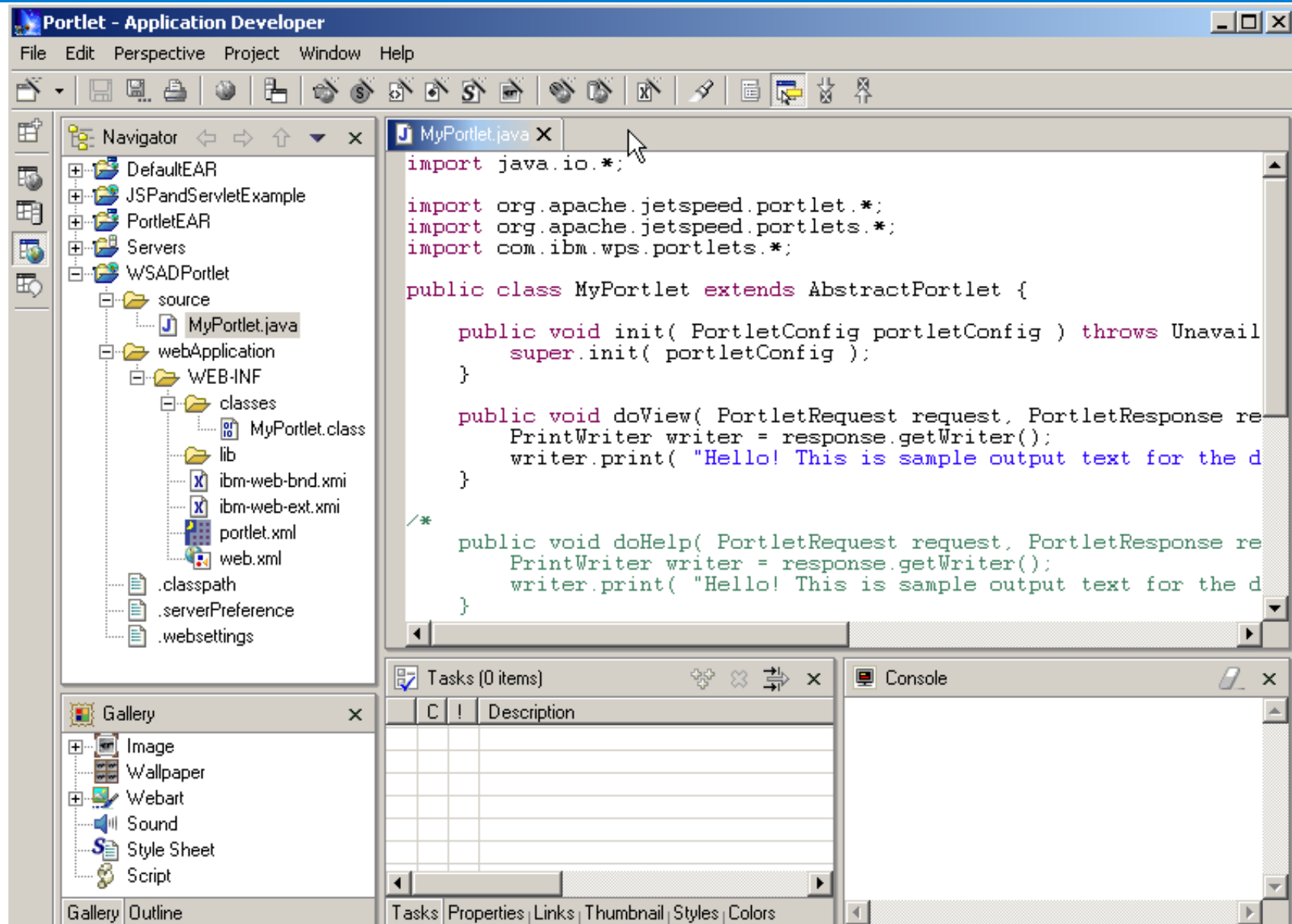
Developer can now focus on coding...
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features

"New" Portlet Development

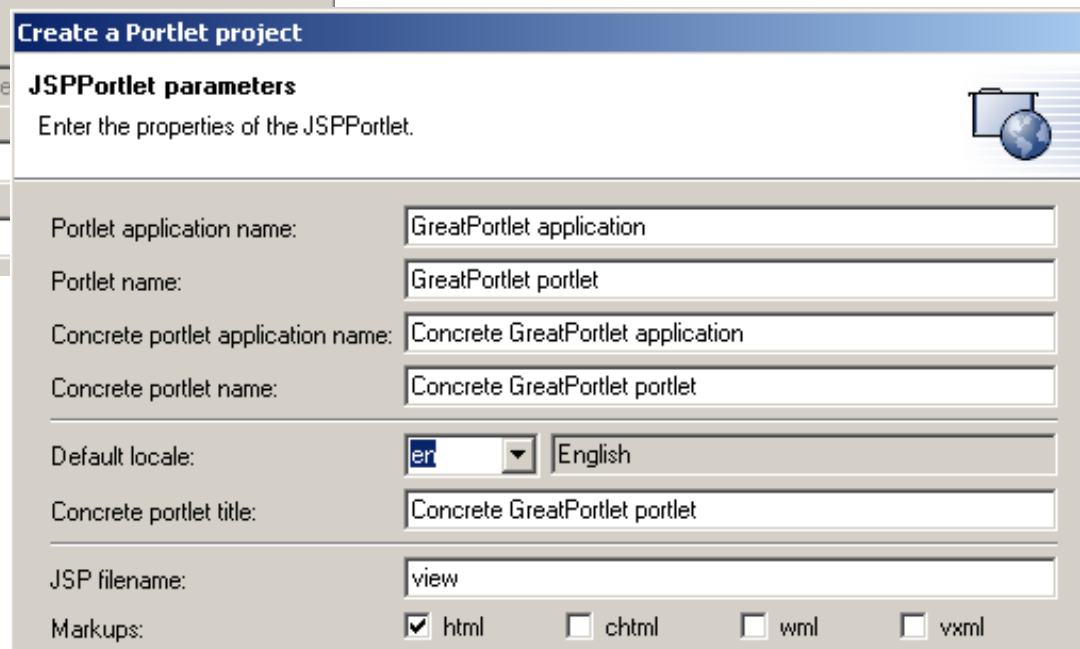
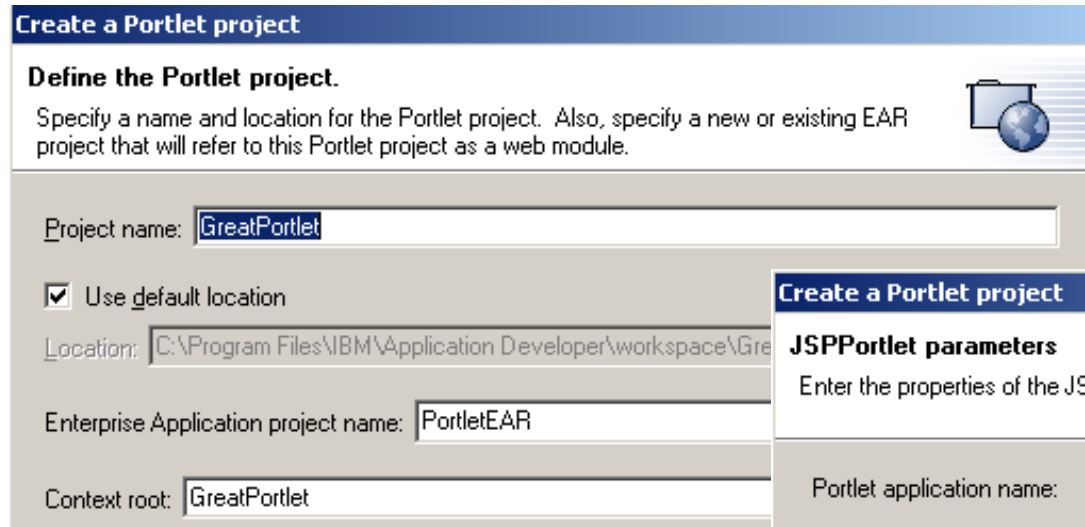
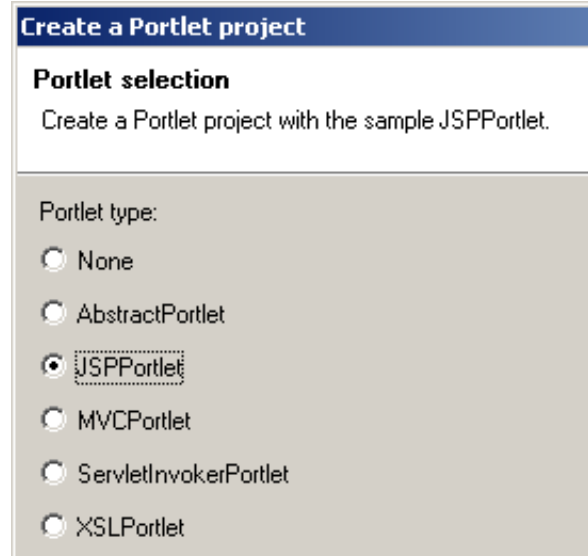
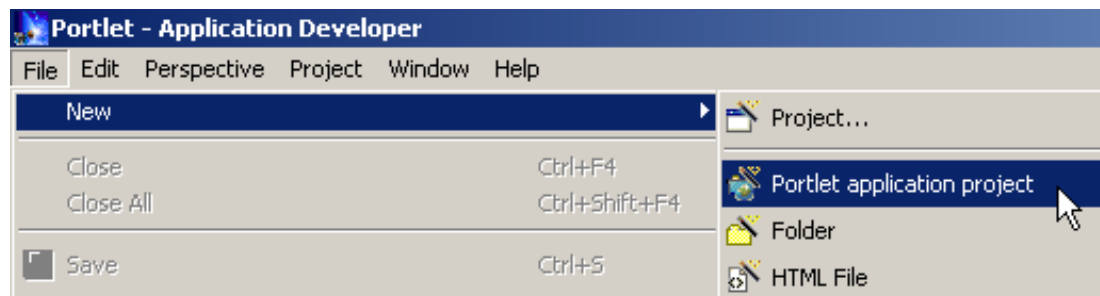
- From start to finish
 1. Select **portlet application sample** from Portal Toolkit Project list
 2. Complete **wizard** specifying portlet classes and configuration data
 3. Add custom logic to project supplied Java classes, beans, and JSP's
 4. Select **"Build Project"** from project menu
 5. Select **"Run On Server"** to deploy portlet application to portal server
 6. Test and debug portlet on the portal debug page

Also supports pre-packaged portlets

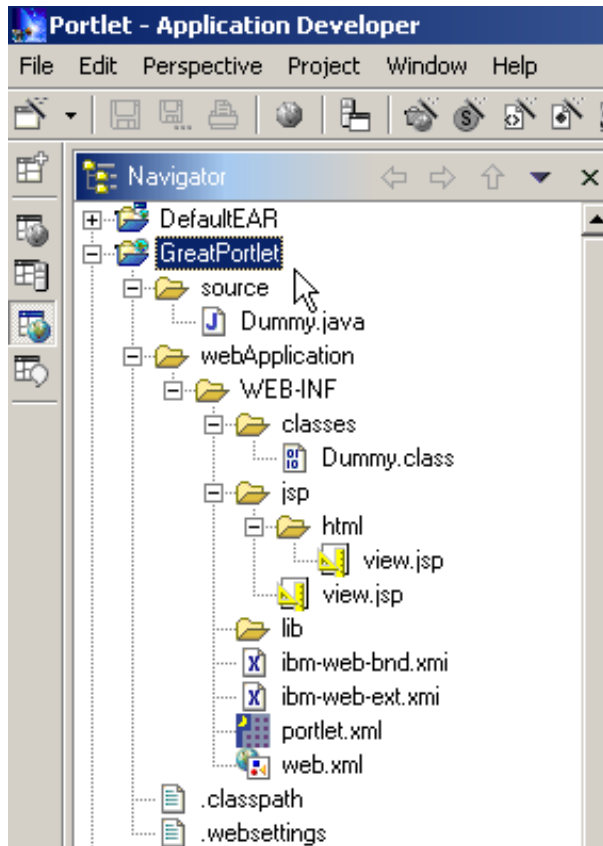
Portlet Perspective



Creating New Portlets



Your Complete Portlet is Ready



Includes:

- portlet.xml
- web.xml
- java source
- jsp

"Run on Server" to test & debug

"Export WAR" to build for deployment

Testing and Debugging Portlets

- "Build Project" from project menu
- "Run On Server" to deploy portlet application to portal server
- Test and debug portlet on the portal debug page

Developer can now focus on coding...
leveraging the Java IDE productivity
features

Testing and Debugging Portlets: Java Debugging

The screenshot displays an IDE interface for debugging a Java application. The top-left pane shows the **Debug** console with a tree view of threads. One thread, `Thread [Servlet Engine, Transports:10] (Suspended (breakpoint at line 42 in E`, is highlighted. The top-right pane shows the **Breakpoints** window, listing three breakpoints for `com.ibm.wps.portlets.bookmark.Bookmark` at lines 42, 47, and 57, all with the condition `doView(PortletRequest, PortletResponse)`. The middle-left pane shows the **Source View** of `Bookmark.java`, with a breakpoint set at line 42. The middle-right pane shows the **Outline** window, displaying the class structure for `com.ibm.wps.portlets.bookmark`, including methods like `init(PortletConfig)`, `warn(String)`, `doView(PortletRequest, PortletResponse)`, `doEdit(PortletRequest, PortletResponse)`, `makeList(String)`, and `actionPerformed(ActionEvent)`. The bottom pane shows the **Console** window with a log of server startup messages, including `[Servlet LOG]: SimpleFileServlet: init`, `[Servlet LOG]: InvokerServlet: init`, and `Server WebSphere Portal open for e-business`.

Breakpoints

Source View

Testing and Debugging Portlets: JSP Debugging

The screenshot displays an IDE interface for debugging a JSP application. The top menu bar includes File, Edit, Perspective, Project, Toolbar, Insert, Format, Page, Tools, Debug, Window, and Help. The main workspace is divided into several panels:

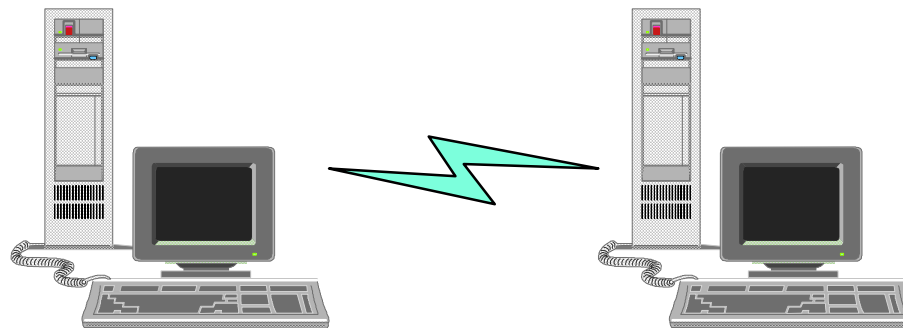
- Debug Console:** Shows a list of threads, with the current thread being `Thread [Servlet.Engine.Transports:10] (Suspended (breakpoint at line 89 in bmEdit.jsp))`. The stack trace includes `bmEdit.jsp_0.jspService(HttpServletRequest, HttpServletResponse) line: 89`.
- Breakpoints:** A window listing several breakpoints, including `bmEdit.jsp [line: 104]`, `bmEdit.jsp [line: 89]`, `bmEdit.jsp [line: 97]`, and `com.ibm.wps.portlets.bookmark.Bookmark [line: 42]`. This window is circled in blue and labeled "Breakpoints".
- Source View:** A window showing the source code of `bmEdit.jsp`. The code includes a loop starting at line 89: `for (int j = 0 ; j < bmEditList.size() ; j++) {`. This window is circled in black and labeled "Source View".
- Outline:** A window showing the DOM tree structure of the rendered page, including `TR`, `TD`, `jspscriptlet`, `TABLE`, `TBODY`, and `INPUT` elements.

Typical Portlet Developer Configuration

- Debugging on remote server only
- Software Requirements
 - WSSD Advanced 4.03 or WSAD 4.03
 - IBM WebSphere Application Server Advanced Single Server Edition 4.01 with fixpack 2 and e-fix PQ56615
- WebSphere Portal Version 4.1
 - Includes WAS AEs product and installation support
 - Developer install
 - DB2 (Fixpack 7) or Oracle

Developer Machine

WSSD or WSAD
Portal Toolkit



Test Server

WAS AEs
Portal 4.1
DB2/Oracle

For More Information . . .

- WebSphere Studio Information and Web Demo
 - www.ibm.com/software/ad/adstudio
- Application Developer Multimedia Tutorial
 - <http://webspherecentral.com/> (will move to <http://www-3.ibm.com/software/ad/studioappdev/library/#demos>)
- WebSphere Portal V4.1 Information is available on the Portal Website:
 - <http://www.ibm.com/websphere/portalfamily>
- Additional portlet programming information is available on IBM DeveloperWorks:
 - <http://www.developerworks.ibm.com>
- WebSphere Studio Developer Domain (WSDD)
 - www.ibm.com/websphere/developer/zones/studio/transition.html
 - "Transitioning to the New WebSphere Studio Development Products"
- Redbooks/Redpieces
 - Web Services Wizardry with WebSphere Studio Application Developer
- WebSphere Studio Partner Program
 - www.ibm.com/partnerworld
- Education
 - <http://www.ibm.com/software/ad/studioappdev/education>
- Eclipse
 - www.eclipse.org

