

Oracle® Fusion Middleware

Portal Development Guide for Oracle WebLogic Portal

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Preface

This guide explains how to develop and manage portals through all phases of the portal life cycle. These phases include architecture, development, staging, and production.

Audience

This document is intended for both developers and portal administrators. Developers typically use Oracle Enterprise Pack for Eclipse (OEPE) to develop portals and portal components. Administrators use the Portal Administration Console to create, assemble, and manage portal desktops.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

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Related Documents

For more information, see the following documents in the WebLogic Portal documentation set:

- *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*
- *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*
- *Oracle Fusion Middleware Tutorials for Oracle WebLogic Portal*

Conventions

The following text conventions are used in this document:

| Convention | Meaning |
|-------------------|--|
| boldface | Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary. |
| <i>italic</i> | Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values. |
| monospace | Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter. |

Part I

Architecture

During the architecture phase, you design and plan the configuration of your portal. For example, you can create a detailed specification outlining the requirements for your portal, the specific portlets you require, where those portlets will be hosted, and how they will communicate and interact with one another. You might also consider the deployment strategy for your portal. Security is another consideration for the portal architect.

Part I contains the following chapter:

- [Chapter 1, "Introduction to Portals"](#)
- [Chapter 2, "Planning Your Portal"](#)

Introduction to Portals

This chapter introduces Oracle WebLogic Portal concepts and describes how the content of this guide relates to the portal life cycle.

This chapter contains the following sections:

- [Section 1.1, "What is a Portal?"](#)
- [Section 1.2, "What is the Portal Framework?"](#)
- [Section 1.3, "Portal Development and the Portal Life Cycle"](#)
- [Section 1.4, "Getting Started"](#)

1.1 What is a Portal?

A portal represents a web site that provides a single point of access to applications and information.

From an end user perspective, a portal is a web site with pages that are organized by tabs or some other form of navigation. Each page contains a nesting of sub-pages, or one or more portlets—individual windows that display anything from static HTML content to complex web services. A page can contain multiple portlets, giving users access to different information and tools in a single place. Users can also customize their view of a portal by adding their own pages, adding portlets of their choosing, and changing the Look And Feel of the interface.

Technically speaking, a portal is a container of resources and functionality that can be made available to end users. These portal views, which are called desktops in WebLogic Portal, provide the uniform resource location (URL) that users access. A portal presents diverse content and applications to users through a consistent, unified web-based interface. Portal administrators and users can customize portals, and content can be presented based on user preferences or rule-based personalization. Each portal is associated with a web application that contains all of the resources required to run portals on the web.

Portals provide the following benefits to the user:

- **Aggregation** – The user can go to a single place for all content and applications.
- **Customization** – The preferences for a user determine how the portal looks and feels.
- **Personalization** – The user can obtain content that is specific to their interests and needs.
- **Organization** – The user can arrange the content and applications to make better sense of the information.

- **Integration** – The user can work with multiple applications and content sources in a unified fashion.

Portals typically include the following features and benefits:

- **Search** – Enterprise and web-based search facilities
- **Content Management** – Creation, management, and delivery of content
- **Content Repurposing** – Including content from multiple disparate data sources
- Portals optionally include the following features and benefits:
 - **Workflow** – Business process management
 - **Single Sign-On** – Allows users to log on once for all applications within the portal

WebLogic Portal supports development of portals through Oracle Enterprise Pack for Eclipse, which is a client-based tool. You can also develop portals without Oracle Enterprise Pack for Eclipse through coding in any tool of choice such as JBuilder, vi or Emacs. Portals can be written in Java or JSP, and can include JavaScript for client-side operations. Although you can create portals outside of Oracle Enterprise Pack for Eclipse, to realize the full development-time productivity gains afforded to the WebLogic Portal customer, use Oracle Enterprise Pack for Eclipse as the portal and portlet development platform.

After you create the parts of a portal using Oracle Enterprise Pack for Eclipse, you assemble it into a desktop using the WebLogic Portal Administration Console. From an administrative standpoint, a portal is a *container* that defines a portal application. When you create a new portal using the Administration Console, you are really creating an empty portal to hold different versions of the portal (desktops) that can be targeted to specific users. A portal can contain one or more desktops, or views, of a portal. It is the desktops to which you add the portal resources and navigation such as books, pages, and portlets that make a dynamic portal.

Each portal is associated with a web application that contains all of the resources required to run portals on the web.

1.2 What is the Portal Framework?

The portal framework is the portion of WebLogic Portal that is responsible for the rendering and customization of the portal.

The portal framework turns a portal that you develop in Oracle Enterprise Pack for Eclipse into the HTML page that desktop visitors see in a browser. When you are familiar with the portal framework tools provided in WebLogic Portal, you can look at a rendered portal in a browser and understand which pieces of the underlying framework you need to modify to obtain the results you want.

1.3 Portal Development and the Portal Life Cycle

The creation and management of a portal flows through a portal life cycle. The portal life cycle contains four phases:

- Architecture
- Development
- Staging
- Production

The tasks described in this guide are organized according to the portal life cycle, which includes best practices and sequences for creating and updating portals. For more information about the portal life cycle, refer to the *Oracle Fusion Middleware Overview for Oracle WebLogic Portal*.

1.3.1 Architecture

During the architecture phase, you design and plan the configuration of your portal. For example, you can create a detailed specification outlining the requirements for your portal, the specific portlets you require, where those portlets will be hosted, and how they will communicate and interact with one another. You might also consider the deployment strategy for your portal. Security is another consideration for the portal architect.

This chapter describes tasks within the Architecture phase:

- [Chapter 2, "Planning Your Portal"](#)

1.3.2 Development

Developers use Oracle Enterprise Pack for Eclipse to create portals, portlets, pages, and books. During development, you can implement data transfer and interportlet communication strategies and consider the security of the components.

In the development stage, careful attention to best practices is crucial. Wherever possible, this guide includes descriptions and instructions for adhering to these best practices.

The chapters describing tasks within the Development phase include:

- [Chapter 3, "Understanding Portal Development"](#)
- [Chapter 4, "Setting up Your Portal Development Environment"](#)
- [Chapter 5, "Integrating Existing Web Applications into WebLogic Portal"](#)
- [Chapter 7, "User Interface Development with Look And Feel Features"](#)
- [Chapter 8, "Developing Portals Using Oracle Enterprise Pack for Eclipse"](#)
- [Chapter 11, "Enabling Visitor Tools"](#)
- [Chapter 12, "Creating Portals for Multiple Device Types"](#)
- [Chapter 13, "Designing Portals for Optimal Performance"](#)

1.3.3 Staging

Oracle recommends that you deploy your portal to a staging environment where it can be assembled and tested before going live. In the staging environment, you use the WebLogic Portal Administration Console to assemble and configure desktops. You also test your portal in a staging environment before propagating it to a live production system. In the testing aspect of the staging phase, there is tight iteration between staging and development until the application is ready to be released.

The chapters describing tasks within the Staging phase include:

- [Chapter 15, "Managing Portal Desktops"](#)
- [Chapter 16, "Deploying Portals to Production"](#)

1.3.4 Production

A production portal is live and available to end users. A portal in production can be modified by administrators using the WebLogic Portal Administration Console and by users using Visitor Tools. For instance, an administrator might add additional portlets to a portal or reconfigure the contents of a portal.

The chapter describing tasks within the Production phase is:

- [Chapter 17, "Managing Portals in Production"](#)

1.4 Getting Started

This section describes the basic prerequisites to using this guide and lists guides containing related information and topics.

1.4.1 Prerequisites

In general, this guide assumes that you have performed the following prerequisite tasks before you attempt to use this guide to develop portlets:

- Review the [Section 1.4.2, "Related Guides"](#) and become familiar with the basic operation of the tools used to create portals, portlets, and desktops,
- Review the Oracle Enterprise Pack for Eclipse tutorials and documentation to become familiar with the Eclipse-based development environment and the recommended project hierarchy.
- Complete *Oracle Fusion Middleware Tutorials for Oracle WebLogic Portal*.

1.4.2 Related Guides

Oracle recommends that you review the following guides:

- *Oracle Fusion Middleware Overview for Oracle WebLogic Portal*
- *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*

Whenever possible, this guide includes cross references to material in related guides.

Planning Your Portal

Proper planning is essential to portal development. While bypassing planning and moving straight to development might reap short-term benefits in development speed, your projects may suffer from confusion and inconsistency, have poor scalability and performance, and require more time to manage.

The planning and design tasks that mark the architecture phase occur at multiple levels: the domain and enterprise application, the web application, and the individual WebLogic Portal feature areas.

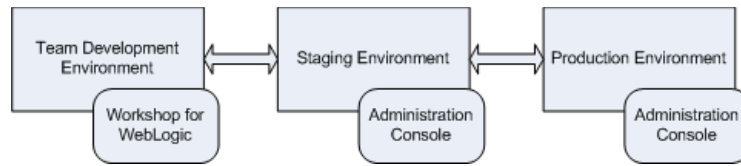
Global inter-portal planning information is provided in the *Oracle Fusion Middleware Overview for Oracle WebLogic Portal*, which summarizes the types of issues to consider in the architecture phase at all levels. The various WebLogic Portal feature guides describe planning issues in detail for each feature area.

This chapter includes the following sections:

- [Section 2.1, "Production Operations \(Propagation and Deployment\)"](#)
- [Section 2.2, "Portal Development in a Distributed Portal Team"](#)
- [Section 2.3, "Federated Portals"](#)
- [Section 2.4, "Security"](#)
- [Section 2.5, "Content Management"](#)
- [Section 2.6, "Interaction Management"](#)
- [Section 2.7, "Performance"](#)

2.1 Production Operations (Propagation and Deployment)

Production operations encompasses the tools, procedures, methodologies, and best practices that provide the backbone for managing the portal life cycle, from portal development to staging and testing to live production environments. As [Figure 2-1](#) shows, portals are typically developed in a *team development environment* by developers using Oracle Enterprise Pack for Eclipse. Portal components are then moved to a *staging environment*, where portal administrators use the WebLogic Portal Administration Console to create desktops, add entitlements, set up content repositories, and perform testing. The *production environment* is the live environment, where users access and interact with portal applications. The arrows between environments indicate that you can move portals and portal resources back and forth between each of these environments using utilities provided by Oracle. WebLogic Portal Utilities such as the WebLogic Portal propagation tools allow you to easily and reliably move and merge changes between environments.

Figure 2–1 Typical WebLogic Portal Environments

Just as you consider the architecture of a network or a software system, also consider and carefully plan how you will address production operations for your portal system. It is important to consider your particular portal system configuration, how your development team is organized, how you will test and configure portals, how your server is configured, and how you plan to manage the life cycle of your portal applications.

The *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal* describes the specific methodologies, tools, and best practices to help you achieve the goal of creating solid, manageable environments for portal development, staging, and production.

2.2 Portal Development in a Distributed Portal Team

If you will be creating portals within an environment that includes a remote (distributed) development team, you must carefully plan your implementation. Considerations for team development include:

- **Use of shared resources** – You share common portlets, such as the login portlet.
- **Sharing a common domain** – Several techniques exist for sharing a common domain among team members with different Oracle home directories.
- **Integrating remotely developed portlets into the portal** – Settings that are common to the portal application must match across the entire development project.

Team development of a WebLogic Portal web site revolves around well-designed source control and a correctly configured shared domain for development. For detailed instructions on setting up your development environment, refer to the Team Development chapter of the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

2.3 Federated Portals

A federated portal is a portal that includes remotely distributed resources, such as remote portlets. These remote resources are collected and brought together at runtime to a portal application called a consumer, which presents the federated portal to end users.

To implement a federated portal environment, you need to make decisions about how to organize your applications. For example, rather than bundling all of a portal's portlets into a single application, you can deploy portlets in separate web applications running on remote systems while the federated portal consumes them using WSRP. Because the federated portal is decoupled from its portlets, you do not need to redeploy the portal every time a portlet changes. For most WebLogic Portal projects, this decoupling represents an immediate and significant savings in time and money. You also might find it useful in some situations to federate a portal within the same server.

The *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal* provides detailed instructions on how to set up a federated portal environment.

2.4 Security

You can control access to portlet resources for two categories of users:

- **Portal visitors** – You control access to *portal resources using visitor entitlements*. Visitor access is determined based on visitor entitlement roles.
- **Portal administrators** – You control *portal resource management capabilities using delegated administration*. Administrative access is determined based on delegated administration roles.

During the Architecture phase, you plan how to organize security policies and roles, and how that fits into your overall security strategy. For an overall look at managing security for your portal environment, refer to the *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal*. Recommendations for security in WSRP-enabled environments are contained in the *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

2.5 Content Management

WebLogic Portal's content management system allows you to store content, track its progress, and incorporate content in your portal applications. It provides an easy integration between creating content and delivering that content to your users. Content creators can use WebLogic Portal's repositories to create content and portal developers use the content API and JSP tools to deliver content to portal visitors.

You can use either a WLP repository or a third-party repository with your portal. Some third-party content management vendors have built integrations (Content Service Provider Implementations or SPIs) that allow you to connect third-party repositories to the Virtual Content Repository. If you are using a third-party repository from a vendor that has not written an implementation for the WLP Virtual Content Repository, you can write your own using Oracle's Service Provider Interface (SPI).

For detailed information on managing the content for your portal, refer to the *Oracle Fusion Middleware Content Management Guide for Oracle WebLogic Portal*.

2.6 Interaction Management

You use Oracle WebLogic Portal's Interaction Management features to control and enhance portal visitor interactions with your portal application. You can set up personalized content that is targeted to specific users or audiences. You can guide users through a process (such as signing up for employee benefits or shopping online) that takes them to different locations based on their personal preferences or characteristics. You can even record the path users take through your portal to gauge the effectiveness of the portal, its design, or your process flows.

Developing Interaction Management features involves several interdependent tasks. For example, if you want to target users with personalized content in an ad campaign, you have to add content to the WLP Virtual Content Repository, create placeholders that display the content, set up properties (such as user profile or session properties) that are used to define the conditions under which users will be targeted with campaign content, and finally, create the campaign.

For detailed instructions, refer to the *Oracle Fusion Middleware Interaction Management Guide for Oracle WebLogic Portal*.

2.7 Performance

Try to plan for good performance within your portal architecture to minimize the fine-tuning that is required in a production environment. Many performance issues can be resolved and significant performance improvement can be realized by making just a few critical design decisions.

Here are some examples of performance optimizations that you can plan into your overall portal strategy:

- Enable control tree optimization.
- Use entitlements judiciously; too many can impact performance. Avoid the temptation of granting a different role to every user. Instead, use WebLogic Portal's personalization capabilities to focus the user experience.
- If your portal is small or relies only on static resources, you might experience some performance boost by using a file-based portal rather than a streaming portal.
- If you are using page flows in your portal, ensure their session footprint is optimized to deliver the best performance. Page Flows are a feature of Apache Beehive, which is an optional framework that you can integrate with WLP. See [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

Plan performance optimizations before you begin developing your portal so that you can implement any prerequisites that are required. For detailed instructions on developing a high-performance portal, refer to [Chapter 13, "Designing Portals for Optimal Performance."](#) For overall WebLogic Portal performance recommendations that you can implement in a production environment, refer to the *Performance Tuning Guide*, which will be available in a future documentation release.

2.8 Portals and Mobile Devices

WebLogic Portal can provide specific portal views based on device and browser detection, allowing a single portal application to serve content to diverse browsers and devices. The portal's campaign and personalization features can also detect device types, directing users to device- or channel-specific business processes and content (or restrict access). Device specific content operates in tandem with the portal user interface to provide device-specific views of applications.

For instructions on how to implement your portal for use on mobile devices, refer to [Chapter 12, "Creating Portals for Multiple Device Types."](#)

Part II

Development

Developers use Oracle Enterprise Pack for Eclipse to create portals, portlets, pages, and books. During development, you can implement data transfer and interportlet communication strategies and consider the security of the components. In the development stage, careful attention to best practices is crucial. Wherever possible, this guide includes descriptions and instructions for adhering to these best practices.

Part II contains the following chapters:

- [Chapter 3, "Understanding Portal Development"](#)
- [Chapter 4, "Setting up Your Portal Development Environment"](#)
- [Chapter 5, "Integrating Existing Web Applications into WebLogic Portal"](#)
- [Chapter 6, "Integrating WebLogic Portal into Existing Web Applications"](#)
- [Chapter 7, "User Interface Development with Look And Feel Features"](#)
- [Chapter 8, "Developing Portals Using Oracle Enterprise Pack for Eclipse"](#)
- [Chapter 9, "Using the Dynamic Visitor Tools"](#)
- [Chapter 10, "Advanced DVT Development"](#)
- [Chapter 11, "Enabling Visitor Tools"](#)
- [Chapter 12, "Creating Portals for Multiple Device Types"](#)
- [Chapter 13, "Designing Portals for Optimal Performance"](#)
- [Chapter 14, "Obtaining Debug Information"](#)

Understanding Portal Development

This chapter provides conceptual and reference information that you might find useful as you begin to develop portals.

This chapter contains the following sections:

- [Section 3.1, "Portal Components"](#)
- [Section 3.2, "Portal Component Hierarchy"](#)
- [Section 3.3, "Portal Development Environment in Oracle Enterprise Pack for Eclipse"](#)
- [Section 3.4, "Web Application Frameworks"](#)
- [Section 3.5, "WebLogic Portal and Shared J2EE Libraries"](#)
- [Section 3.6, "File-Based Portals and Streaming Portals"](#)
- [Section 3.7, "Java Controls in Portals"](#)
- [Section 3.8, "JSP Tags in Portals"](#)
- [Section 3.9, "Asynchronous Rendering"](#)
- [Section 3.10, "Backing Files"](#)
- [Section 3.11, "HTTP Session Sharing"](#)

3.1 Portal Components

When you use Oracle Enterprise Pack for Eclipse to develop a portal, the portal definition exists as a single XML file. Oracle Enterprise Pack for Eclipse creates the XML file automatically as you build a portal using the editor.

The portal file contains all the components that make up that particular instance of the portal, such as books, pages, portlets, and look and feel components.

Many components have a hierarchical relationship to each other. For example, a book contains pages and pages contain portlets. [Figure 3-1](#) shows the relationships among the components in a portal.

- **Desktop** - A desktop provides an audience-specific view of portal components. It contains the portal header, footer, and body. The body contains the bulk of the portal content: books, pages, portlets, and look and feel elements. A portal can support one or more desktops. After a portal administrator sets entitlements on the desktop and makes it ready for public consumption, the desktop is the view of the portal accessed by end users. From there, users can configure their own views through customization of the desktop, if you enabled this feature.

- **Shell** - The desktop's header and footer, controlled by a portal shell (.shell file), are the areas that are typically above and below the main body. These areas usually display elements such as personalized content, banner graphics, legal notices, and related links.
- **Book** - A book is a component that provides high-level content organization and navigation. Books contains pages or other books, providing a mechanism for hierarchical nesting of pages and content.
- **Page** - Pages contain the portlets that display the actual portal content. Pages can also contain books.
- **Menu** - Menus are optional components that are loosely coupled to books and pages. A menu is responsible for displaying some type of navigation component, whether it is a set of tabs, a set of links, or a tree structure. WebLogic Portal provides two types of menus: single-level and multi-level. A single-level menu provides navigation (for example, a row of tabs) for the book's immediate pages and child books; a multi-level menu provides a hierarchical menu for all the books and pages contained within a book.
- **Layout and Placeholder** - Layouts and placeholders (not to be confused with personalization placeholders) work together to structure the way portlets and books are displayed on a page. A layout is a combination of HTML tags (DIVs, SPANs, and so on) and CSS styling used by a page to determine the physical locations of portlets on the page. Administrators and users can choose different available layouts for pages. Placeholders are the individual cells in a layout in which portlets are placed. WebLogic Portal ships with some predefined layouts, and you can also create your own custom layouts.
- **Portlet** - Portlets are the windows that surface your applications, information, and business processes. The applications surfaced in portlets can be HTML pages, JSP files, Java Server Faces (JSF) applications, Java (JSR 168) applications, others. Optionally, you can create portlets from Apache Struts and Java Page Flow applications. For detailed information about developing portlets for WebLogic Portal, refer to the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

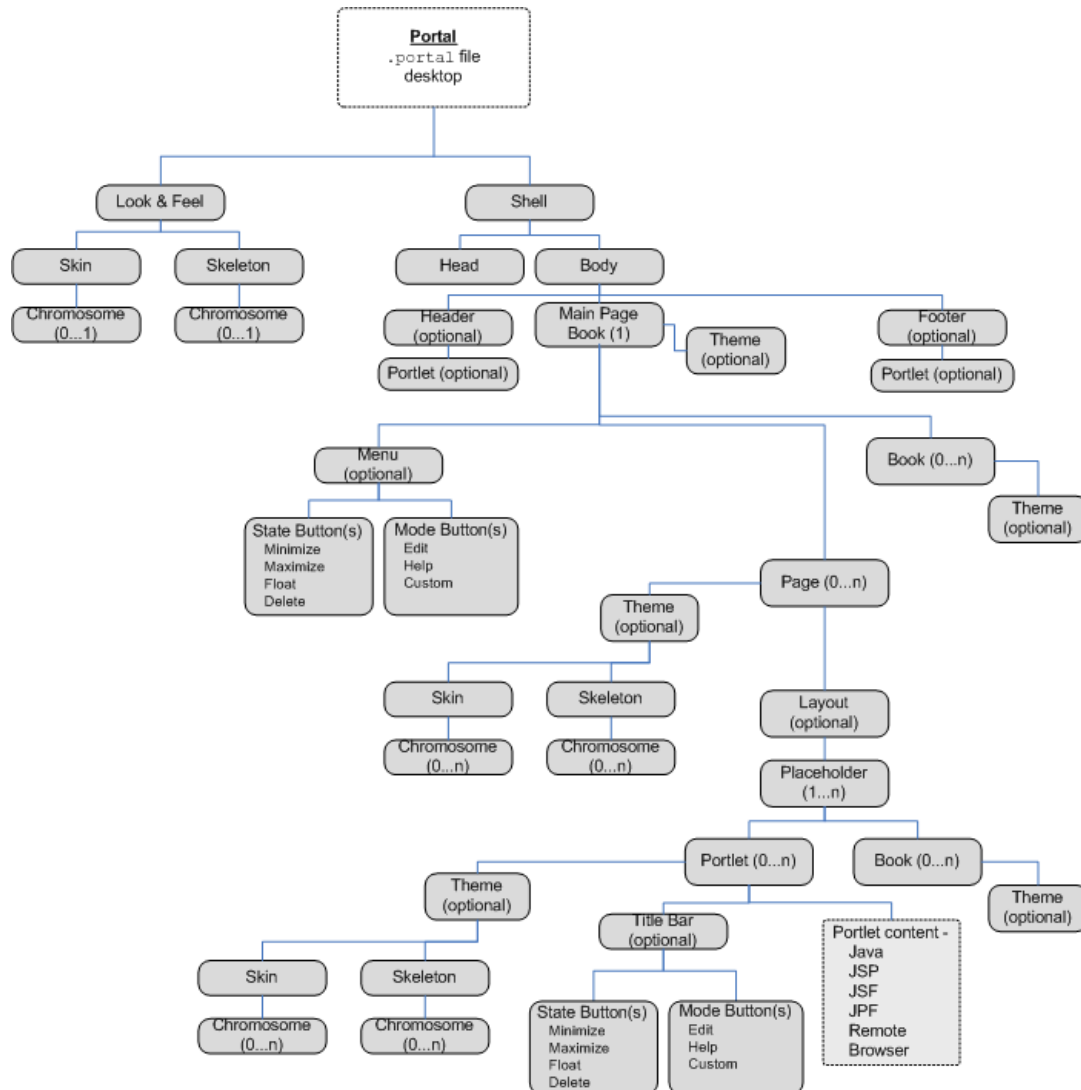
Note: Page Flows are a feature of Apache Beehive, which is an optional framework that you can integrate with WLP. Apache Struts is also an optional framework that you can integrate with WLP. See "Apache Beehive and Apache Struts Supported Configurations" in the *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.

3.2 Portal Component Hierarchy

Whether you are building portal resources and templates in Oracle Enterprise Pack for Eclipse or creating and administering portals with the WebLogic Portal Administration Console, you work with individual components that are then unified by the portal framework.

Figure 3–1 illustrates the flexibility and extensibility of the WebLogic Portal architecture. In the figure, the indicator (0...1) means 0 or 1, (1...n) means one or more, and (0...n) means zero or more. For example, a portal can contain one or more desktops. For resources that occur only once, like look and feel and Shell, you can still develop multiple versions even though only one at a time is allowed.

Figure 3–1 Portal Component Hierarchy



3.3 Portal Development Environment in Oracle Enterprise Pack for Eclipse

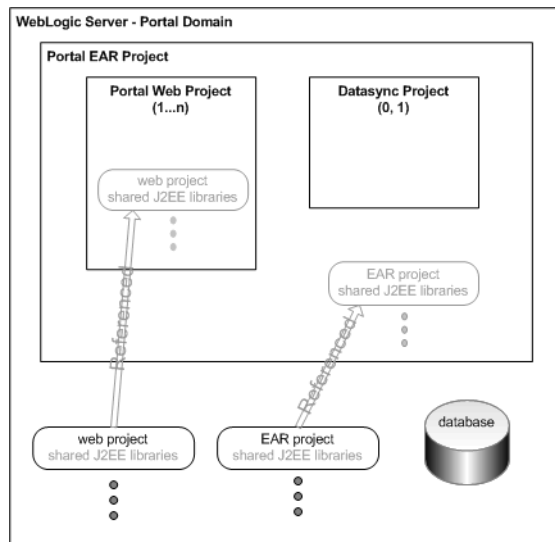
Oracle Enterprise Pack for Eclipse is implemented as a plug-in to the Eclipse Platform, specifically including the Eclipse Workbench, Java Development Tools (JDT), a customized version of the Web Tools Platform Project (WTP), and a Oracle Enterprise Pack for Eclipse-specific plug-in. Specific instructions on using the Oracle Enterprise Pack for Eclipse are available in the *Oracle Workshop for WebLogic* documentation. WebLogic Portal provides additional features that facilitate portal and portlet development.

Before continuing, familiarize yourself with the features of Oracle Enterprise Pack for Eclipse by reviewing online help.

Tip: If you edit or add files to your project outside of Oracle Enterprise Pack for Eclipse, you must refresh your project to avoid possible compile errors. For example, if a Jar file is added to your project after you synchronize to a source control repository, you must perform a refresh. To refresh, right-click the new or updated file and select **Refresh**. Oracle Enterprise Pack for Eclipse then performs the necessary build or update operations to process the changes. Oracle Enterprise Pack for Eclipse has an auto-refresh feature. Because this feature can be time consuming, it is disabled by default. Refer to the Oracle Enterprise Pack for Eclipse Help for information on auto-refresh.

When you set up your portal development environment as described in [Chapter 4, "Setting up Your Portal Development Environment,"](#) your application generally consists of the components shown in [Figure 3–2](#):

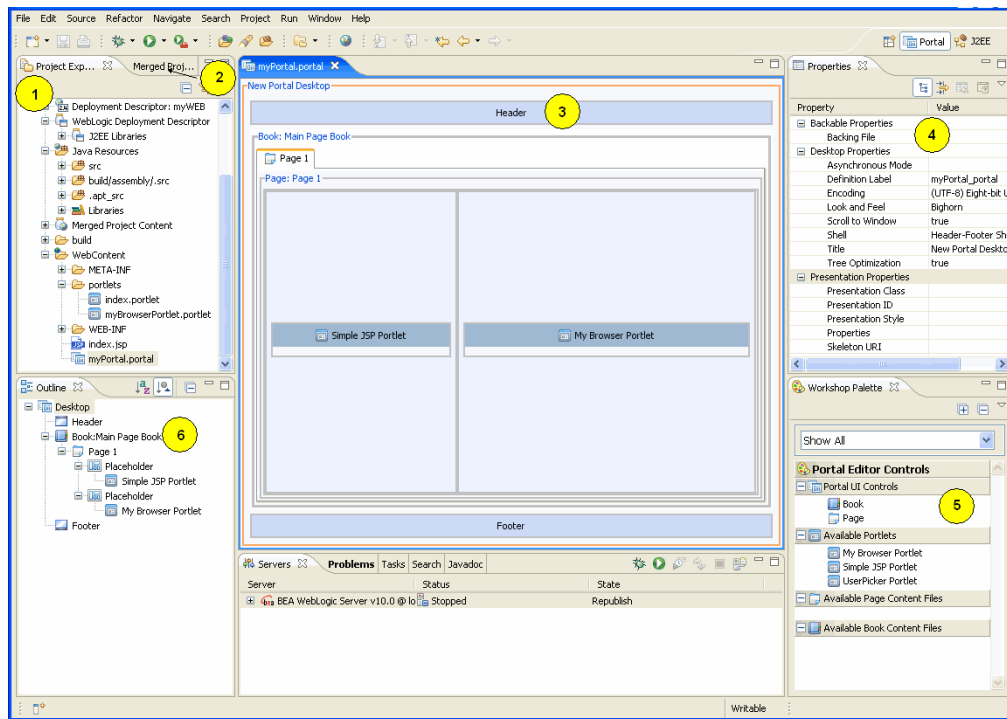
Figure 3–2 Components that Comprise a Portal Development Environment



These are the basic parts that are required to develop and test a portal application.

WebLogic Portal uses a combination of standard Eclipse and Oracle Enterprise Pack for Eclipse views, plus its own customized views, to simplify portal construction.

[Figure 3–3](#) shows an example of how your Oracle Enterprise Pack for Eclipse workbench might look during development of a portal.

Figure 3–3 WebLogic Portal Displayed in Oracle Enterprise Pack for Eclipse Portal Perspective

1. **Package Explorer** view – Shows the hierarchy of directories for the open project, and the WebLogic Portal shared J2EE libraries being referenced by the project.
2. **Merged Projects** view – Shows a combined list of the actual files and referenced files in your project; shared J2EE library files are shown in italic text. This view provides important reference information for your portal development project.
3. **Editor** – Shows the primary visual working area for designing a portal.
4. **Properties** view – Shows properties for the portal component that is currently selected and allows you to set or change them.
5. **Design Palette** view – Provides a list of usable elements and components, including portlets, controls, book and pages.

Note: The Design Palette changed with the latest version of WebLogic Portal. If you prefer to use the previous palette, you can set your Oracle Enterprise Pack for Eclipse preferences. Select **Window > Preferences > WebLogic Portal > Appearance > Palette View > Show classic palette view**.

6. **Outline** view – Shows the components of the portlet interface in a hierarchical structure. To see an example using the Outline view with style sheet development, refer to [Chapter 7, "User Interface Development with Look And Feel Features."](#)

You also use the Propagation perspective and Page Flow perspective during development. For more information about the Propagation perspective, refer to the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*. For more information about the Page Flow perspective, refer to the Oracle Enterprise Pack for Eclipse help. Page Flows are a feature of Apache Beehive, which is an optional

framework that you can integrate with WLP. See [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

3.4 Web Application Frameworks

WebLogic Portal supports these web application frameworks:

- **Java Server Faces** – Supported in the default WLP portal web application configuration. You can create WLP portlets based on JSF applications.
- **Apache Struts** – Optionally supported. You have to add the appropriate facets to your portal web project to enable Struts. WLP Struts support lets you create Struts portlets based on Struts web applications. See "Apache Beehive and Apache Struts Supported Configurations" in the *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.
- **Apache Beehive** – Optionally supported. Apache Beehive lets you create Java Page Flow applications, and you can use the WebLogic Portal Portlet Wizard to create Page Flow portlets. You have to add the appropriate facets to your portal web project to enable Apache Beehive. See "Apache Beehive and Apache Struts Supported Configurations" in the *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.

3.5 WebLogic Portal and Shared J2EE Libraries

Shared J2EE libraries (also referred to as library modules) let you deploy and use a single set of resources rather than having to duplicate those resources in every EAR project and portal web project. Oracle recommends that you use shared J2EE libraries because of their significant advantages in source control, file sharing, and patch application. WebLogic Portal supports only configurations that implement shared J2EE libraries. For detailed information about shared J2EE libraries, refer to "Creating Shared J2EE Libraries and Optional Packages" in the *Oracle Fusion Middleware Developing Applications for Oracle WebLogic Server*.

As illustrated in [Figure 3–2](#), your EAR projects and web projects contain references to shared J2EE libraries that are actually stored at a domain level, and you can use those modules as if they were packaged as part of the referencing application itself.

You can override a resource in a J2EE library by copying it from the library into your portal web project and then customizing it. For example, if you want the default look and feel to look different in a particular portal web project, you can copy the default look and feel from the library into the portal web project and make your modifications.

When you copy a resource, WebLogic Portal puts that resource into the "matching" location within your portal web project. When you deploy the project, WebLogic Server sees the copied resource and uses that instance instead of the resource in the library.

Caution: If you copy J2EE library resources into your project, keep in mind that with future updates to the WebLogic Portal product, you might have to perform manual steps in order to incorporate product changes that affect those resources. *With any future patch installations, WebLogic Portal supports only configurations that do not have copied J2EE library resources in the project.*

For information on how to copy J2EE library resources into a project, refer to [Section 8.3, "Copying J2EE Library Files into a Project."](#) For more information about how shared J2EE libraries affect portal deployment, refer to [Chapter 16, "Deploying Portals to Production."](#)

3.6 File-Based Portals and Streaming Portals

The `.portal` file you create in Oracle Enterprise Pack for Eclipse is a template. In this template you create books, pages and portlets and define defaults for them. When you view the `.portal` file with your browser the portal is rendered in "single file mode," meaning that you are viewing the portal from your file system as opposed to a database. The `.portal` file's XML is parsed and the rendered portal is returned to the browser. The creation and use of a `.portal` is intended for development purposes, but you can access a `.portal` file in production. Because there is no database involved you cannot take advantage of features such as user customization or entitlements.

Once you have created a `.portal` file you can use it to create *desktops* for a production environment, using the WebLogic Portal Administration Console.

A *desktop* is a particular view of a portal that visitors access. A portal can be made up of multiple desktops, making the portal a container for desktops. A desktop contains all the portlets, content, shells, layouts, and look and feel elements necessary to create individual user views of a portal.

When you create a desktop based on the `.portal` file in the WebLogic Portal Administration Console, the `.portal` and its resources are placed into the database. The settings in the `.portal` file, such as the look and feel, serve as defaults to the desktop. Once a new desktop is created from a `.portal` template, the desktop is decoupled from the template, and modifications to the `.portal` file do not affect the desktop, and vice versa. For example, when you change a desktop's look and feel in the WebLogic Portal Administration Console, the change is made only to the desktop, not to the original `.portal` file. When you view a desktop with a browser it is rendered in "streaming mode" (from the database). Now that a database is involved, desktop customizations can be saved and delegated administration and entitlements can be set on portal resources.

System performance is not significantly different between streamed portals and file-based portals. The advantages of each portal type depend more on how many portlets you plan to produce, the functionality you want to provide portal end users, and how you want to manage your portal.

[Table 3–1](#) compares streamed and file-based portals in more detail:

Table 3–1 Performance/Feature Comparison of File-Based Portals and Streaming Portals

| Portal Feature | File-Based Portals | Streamed Portals |
|----------------------|---|--|
| Adding Entitlements | Run-time check only | Yes—More easily set and configured |
| Setting Preferences | In portal definition | For individual portal instances |
| Number of Instances | Limited | More than file-based portals |
| Customization | No | Yes (through Visitor Tools and the Administration Console) |
| Internationalization | Difficult—requires changes to skeleton files. | Easier |

Table 3–1 (Cont.) Performance/Feature Comparison of File-Based Portals and Streaming Portals

| Portal Feature | File-Based Portals | Streamed Portals |
|--|---|---|
| Performance | Slight advantage | Slightly less than file-based portals |
| Propagation (from test to production environments) | Easy to accomplish by moving the .portal file | Requires proper planning but easy to implement with propagation tools |
| Development Process | Easiest | More complex but more robust |

Note: You cannot set entitlements on a file-based portal, but once you create a desktop that is based on that portal, and you set entitlements on those artifacts in the desktop, then the .portal file will also pick them up at runtime. A .portal file does not go to the database, but an entitlement check is still made at runtime; these entitlements are stored in LDAP. If you don't want a file-based portal to run entitlement checks at runtime, you can turn this off in the WEB-INF/netuix-config.xml file.

For performance-related recommendations, refer to [Section 13.5.4, "Use File-Based Portals for Simple Applications."](#)

3.7 Java Controls in Portals

Java controls are visual components with events, methods, and properties that handle the implementation details for connecting to existing data, systems, applications, and business logic.

The controls provided with WebLogic Portal and Oracle Enterprise Pack for Eclipse fall into the following three categories:

- **System controls**, which are provided by Oracle Enterprise Pack for Eclipse to give easy access to application resources, like databases and EJBs.
- **Custom Java controls**, which could mean controls that the customer writes himself, or it can mean custom Java controls that WebLogic Portal or Oracle Enterprise Pack for Eclipse provides.
- **Portal framework controls**, otherwise known as the "netuix user interface controls;" examples of these include portlets, desktops, books, pages, and so on.

A large set of Java controls is included with WebLogic Portal. In addition, you can create your own custom Java controls to encapsulate your business logic.

The custom Java controls provided within WebLogic Portal are development objects with a defined runtime interface and configurable properties that are used to render portal HTML at runtime. WebLogic Portal's custom controls empower you to manipulate portal runtime behavior dynamically based on any available information the developer wishes to exploit. Upon each request, the control tree is created, and you have an opportunity to manipulate the behavior of each control in the tree, at the desktop, menu, page, or portlet level. WebLogic Portal's custom controls are abstracted by "contexts" in the WebLogic Portal architecture. These contexts give you a well-defined set of APIs that can be used to achieve virtually any runtime behavior that you desire.

WebLogic Portal's custom controls for portlets are governed by a well-defined life cycle. This life cycle provides plug-in points for desired control manipulation. For

example, you might wish to dynamically set the "hidden" property to "true" for a portlet during the `init()` life cycle stage, to prevent the portlet from rendering.

WebLogic Portal's custom controls for portals interoperate with page flow controls. The control architecture interoperates with the page flow control architecture, empowering you to define sophisticated interactions between page flow applications surfaced in portlets, and more general portal windowing management. The integration between WebLogic Portal's custom controls and page flows is surfaced in Oracle Enterprise Pack for Eclipse workbench tools such as property sheets so that you do not need to write code to "hook up" page flows and portlets.

For information about how to access controls when developing a portal, refer to [Section 8.4, "Custom Controls in Page Flows."](#) For technical information about the controls and actions provided with WebLogic Portal, refer to the *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*.

3.8 JSP Tags in Portals

WebLogic Portal provides JSP tags that you can use within JSPs. Portlets can use JSPs as their content nodes, enabling reuse and facilitating personalization and other programmatic functionality. You can create JSPs with Oracle Enterprise Pack for Eclipse to provide a structure for other elements to be added to a portlet.

To view the JSP tags available as you develop a portal, select **Window > Show View > JSP Design Palette**.

For information about the classes associated with WebLogic Portal's JSP tags, see the *Oracle Fusion Middleware JSP Tag Java API Reference for Oracle WebLogic Portal*.

3.9 Asynchronous Rendering

You can choose to have your portal rendered asynchronously. When you set this property, each component of your portal renders when its life cycle is complete, instead of waiting for the entire page or book to be ready for display. You can set this property on a portal (see [Section 8.2, "Setting Portal Component Properties"](#)) or on a per portlet basis (see the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*).

3.10 Backing Files

A common means of influencing portal behavior within the portal framework control life cycle is to use a backing file. A backing file is a Java class that can contain methods corresponding to life cycle stages, such as `init()` and `preRender()`. A portal's backing context, an abstraction of the portal framework control itself, can be used to query and alter the portlet's characteristics. For example, in the `init()` life cycle method, a request parameter might be evaluated, and depending on the parameter's value, the portlet backing context can be used to specify whether the portlet is visible or hidden. For more information about backing contexts, see [Chapter 13, "Designing Portals for Optimal Performance."](#)

Backing files can be attached to portals either by using Oracle Enterprise Pack for Eclipse or coding them directly into the XML file for the particular framework control.

Backing files are simple Java classes that implement the `com.bea.netuix.servlets.controls.content.backing.JspBacking` interface or extend the `com.bea.netuix.servlets.controls.content.backing.AbstractJspBack`

ing interface abstract class. The methods on the interface mimic the controls life cycle methods (refer to [Section 3.10.1, "How Backing Files are Executed"](#)) and are invoked at the same time the controls life cycle methods are invoked.

The following portal controls support backing files:

- Desktops
- Books
- Pages
- Portlets
- JspContent controls

The interportlet communication example in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal* uses backing files.

This section contains the following topics:

- [Section 3.10.1, "How Backing Files are Executed"](#)
- [Section 3.10.2, "Thread Safety and Backing Files"](#)
- [Section 3.10.5, "Backing File Guidelines"](#)
- [Section 3.10.5.1, "Adding a Backing File Using Oracle Enterprise Pack for Eclipse"](#)

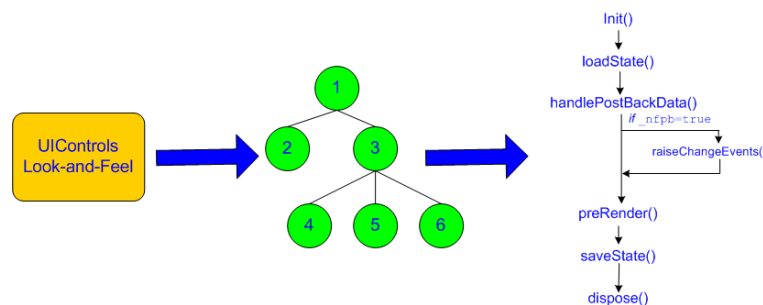
3.10.1 How Backing Files are Executed

All backing files are executed before and after the JSP is called. In its life cycle, each backing file calls these methods:

- `init()`
- `handlePostBackData()`
- `preRender()`
- `dispose()`

[Figure 3–4](#) illustrates the life cycle of a backing file.

Figure 3–4 Backing File Life Cycle



On every request, the following sequence occurs:

Note: In the following steps, the methods are called unless items on inactive pages have been "optimized away" if tree optimization is enabled. For example, if tree optimization is enabled and items on an inactive page are not included on the resulting partial control tree, then the method is not called.

1. All `init()` methods are called on all backing files in depth-first order (that is, in the order they appear in the tree). This method is called whether or not the control (the portal, page, book, or desktop) is on an active page.
2. If the `_nfpb` parameter is set to `true`, all `handlePostBackData()` methods are called.
 - If the `_nfpb` parameter is set to `true` in the request parameter of any called `handlePostBackData()` methods, `raiseChangeEvents()` is called. This method causes events to fire, which is necessary if the backing file tries to make any state or mode changes.

Note: You can use the method `AbstractJspBacking.isRequestTargeted(request)` to determine if a request is for a particular portlet.

- If the backing file's `handlePostBackData()` method returns `true`, the `raiseChangeEvents()` method is called.
3. All `preRender()` methods are called for all portal framework controls on an active (visible) page.
 4. The JSPs are called and rendered on the active page.
 5. The `dispose()` method is called on each backing file.

3.10.2 Thread Safety and Backing Files

A new instance of a backing file is created per request, so you do not have to worry about thread safety issues. New Java VMs are specially tuned for short-lived objects, so this is not the performance issue it was in the past. Also, `JspContent` controls support a special type of backing file that allows you to specify whether or not the backing file is thread safe. If this value is set to `true`, only one instance of the backing file is created and shared across all requests.

3.10.3 Scoping and Backing Files

You can cause different behaviors with backing files by varying their scope. For example, a backing file used at a framework control scope has a different behavior than one used at a JSP content scope.

If you have the backing file on the portlet itself using `<netuix: portlet backingfile = some_value>` you can actually stop the portlet from rendering. If you have the backing file as part of `<netuix: jspContent backingfile=some_value>`, the portlet portion of the control tree has already run; you would use this scope if you want to run processes that are specifically for the JSP in the portlet.

3.10.4 Using the Session to Pass Data Between Life Cycle Methods

The `HttpServletRequest` object is volatile. Oracle recommends that you pass data between life cycle methods using the session rather than the request object.

3.10.5 Backing File Guidelines

Follow these guidelines when creating a backing file:

- Ensure `netuix_servlet.jar` is included in the project class path; otherwise, compilation errors occur.
- When implementing the `init()` method, avoid any heavy processing.

[Example 3-1](#) shows an example backing file. In this example, the `AbstractJspBacking` class is extended to provide the backing functionality required by the portlet. The example uses a session attribute because of the volatility of the `HttpServletRequest` object; Oracle recommends that you pass data between life cycle methods using the session rather than the request object.

Example 3-1 Backing File Example

```
package backing;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
import com.bea.netuix.events.Event;
import com.bea.netuix.events.CustomEvent;
import com.bea.netuix.servlets.controls.content.backing.AbstractJspBacking;
public class ListenCustomerName extends AbstractJspBacking
{
    public void listenCustomerName(HttpServletRequest request,
        HttpServletResponse response, Event event)
    {
        CustomEvent customEvent = (CustomEvent) event;
        String message = (String) customEvent.getPayload();
        HttpSession mySession = request.getSession();
        mySession.setAttribute("customerName", message);
    }
}
```

3.10.5.1 Adding a Backing File Using Oracle Enterprise Pack for Eclipse

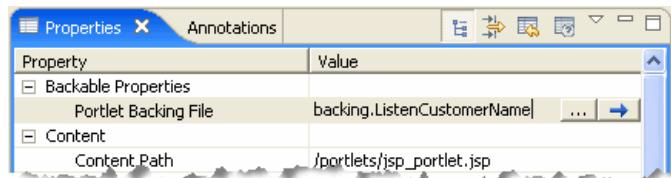
You can add a backing file either from within Oracle Enterprise Pack for Eclipse by specifying the backing file in the **Backing File** field of the Properties view, as shown in [Figure 3-5](#) or by coding it directly into the file with which you are associating it. You need to specify the backing directory and, following a dot-separator, *only* the backing file name. Do not include the backing file extension; for example enter this:

```
backing.ListenCustomerName
```

not this:

```
backing.ListenCustomerName.java
```

For the preceding example, if you include the file extension, the application interprets it as the file name—because the file path is specified by a dot-separator—and looks for a non-existent file called `java` in a non-existent directory called `ListenCustomerName`.

Figure 3–5 Adding a Backing File Using Oracle Enterprise Pack for Eclipse

3.10.5.2 Adding the Backing File by Editing the XML File

To add the backing file by coding it into an XML file for the portal framework control, you can use the `backingFile` parameter within the `<netuix:jspContent>` element, as shown in example [Example 3–2](#).

Example 3–2 Adding a Backing File to a .portlet File

```
<netuix:content>
  <netuix:jspContent
    backingFile="portletToPortlet.pageFlowSelectionDisplayOnly.menu.
      backing.MenuBacking"
    contentUri="/portletToPortlet/pageFlowSelectionDisplayOnly/menu/
      menu.jsp"/>
</netuix:content>
```

3.11 HTTP Session Sharing

Shared HTTP sessions is an Oracle WebLogic Server feature that is not supported by WebLogic Portal. For example, using

```
<wls:sharing-enabled>true</wls:sharing-enabled>
```

in `weblogic.xml` is not supported for WebLogic Portal. Because of the way in which WLP session attributes are scoped, using this shared session feature with WebLogic Portal results in errors and unexpected behavior.

Setting up Your Portal Development Environment

Use this chapter as you prepare your Oracle Enterprise Pack for Eclipse environment for portal development. This chapter describes the Portal EAR Project Wizard, Portal Web Project Wizard, Datasync Project Wizard, the Add/Remove a Project dialog, and a subset of the WebLogic Domain Configuration Wizard. This chapter also describes some features in the Oracle Enterprise Pack for Eclipse interface that you might find useful as you use it to develop portals.

For a step by step example of how to perform the tasks related to each wizard, see *Oracle Fusion Middleware Tutorials for Oracle WebLogic Portal*.

Tip: You can find detailed information about how these setup tasks are related to the deployment of your project in the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

This chapter contains the following sections:

- [Section 4.1, "Roadmap for Environment Setup Tasks"](#)
- [Section 4.2, "Portal Perspective"](#)
- [Section 4.3, "WebLogic Domain Configuration Wizard"](#)
- [Section 4.4, "Portal EAR Project Wizard"](#)
- [Section 4.5, "Add and Remove Projects Dialog"](#)
- [Section 4.6, "Portal Web Project Wizard"](#)
- [Section 4.7, "Portal Datasync Project Wizard"](#)
- [Section 4.8, "Associating Web and Datasync Projects with EAR Projects"](#)
- [Section 4.9, "Using the Merged Projects View"](#)
- [Section 4.10, "Running a Project on the Server"](#)
- [Section 4.11, "Stopping the Server"](#)
- [Section 4.12, "Customizing a Perspective"](#)
- [Section 4.13, "Setting WebLogic Portal Preferences in Oracle Enterprise Pack for Eclipse"](#)

4.1 Roadmap for Environment Setup Tasks

The required environment setup options vary depending on whether you want to develop a "conventional portal" or a collaboration portal. This section describes the basic tasks that you should perform in each case:

- If you want to develop a "conventional" portal application that does not involve collaboration:

| Then in this task... | Select these options... |
|---|---|
| WebLogic Configuration Wizard | In Select Domain Source, select the Weblogic Portal check box. |
| Portal EAR Project Wizard | WebLogic Portal Ear Project Facets |
| Portal Web Project Wizard | WebLogic Portal Web Project Facets |
| Copying J2EE library files into your project (for instructions, refer to Section 8.3, "Copying J2EE Library Files into a Project") | As needed; no specific J2EE libraries required. |

- If you want to develop a collaboration portal application that uses the Collaboration Portlets:

| Then in this task... | Select these options... |
|---|---|
| WebLogic Configuration Wizard | In Select Domain Source, select the Weblogic Portal Collaboration Repository check box. The wizard automatically selects the WebLogic Portal check box; keep it selected. |
| Portal EAR Project Wizard | In addition to the default facets, select the WebLogic Portal Collaboration facet and these sub-features: Collaboration API Collaboration Portlets Application Libraries |
| Portal Web Project Wizard | In addition to the default facets, select the WebLogic Portal Collaboration facet and this sub-feature: Collaboration Portlets |
| Copying J2EE library files into your project (for instructions refer to Section 8.3, "Copying J2EE Library Files into a Project"). | As needed; no specific J2EE libraries required. |

4.2 Portal Perspective

The instructions and figures in this guide are based on the views that are available in the Portal perspective.

1. If the Portal perspective is not already open, select it by choosing **Window > Open Perspective > Portal**.

4.3 WebLogic Domain Configuration Wizard

This section describes the sections of the Configuration Wizard that are interesting from a WebLogic Portal perspective.

A domain is a group of WebLogic Server resources that contain the application server. You must have a server domain that is WebLogic Portal enabled in order to test the portal that you create. This customized domain is generally called a *portal domain*.

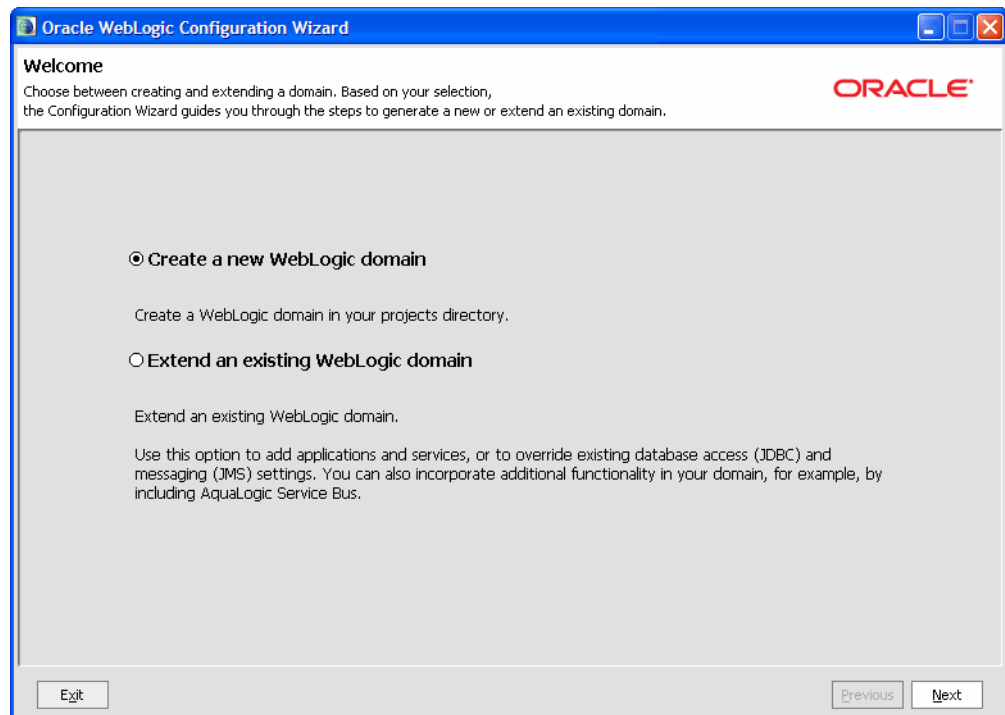
Note: A sample portal domain comes with WebLogic Portal and is located at <WLPORAL_HOME>/samples/domains/portal. To use this domain, you must install the Portal Examples feature. See "Installing the Portal Examples" in *Oracle Fusion Middleware Release Notes for Oracle WebLogic Portal* for details.

You can start the Domain Configuration Wizard in several ways. Here are summaries of two methods:

- From Oracle Enterprise Pack for Eclipse interface,
 1. From the Servers view, right-click and select **New > Server**.
 2. From the New Server - Define a New Server dialog, click **Next** and then click the hyperlink to start the wizard.
- From the **Start** menu in Windows XP, select **Start > All Programs > Oracle Products > WebLogic Server 11gR1 > Tools > Configuration Wizard**.

The first dialog in the wizard looks like the example in [Figure 4-1](#).

Figure 4-1 Oracle WebLogic Server Configuration Wizard



[Table 4-1](#) shows the values that you would typically enter in the wizard, along with some useful notes that you might find useful as you set up your portal domain.

Note: For more information on the Domain Configuration Wizard, see *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

Table 4–1 Configuration Wizard Values for a Portal Domain

| In this Wizard Page... | Select or Enter... |
|---|--|
| Welcome | Create a new WebLogic domain (the default) |
| Select Domain Source | <p>In the Generate a domain configured automatically to support the following products list, select WebLogic Portal.</p> <p>Notice that a WebLogic Portal Collaboration Repository checkbox is available on this wizard dialog; portal projects that use Collaboration Portlets features must have a domain that includes this repository. For information about Collaboration Portlets, see the <i>Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal</i>.</p> <p>For more information on the options available here, refer to Section 4.1, "Roadmap for Environment Setup Tasks."</p> |
| Configure Administrator Username and Password | <p>(Default) user name: <code>weblogic</code></p> <p>User password:</p> <p>Confirm user password:</p> <p>Note: The password must contain at least one non-alphabetical character.</p> <p>You might want to use this WebLogic Server administrator login when using the WebLogic Portal Administration Console, so keep track of what you enter here.</p> |
| Configure Server Start Mode and JDK | <p>Development Mode (the default) or Production Mode</p> <p>For information on the implications of using either of these options, refer to the <i>Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal</i>.</p> <p>JRockit SDK (recommended)</p> |
| Configure JDBC Data Sources | <p>Use the defaults.</p> <p>Note: When you click Next, the Configuration Wizard attempts to run a series of connection tests against the database. If the database is not running at this point, these tests will always fail. After the tests run, just click Next again. A warning dialog appears asking if you want to bypass testing. You can safely ignore this warning. Click OK to continue.</p> |
| Run Database Scripts | <p>Click Run Scripts, then click Next.</p> <p>Note: This step was introduced in WebLogic Portal 10.3.2. For prior releases, these scripts were run automatically for the default database. You must click the Run Scripts button before continuing.</p> |
| Select Optional Configuration | Select an option to configure. The wizard will take you through the appropriate steps. |

Table 4–1 (Cont.) Configuration Wizard Values for a Portal Domain

| In this Wizard Page... | Select or Enter... |
|------------------------|--|
| Configuration Summary | Click Create to create the domain. Note: For more information on the Domain Configuration Wizard, see <i>Oracle Fusion Middleware Creating Domains Using the Configuration Wizard</i> . |

4.4 Portal EAR Project Wizard

This section describes the dialogs of the WebLogic Portal Enterprise Application Archive (EAR) Project Wizard.

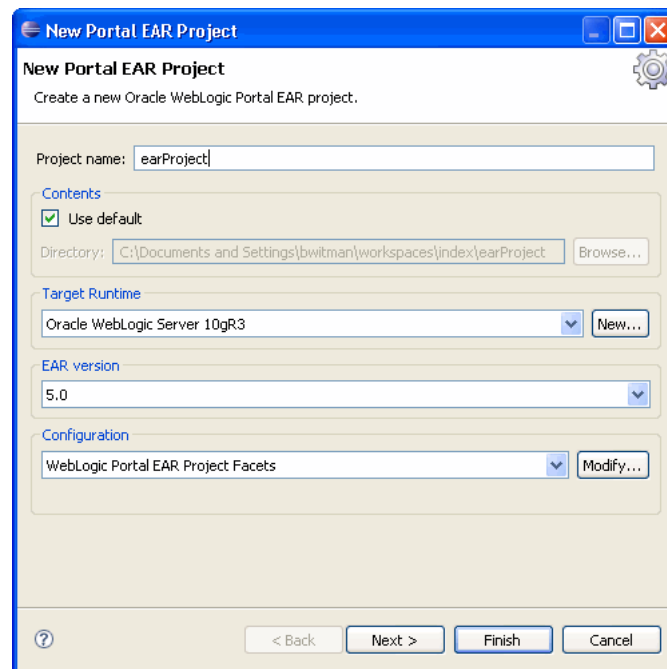
An EAR project collects the component projects of the application for deployment; you create one EAR project per enterprise application. The EAR project contains JAR files, deployment descriptors, build files, and auto-generated files. For more information about EAR projects and their relationship to the other projects in Oracle Enterprise Pack for Eclipse, refer to the "Web Applications" topic in the *Oracle Workshop for WebLogic User's Guide*.

The Portal EAR Project is an EAR project that is customized for WebLogic Portal. EAR projects appear as siblings to the other projects in a workspace but functionally, they link together projects and do not contain any of the content of your web application.

To start the Portal EAR Project Wizard, perform these steps:

1. From the File menu, select **New > Portal EAR Project**. The New Portal EAR Project dialog displays, as shown in [Figure 4–2](#).

Figure 4–2 New Portal EAR Project Dialog



2. (Optional) In the Configuration section, click Modify to add or remove EAR Project Facets. The Project Facets dialog is described in [Section 4.4.1, "Select Project Facets Dialog."](#)

4.4.1 Select Project Facets Dialog

Figure 4–3 shows an example of the New Portal Ear Project – Project Facets dialog.

Figure 4–3 Project Facets Dialog

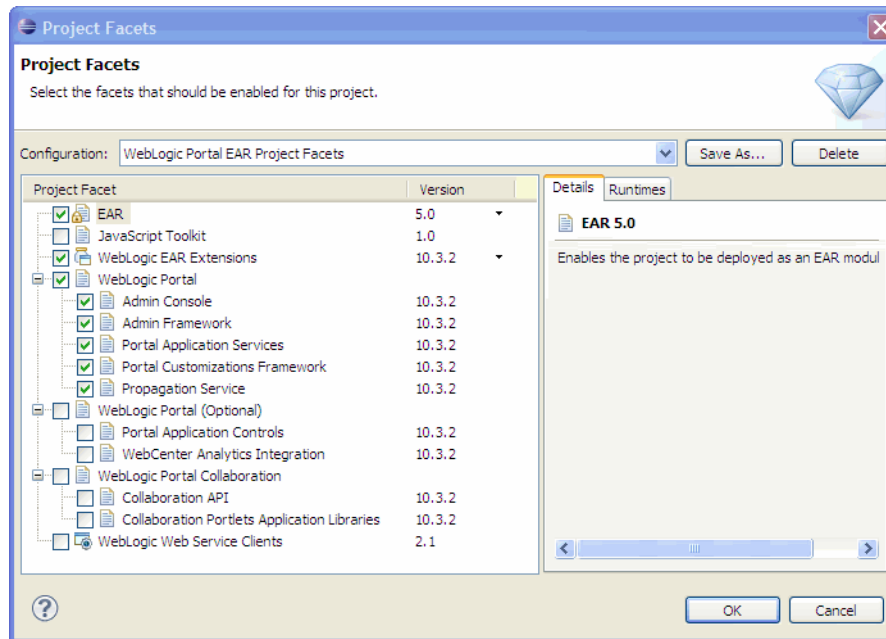


Table 4–2 describes each WebLogic Portal–related field of the Project Facets dialog. The selections that you make here cause WebLogic Portal to create files that you can use as you create your project, and associate the project with the correct set of shared J2EE libraries. For more information about shared J2EE libraries, see [Section 3.5, "WebLogic Portal and Shared J2EE Libraries."](#)

Table 4–2 Project Facets Dialog Data Fields

| Field | Description |
|---|---|
| Configurations dropdown menu | The value automatically displayed in this dropdown menu corresponds to the selections made in the tree view of project facets. You can select a preset group of facets from the dropdown menu, or select and unselect specific check boxes in the tree display. If you select a customized set of facets, <custom> displays in the field. |
| Project Facet Display Tree: WebLogic Portal primary | Select the WebLogic Portal facets that you want to install. If certain facets depend on others, messages appear to describe these dependencies and your selections must conform to these requirements. |
| Project Facet Display Tree: WebLogic Portal (Optional) | Check this box to add additional services to your project. For details on Oracle WebCenter Portal's Analytics Integration, see the <i>Oracle Fusion Middleware Oracle WebCenter Analytics Administrator's Guide for Oracle WebLogic Portal</i> . |
| Project Facet Display Tree: WebLogic Portal Collaboration | Check this box (and one or more of its sub-features) to enable this project as a collaboration-enabled EAR. |

4.5 Add and Remove Projects Dialog

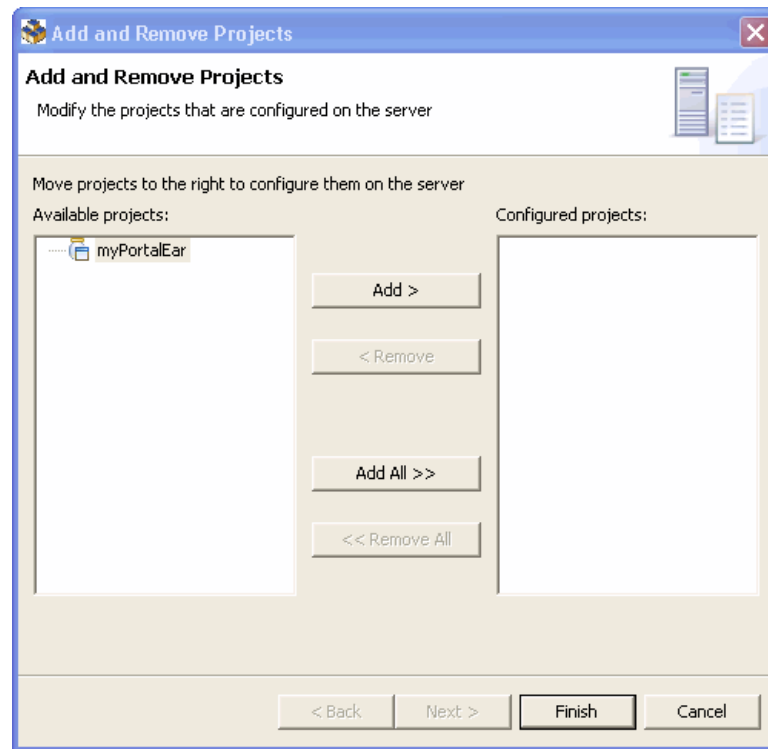
This section describes the Add and Remove Projects dialog, which you use to associate an EAR project with a portal domain. If your EAR Project already exists when you create you domain, you can make this association when you create the server domain. If not, you can do it later using the steps outlined in this section.

To associate the Portal EAR Project with the server, perform these steps:

1. In the Servers view, right-click **Oracle WebLogic Server v10.3**, then select **Add and Remove Projects**.

The **Add and Remove Projects** dialog displays, as shown in [Figure 4-4](#).

Figure 4-4 Add and Remove Projects Dialog



2. Click to select the desired EAR project in the **Available projects** column and then click **Add**.

The project is added to the Configured projects column on the right.

3. Click **Finish**.

The Portal EAR Project is now associated with the server. To verify this, in the Servers view you can expand the server node to view the server's associated projects. The `myPortalEAR` project should be shown as a subordinate node.

4.6 Portal Web Project Wizard

You use the Portal Web Project Wizard to create the web project that contains portal files. When you create a Portal Web Project, WebLogic Portal creates a set of shared J2EE libraries and files that you can use as you create your portal.

To start the wizard, perform these steps:

1. Select **File > New > Portal Web Project**.

The **New Portal Web Project** dialog displays.

4.6.1 New Portal Web Project – Portal Web Project

[Figure 4-5](#) shows an example of the **New Portal Web Project** dialog.

Figure 4–5 New Portal Web Project Dialog

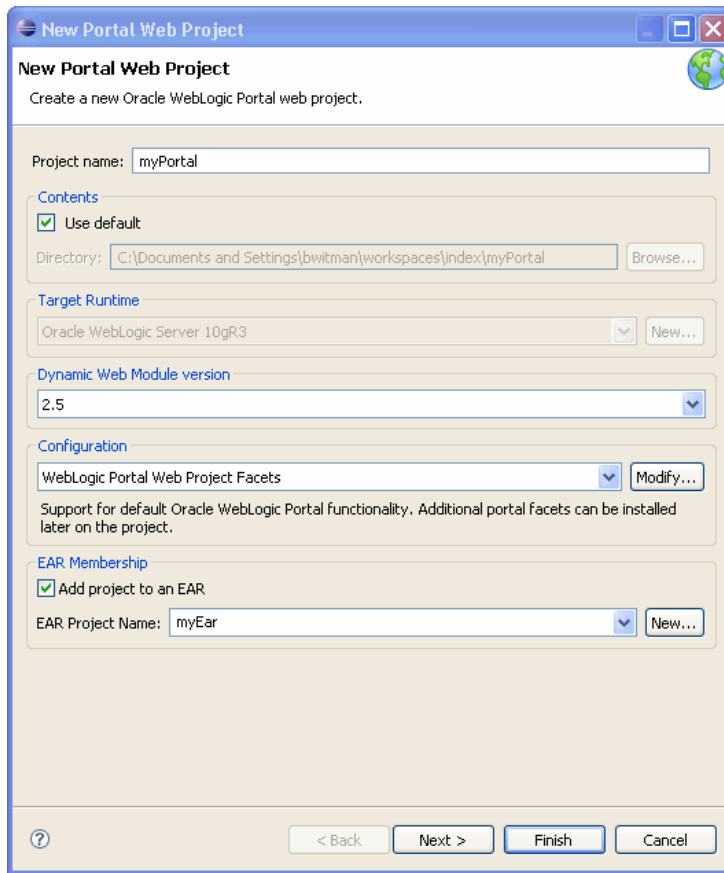


Table 4–3 describes each field of the New Portal Web Project – Portal Web Project dialog.

Table 4–3 New Portal Web Project Dialog Data Fields

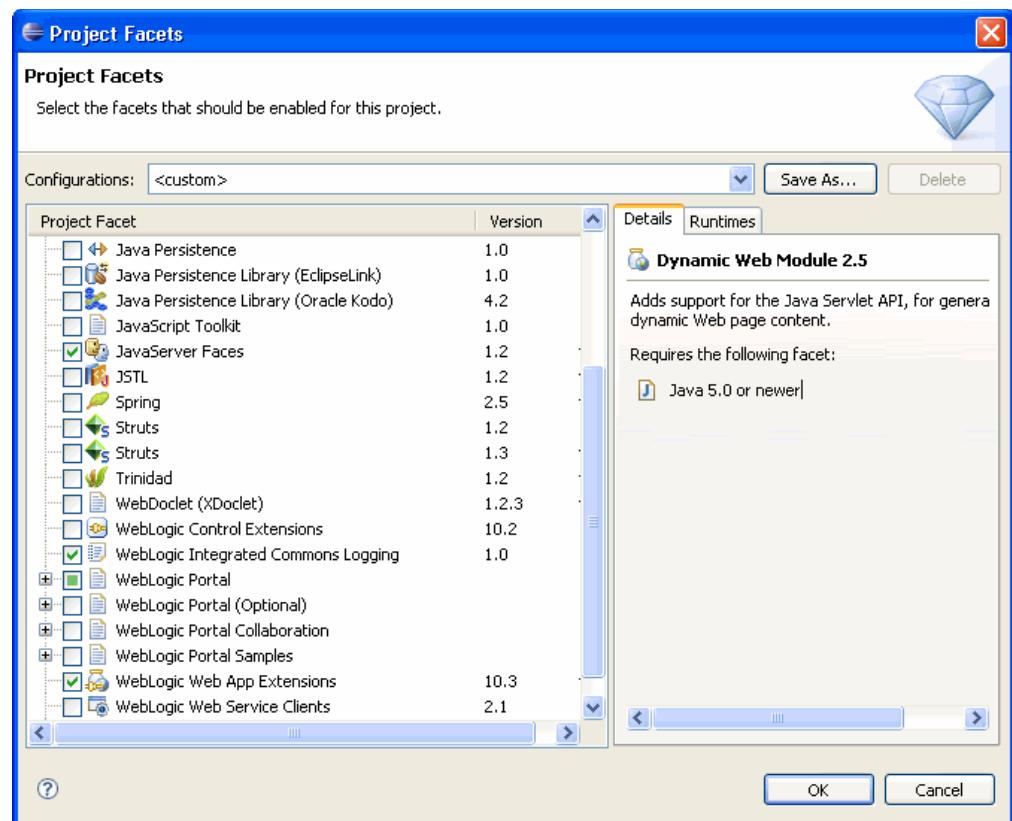
| Field | Description |
|---|---|
| Project name | The name of the portal web project. |
| Contents area – Use default check box and file browser | You can use the content area that WebLogic Portal creates by default, or point to another directory where your project contents are stored. |
| Target Runtime | The runtime (server) to which you will deploy. |

Table 4–3 (Cont.) New Portal Web Project Dialog Data Fields

| Field | Description |
|---|---|
| Dynamic Web Module version | Select the Eclipse Dynamic Web Module version. Adds support for the Java Servlet API, for generation of dynamic Web page content. The default is recommended. |
| Configurations | Included facets. Click Modify to bring up the Project Facets dialog. See Section 4.6.2, "New Portal Web Project – Select Project Facets dialog." |
| Add project to an EAR check box and file browser | <p>If you have not yet created a Portal EAR Project, leave this check box unselected; you can associate the project with an EAR later by right-clicking the web project in the Package Explorer tree and selecting Properties; then use the J2EE Module Dependencies setting to associate the project with the EAR. See also Section 4.8, "Associating Web and Datasync Projects with EAR Projects."</p> <p>If you have an existing EAR to associate with the project, select the check box; the dropdown menu displays an auto-filled EAR name corresponding to the EAR project(s) that you created in the Portal EAR Project Wizard. Click to select the appropriate EAR file, or click Browse to navigate to an existing EAR file.</p> <p>A portal web project must be associated with an EAR for the build to work successfully.</p> |

4.6.2 New Portal Web Project – Select Project Facets dialog

The New Portal Web Project – Project Facets dialog is shown in [Figure 4–6](#).

Figure 4–6 New Portal Web Project – Project Facets Dialog

[Table 4–4](#) describes each WebLogic Portal–specific field of the dialog.

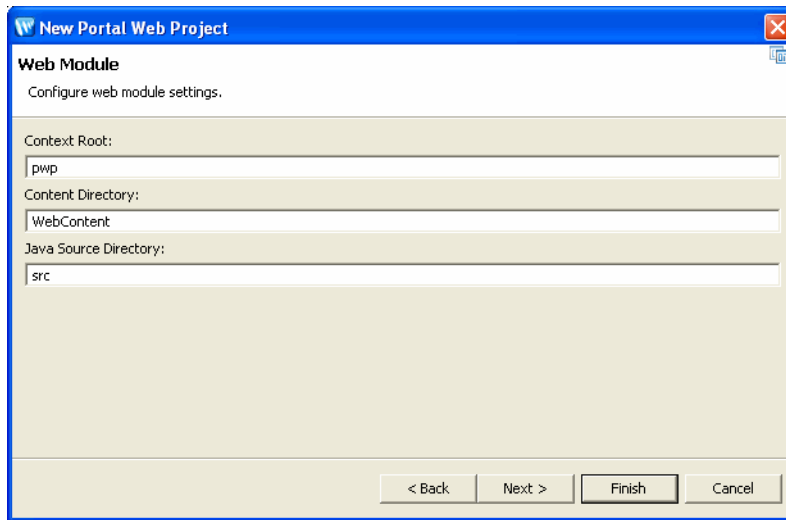
Table 4–4 New Portal Web Project Dialog Data Fields - WebLogic Portal Information

| Field | Description |
|---|---|
| Configurations dropdown menu | The value automatically displayed in this dropdown menu corresponds to the selections made in the tree view of project facets. You can select a preset group of facets from the dropdown menu, or select and unselect specific check boxes in the tree display. If you select a customized set of facets, <custom> displays in the field. |
| Project Facet Display Tree: WebLogic Portal primary | Select the WebLogic Portal facets that you want to install. If certain facets depend on others, messages appear to describe these dependencies and your selections must conform to these requirements. For the list of selections, expand the WebLogic Portal node in the tree. |
| Project Facet Display Tree: WebLogic Portal (Optional) | Check this box to choose from optional facets. Optional facets include analytics integration and content presenter framework. For the list of selections, expand the WebLogic Portal (Optional) node in the tree. |
| Project Facet Display Tree: WebLogic Portal Collaboration | Check this box to add the collaboration portlets to the project. For detailed information on the Collaboration Portlets, see the <i>Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal</i> . Collaboration Portlets - causes the J2EE library wlp-collab-portlets-app-lib to be associated with your project. |
| Details | The tab displays information about the web project, such as details about the Dynamic Web Module version. |
| Runtimes | The tab displays the runtimes (web servers) associated with this web project. |

4.6.3 New Portal Web Project - Web Module Dialog

The New Portal Web Project – Web Module dialog is shown in [Figure 4–7](#).

Figure 4–7 New Portal Web Project – Web Module Dialog



[Table 4–5](#) describes each field of the dialog.

Table 4–5 New Portal Web Project – Web Module Data Fields

| Field | Description |
|-----------------------|--|
| Context Root | The context root of the web application. |
| Content Directory | The default web content directory name <code>WebContent</code> is automatically displayed; you can change it if you wish. As a best practice, you should locate your portal file(s) and other portal resources in a <i>web content</i> directory that is subordinate to the <i>web project</i> directory. |
| Java Source Directory | The default Java source directory name <code>src</code> is automatically displayed; you can change it if you wish. |

4.6.4 New Portal Web Project - JSF Capabilities Dialog

The JSF facet is selected by default when you create a web project. This dialog lets you configure the JSF features in your project. If you deselected the JSF facet for any reason, this dialog will not appear. The dialog is shown in

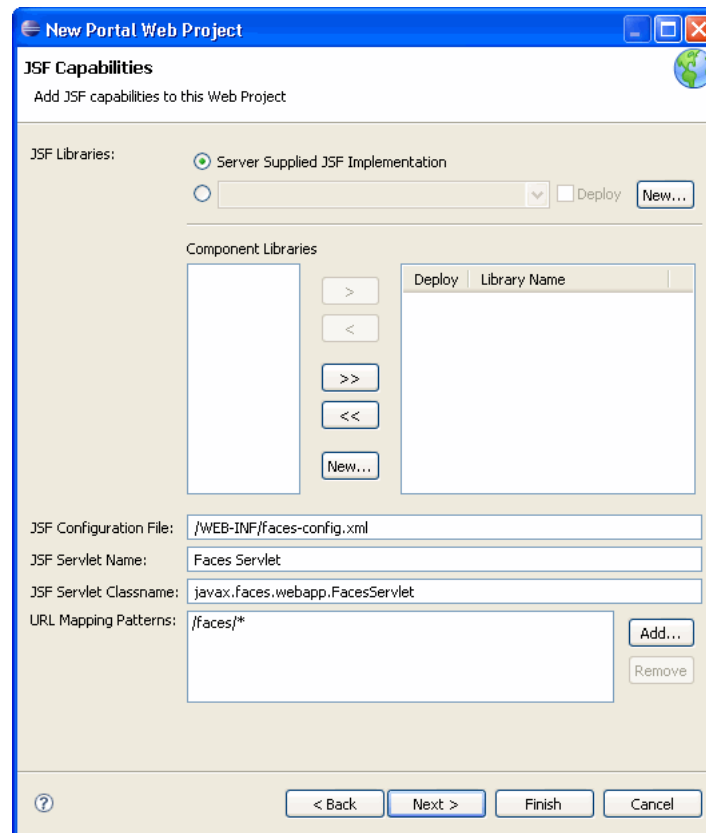
Figure 4–8 New Web Project - JSF Capabilities Dialog

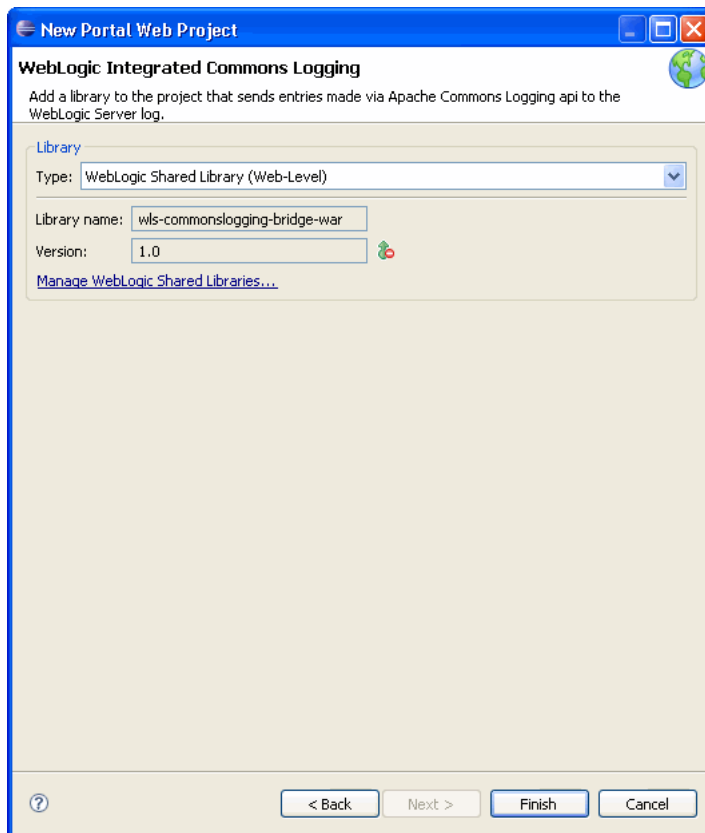
Table 4–6 describes the fields of the JSF Capabilities dialog.

Table 4–6 New Portal Web Project - JSF Capabilities Dialog Fields

| Field | Description |
|---|---|
| JSF Implementation Libraries | This section lets you select the JSF implementation that you want to use. You can choose the default (the version supplied by the server) or click New to define a new JSF library consisting of the JSF jar files that you choose. |
| JSF Component Library | This section lets you specify the contents of the JSF component library. For information on component and implementation libraries, refer to the Eclipse documentation. |
| JSF Configuration File, JSF Servlet Name, JSF Servlet Classname, and URL Mapping Patterns | These fields let you modify standard JSF configurations. For information on these fields, refer to the JSF documentation of your choice. |

4.6.5 New Portal Web Project - WebLogic Integrated Commons Logging Dialog

The New Portal Web Project – WebLogic Integrated Commons Logging dialog is shown in [Figure 4–9](#). This dialog lets you add a library to the project that sends entries made through Apache Commons Logging to the WebLogic Server Log. For more information on Apache Commons Logging, refer to the Eclipse documentation. Click the Manage WebLogic Shared Libraries to replace or modify the logging default logging library if you want.

Figure 4–9 New Portal Web Project – WebLogic Integrated Commons Logging Dialog

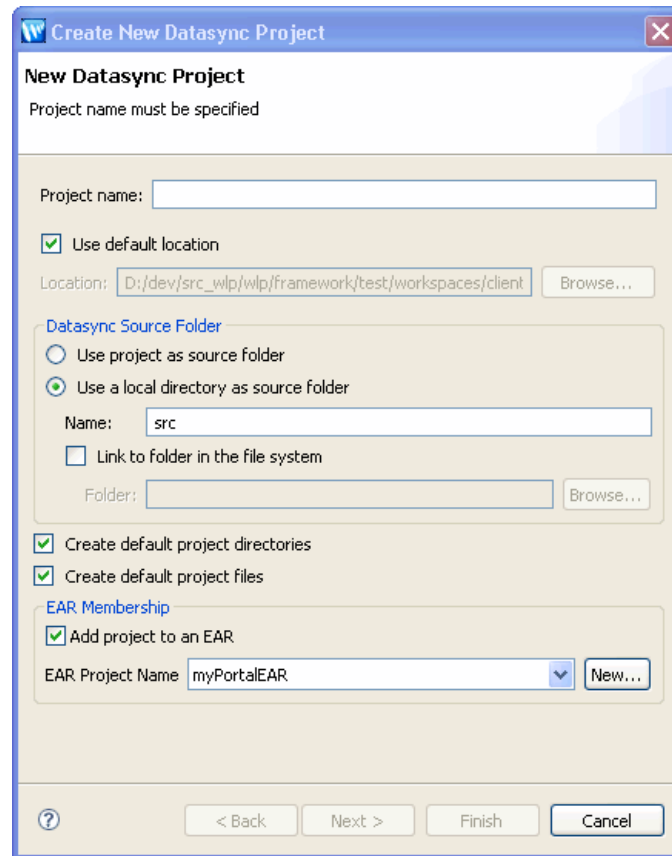
4.7 Portal Datasync Project Wizard

A datasync project is an optional project that stores general purpose portal services data that is used in the development of personalized applications and portals. These portal services include User Profiles, Session Properties, Campaigns and others. You can share a single datasync project among several EAR projects if you wish.

To create the datasync project, perform these steps:

1. Select **File > New > Datasync Project**. The Create New Datasync Project dialog displays as shown in [Figure 4–10](#).

Figure 4–10 Create New Datasync Project Dialog



[Table 4–7](#) describes each field of the dialog. When you click **Next**, the EAR Projects dialog displays.

Table 4–7 New Datasync Project Data Fields

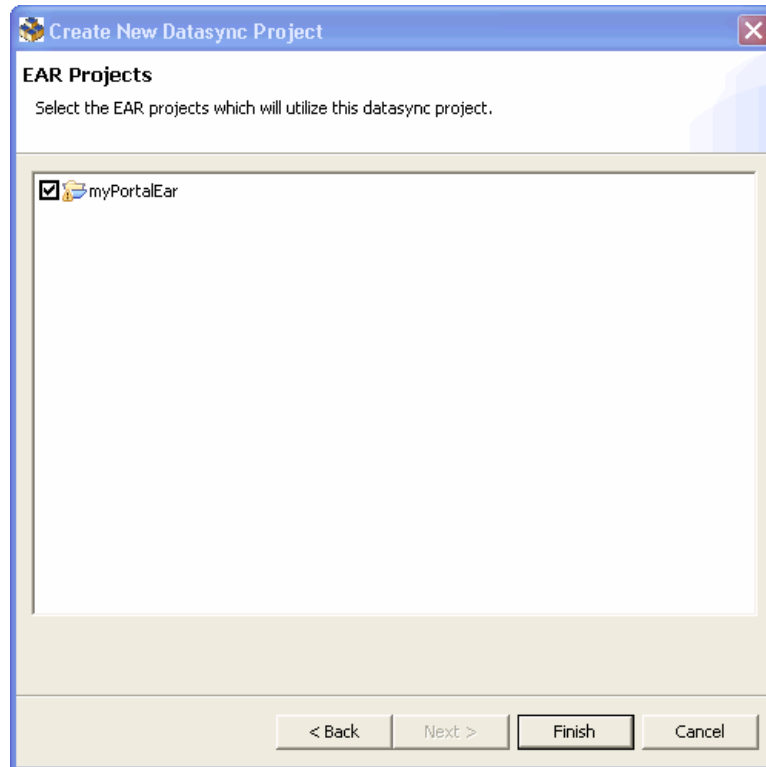
| Field | Description |
|------------------------|--|
| Project name | The name that you want to assign to this datasync web project. |
| Location | The default web content directory name <code>WebContent</code> is automatically displayed; you can change it if you wish. You must locate your portal file(s) and other portal resources in a <i>web content</i> directory that is subordinate to the <i>web project</i> directory. |
| Datasync source folder | The local default Java source directory name <code>src</code> is automatically displayed; you can change it if you wish. |

Table 4–7 (Cont.) New Datasync Project Data Fields

| Field | Description |
|------------------------------------|---|
| Create default project directories | <p>If checked, a default datasync folder structure is created automatically (for an example, see Figure 4–12). If unchecked, no directory structure is created.</p> <p>Note: Some datasync components must be placed in a specific folder structure, although most do not. For instance, User Segment and Content Selector components must be placed in specific subfolders of the datasync folder (/segments/GlobalClassifications and /contentselectors/GlobalContentSelectors respectively). You can ask the IDE to warn you if you try to put a datasync file in an improper directory. To enable this warning, select Window > Preferences > WebLogic Portal > Datasync. In the Properties dialog, select Show warning on opening files in wrong folder. The warning message also tells you the required folder name.</p> <p>Default: checked.</p> |
| Create default project files | <p>If checked, the wizard creates default project files for events, requests, and user profiles.</p> <p>Default: checked.</p> |
| Add Project to an EAR | <p>Check this box and pick an EAR from the drop-down menu. The drop-down lists all EARs in the current works space. The datasync project will be associated with the selected EAR. When the selected EAR is deployed, the datasync project is deployed with it.</p> <p>If you create a datasync project without associating it with an EAR, you can do this step later by right-clicking the datasync project in the Package Explorer tree and selecting Properties; then expand the Datasync node in the tree and select EAR Projects to associate the project with the EAR. See also Section 4.8, "Associating Web and Datasync Projects with EAR Projects."</p> |

4.7.1 Create New Datasync Project – EAR Projects

The Create New Datasync Project – EAR Projects dialog is shown in [Figure 4–11](#).

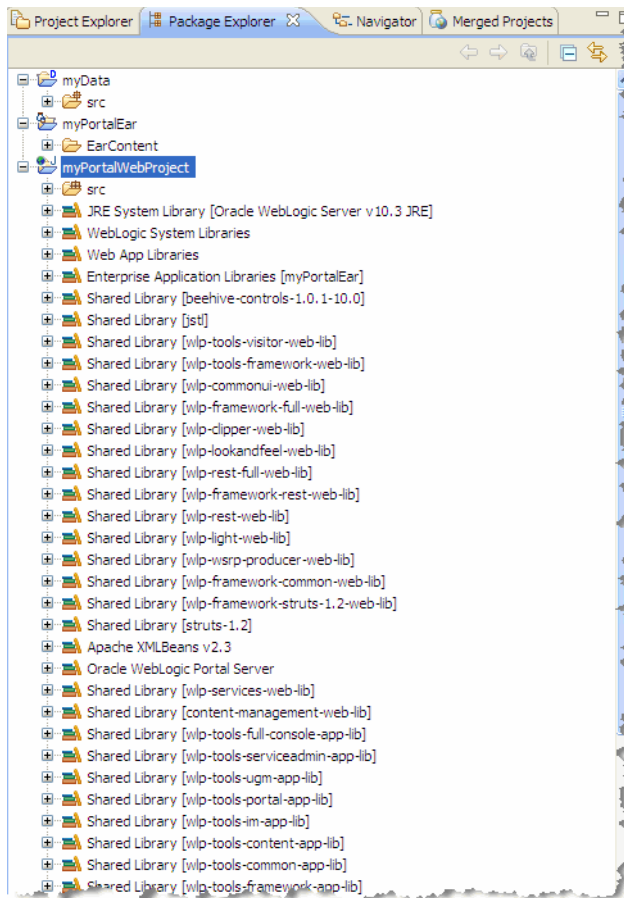
Figure 4–11 Create New Datasync Project – EAR Projects Dialog

This dialog allows you to select the check box for the appropriate Portal EAR project.

Tip: If you create a datasync project without associating it with an EAR, you can do this step later by right-clicking the datasync project in the Package Explorer tree and selecting **Properties**; then expand the Datasync node in the tree and select **EAR Projects** to associate the project with the EAR. See also [Section 4.8, "Associating Web and Datasync Projects with EAR Projects."](#)

If you add a Datasync Project with the default settings, it will look similar to the Package Explorer tree shown in [Figure 4–12](#).

Figure 4–12 Datasync Project Added to the Package Explorer



4.8 Associating Web and Datasync Projects with EAR Projects

Both web projects (WAR files) and datasync projects must be associated with an EAR project. When you create a web project or a datasync project using the wizard, you are given the chance to associate the project with an EAR. If you have a web or datasync project that is not associated with an EAR or if you want to change the association, you can perform the association at any time by following the steps in this section.

4.8.1 Associating an Web Project with an EAR Project

You can associate a web project (WAR file) with an EAR by right-clicking the web project in the Package Explorer tree and selecting **Properties**; then use the J2EE Module Dependencies setting to associate the project with the EAR.

Note: The correct procedure is to use the J2EE Module Dependencies setting to perform this association. You may notice that the Project References dialog appears to let you associate web projects with EAR and datasync projects; however, this dialog is an Eclipse feature that is not used by WLP.

4.8.2 Associating an Datasync Project with an EAR Project

You can associate a datasync project with an EAR project by right-clicking the datasync project in the Package Explorer tree and selecting **Properties**; then expand the **Datasync** node in the tree and select **EAR Projects** to associate the project with the EAR.

Note: The correct procedure is to use the **Datasync > EAR Projects** setting to perform this association. You may notice that the **Project References** dialog appears to let you associate datasync projects with EAR and web projects; however, this dialog is an Eclipse feature that is not used by WLP.

4.9 Using the Merged Projects View

The WebLogic Portal Merged Projects View is included by default in the Portal Perspective. This view shows a combined list of the files in your project, including the associated shared J2EE libraries. This view provides important reference information for your portal development project.

This section includes these topics:

- [Section 4.9.1, "Opening the Merged Projects View"](#)
- [Section 4.9.2, "Working with the Merged Projects View"](#)

4.9.1 Opening the Merged Projects View

If you are not using the Portal Perspective, you should open the Merged Projects view in the workbench. To do so, select **Window > Show View > Merged Projects**.

4.9.2 Working with the Merged Projects View

This section explains some of the benefits of the Merged Projects view.

You will see in the Merged Projects view that some items are italicized. The italicized items represent entities that are stored in J2EE shared libraries. All entities that are stored on your file system, such as the portal file you created, are shown in regular type.

You can copy certain files from the J2EE shared library in which they are stored to your file system. To do this, right-click the file in the Merged Projects view and select **Copy to Project**. This feature copies the file from the shared library to the appropriate place in your project folder. Another function, **Copy to Workspace** lets you choose where to copy the file.

Not all files can be copied using this feature. For instance, `.jar` and `.class` files cannot be copied. Typically, property files, XML files, and similar editable files can be copied. In addition, it is possible to create a J2EE Shared Library that specifically excludes some files from being copied. For more information on J2EE Shared Libraries, see the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

Caution: If you use the Merged Projects view to copy a J2EE library resource into your project, keep in mind that with future updates to the WebLogic Portal product, you might have to perform manual steps in order to incorporate product changes that affect those projects.

You can view the J2EE library information for a file displayed in the Merged Projects view, including the shared J2EE library name and version. To do this, right-click the file and select **Properties**.

4.10 Running a Project on the Server

You can use either of two options for running and viewing the results of your project development; the selection you make depends on the changes you have made in your project and whether or not your server is already started.

The following list describes each option available from the context menu in the Project Explorer view:

- **Run as > Run on Server** - starts the server if not already started and, only if needed, performs a full publish/republish of the application; then it opens a web browser. You must use this selection if you have changed a backing class, EJB, descriptor, Java file, control, or web service.

Tip: You can customize the browser setting so that an external browser displays the application; to do this, select **Window > Preferences > General > Web Browser** and select the appropriate external browser application.

- **Refresh** button in a currently displayed browser view- refreshes the current display based on changes made in the currently selected portal, but does not start the server; this option takes no action if you stopped the server at some point after displaying the initial browser. This selection requires that you previously performed an initial Run on Server process. You can use this option if your changes were limited to JSPs, HTML, .portal files, or .portlet files.

4.11 Stopping the Server

To stop a running WLP server, do one of the following:

- In Oracle Enterprise Pack for Eclipse, right-click the server in the Servers view and select Stop.
- Use the shutdown script that is provided with the server domain. For detailed information, see "Shutting Down Instances of WebLogic Server" in the *Oracle Fusion Middleware Managing Server Startup and Shutdown for Oracle WebLogic Server*.

Occasionally during development, you might need to stop the WLP server manually (for example, by pressing Control-C in the server's command window). If this happens, a number of WLP server processes may continue to run and need to be stopped manually. This list of processes includes:

- java (for the WebLogic Server process)
- java (for the Derby database, if you are using it)
- agentstore
- (Autonomy integration only) AutonomyDiSH
- (Autonomy integration only) AutonomyIDOLServer
- (Autonomy integration only) BEACMRepoFetch
- category
- community

- console
- content
- (Autonomy integration only) FileSystemFetch
- (Autonomy integration only) HTTPFetch

4.12 Customizing a Perspective

Optionally, you can create a personally customized combination of views, so that you can easily return to it any time.

To save the current workbench layout as a perspective, select **Window > Save Perspective As**, enter a name for your customized perspective in the **Name** field, and click **OK**. Your new perspective is added to the list, in the **Other** category.

You can also set this perspective as the default perspective for Oracle Enterprise Pack for Eclipse, using the **Window > Preferences** options. For more information, refer to your Eclipse documentation.

4.13 Setting WebLogic Portal Preferences in Oracle Enterprise Pack for Eclipse

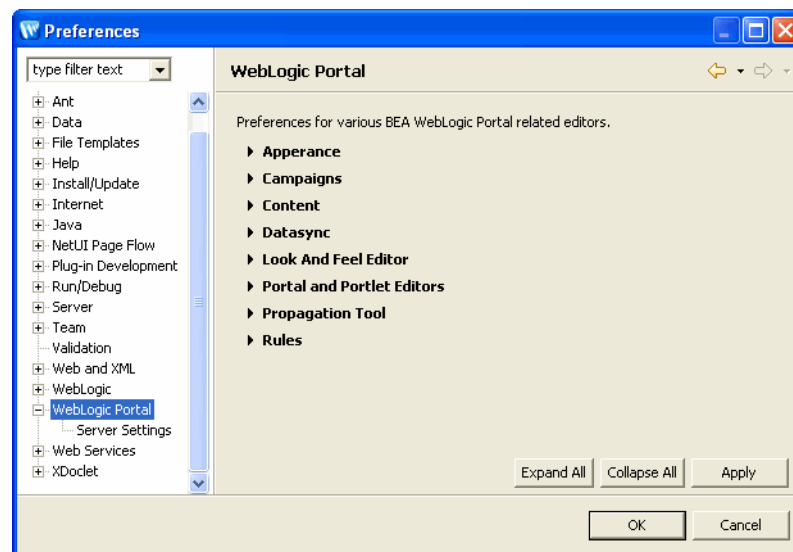
You can set preferences for the behavior of the various editors and features of WebLogic Portal. The following sections describe how to access WebLogic Portal-specific settings within Oracle Enterprise Pack for Eclipse.

4.13.1 Preferences in the WebLogic Portal Section

1. Select **Window > Preferences** and then select **WebLogic Portal** in the tree display.
2. Click the WebLogic Portal node to see settings that are specific to WebLogic Portal.

A dialog similar to the example in [Figure 4-13](#) displays:

Figure 4-13 WebLogic Portal Product Preferences



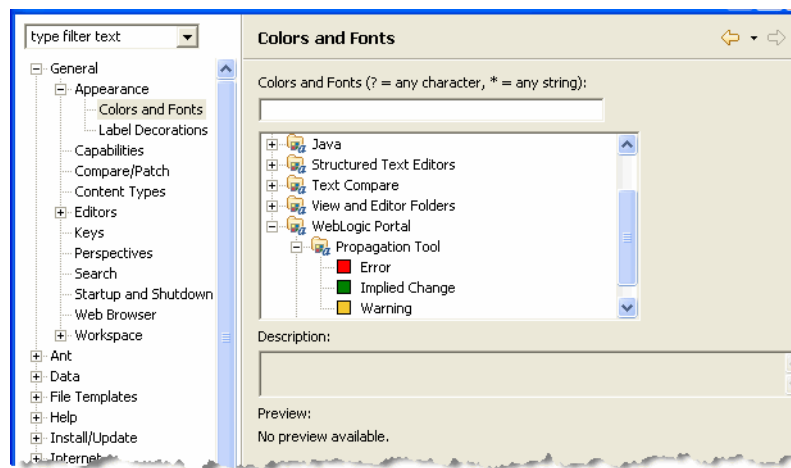
- Expand the desired section in the dialog to set options for that editor.

4.13.2 WebLogic Portal Preferences in the General Section

- Select **Window > Preferences**.
- Expand the **General** node in the tree display.
- WebLogic Portal settings are available in both the **Appearance > Colors and Fonts** and the **Appearance > Label Decorations** sections.

For example, if you select **Appearance > Colors and Fonts**, and then select **WebLogic Portal > Propagation Tool**, a dialog similar to the example in [Figure 4–14](#) displays:

Figure 4–14 Oracle Enterprise Pack for Eclipse Appearance – Colors and Fonts Preferences



In the Propagation Tool node, you can change the assigned colors for status indicators. In the Rules Editor Font node, you can change the font, style, and size for the Rules Editor that is used for campaigns, user segments, placeholders, and content selectors.

4.14 Adding Apache Beehive Support

Apache Beehive is an open source Java Application Framework for building Java EE based applications. WLP web projects do not include Apache Beehive support by default. You have to explicitly add the appropriate facets to your project to use Apache Beehive features in WLP, such page flow portlets.

To add Apache Beehive support to a WLP web project:

- Add the appropriate facets to the web project. For detailed information on the supported configurations of facets for Apache Beehive in WLP, see [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

You can either add the facets when you create the project (see [Section 4.6, "Portal Web Project Wizard"](#)) or you can add them to an existing project (see [Section 5.5, "Adding Facets to an Existing Project"](#)).

4.15 Adding Apache Struts Support

Apache Struts is an open source Java Application Framework for building Java EE based applications. WLP web projects do not include Struts support by default. You have to explicitly add the appropriate facets to your project to use Struts features in WLP, such as Struts portlets.

To add Apache Struts support to a WLP web project:

1. Add the appropriate facets to the web project. For detailed information on the supported configurations of facets for Apache Struts in WLP, see [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

You can either add the facets when you create the project (see [Section 4.6, "Portal Web Project Wizard"](#)) or you can add them to an existing project (see [Section 5.5, "Adding Facets to an Existing Project"](#)).

Integrating Existing Web Applications into WebLogic Portal

This chapter explains how to add or import existing web applications to an existing WebLogic Portal application. This chapter includes these topics:

- [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations"](#)
- [Section 5.2, "Importing Existing Struts Applications into WebLogic Portal"](#)
- [Section 5.3, "Integrating Existing Java Page Flow Applications into WebLogic Portal into WebLogic Portal"](#)
- [Section 5.4, "Integrating Existing Java Server Faces Applications into WebLogic Portal"](#)
- [Section 5.5, "Adding Facets to an Existing Project"](#)
- [Section 5.6, "Other Methods of Integrating an External Web Application into a Portal"](#)

Note: If you have an existing web application to which you want to add WebLogic Portal features, see [Chapter 6, "Integrating WebLogic Portal into Existing Web Applications."](#)

5.1 Apache Beehive and Apache Struts Supported Configurations

This section discusses supported configurations for Apache Beehive and Apache Struts in WebLogic Portal. The following topics are discussed:

- [Section 5.1.1, "About Apache Beehive and Apache Struts"](#)
- [Section 5.1.2, "Supported Configurations for Apache Beehive"](#)
- [Section 5.1.3, "Supported Configurations for Apache Struts"](#)
- [Section 5.1.4, "Mixing Apache Struts 1.3 and Apache Beehive NetUI Applications"](#)

5.1.1 About Apache Beehive and Apache Struts

Apache Beehive is an open source Java Application Framework for building Java EE based applications. WebLogic Portal offers optional support for Apache Beehive. If the Apache Beehive facets are added to your web application, you can use the Oracle Enterprise Pack for Eclipse to create Java Page Flows and you can use the WebLogic Portal Portlet Wizard to create Page Flow portlets.

Like Apache Beehive, Apache Struts is an open source Java Application Framework for building Java EE based applications. WebLogic Portal offers optional support for Struts. See also [Section 5.2, "Importing Existing Struts Applications into WebLogic Portal."](#)

5.1.2 Supported Configurations for Apache Beehive

WebLogic Portal does not support Apache Beehive by default. To use Apache Beehive dependent features, like Java Page Flow portlets, you must install the appropriate Apache Beehive *and* Struts facets into your portal web application. Once these facets are added, you can use Oracle Enterprise Pack for Eclipse to create new Java Page Flows and Java Page Flow portlets.

Note: Content Presenter portlets require the Apache Beehive facets. For information on Content Presenter, see "Adding the Content Presenter Portlet" in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

For information on installing facets into an existing portal web project, see [Section 5.5, "Adding Facets to an Existing Project."](#) For information on creating a new portal web project, see [Section 4.6, "Portal Web Project Wizard."](#)

The supported configurations for Apache Beehive in a WebLogic Portal web application are:

| Supported | Not Supported |
|--|---|
| Neither Struts nor Apache Beehive installed (This is the default configuration for WLP.) | Apache Beehive with Struts 1.3. See also Section 5.1.4, "Mixing Apache Struts 1.3 and Apache Beehive NetUI Applications." |
| <p>Apache Beehive with Struts 1.1 – For full WLP support, these facets are required:</p> <ul style="list-style-type: none"> ■ Beehive NetUI ■ Beehive Controls ■ Portal Framework Beehive Adapters ■ Struts 1.1 <p>Note: The Project Facets dialog enforces these listed requirements.</p> <p>Beehive NetUI with Struts 1.2 – For full WLP support, these facets are required:</p> <ul style="list-style-type: none"> ■ Beehive NetUI ■ Beehive Controls ■ Portal Framework Beehive Adapters ■ Struts 1.2 <p>Note: The Project Facets dialog enforces these listed requirements.</p> | Beehive NetUI without Struts 1.1 or 1.2 installed. |

5.1.3 Supported Configurations for Apache Struts

WebLogic Portal does not support Apache Struts by default. To use Struts applications and Struts-dependent WLP features, like Struts portlets, you must add the appropriate Struts facets into your portal web application, as explained in this section.

For information on installing facets into an existing portal web project, see [Section 5.5, "Adding Facets to an Existing Project."](#) For information on creating a new portal web project, see [Section 4.6, "Portal Web Project Wizard."](#)

The supported configurations for Apache Struts in a WebLogic Portal web application are listed in the following table:

| Supported | Not Supported |
|--|---|
| Struts not installed (This is the default configuration for WLP.) | Apache Beehive with Struts 1.3. See also Section 5.1.4, "Mixing Apache Struts 1.3 and Apache Beehive NetUI Applications." |
| <p>Struts 1.1 – For full WLP support, the following facets are required:</p> <ul style="list-style-type: none"> ■ Struts 1.1 ■ Beehive NetUI ■ Beehive Controls ■ Portal Framework Struts 10.3.2_1.1 ■ Portal Framework Beehive Adapters <p>Note: This configuration requires the above listed facets. Apache Beehive is required even if you do not intend to use it. The Project Facets dialog enforces this requirement.</p> <p>Struts 1.2 – For full WLP support, the following facets are required:</p> <ul style="list-style-type: none"> ■ Struts 1.2 ■ Beehive NetUI ■ Beehive Controls ■ Portal Framework Struts 10.3.2_1.2 ■ Portal Framework Beehive Adapters <p>Note: This configuration requires the above listed facets. Apache Beehive is required even if you do not intend to use it. The Project Facets dialog enforces this requirement.</p> <p>Struts 1.3 – For full WLP support, the following facets are required:</p> <ul style="list-style-type: none"> ■ Struts 1.3 ■ Portal Framework Struts 10.3.2_1.3 <p>Note: Apache Beehive is not required with Struts 1.3.</p> | Struts 1.1 or 1.2 without Apache Beehive. |

5.1.4 Mixing Apache Struts 1.3 and Apache Beehive NetUI Applications

Apache Struts 1.3 and Apache Beehive NetUI 1.0.2 cannot co-exist in the same web application. This configuration is not supported by WebLogic Portal. A possible workaround to this limitation is to use federated portal (WSRP) techniques. For example, you could have two web applications, one that has Struts 1.3 enabled (but not Apache Beehive) and the other with Apache Beehive enabled (but not Struts 1.3). Using federation, you could consume portlets from the Struts 1.3-enabled producer in the portal application that uses Apache Beehive NetUI 1.0.2 (or the other way around). For information on federation, see *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

Another, similar, option is to use Portlet Publishing instead of WSRP. For details, see "Portlet Publishing" in the *Oracle Fusion Middleware Client-Side Developer's Guide for Oracle WebLogic Portal*.

Note that it is possible to have a Struts 1.3 enabled web application and a Apache Beehive NetUI 1.0.2 (Java Page Flow) application that co-exist in the same EAR project.

5.2 Importing Existing Struts Applications into WebLogic Portal

You can integrate, or import, a Struts application into an enterprise application in Oracle Enterprise Pack for Eclipse. Once in Oracle Enterprise Pack for Eclipse, you can give the Struts application a portal user interface by creating portlets, add personalization and campaign functionality, and take advantage of WebLogic Portal's content and user management services.

This topic contains the following sections:

- [Section 5.2.1, "Struts-Enabling the Portal Application"](#)
- [Section 5.2.2, "Preparing Your Struts Application for Integration"](#)
- [Section 5.2.3, "Integration Steps"](#)
- [Section 5.2.4, "Best Practices and Development Issues"](#)

5.2.1 Struts-Enabling the Portal Application

By default, Struts support is optional in WebLogic Portal. This means that to use Struts framework technology with WebLogic Portal, you must enable it by installing the appropriate Struts facet. By offering Struts as an optional framework, WebLogic Portal is able to support multiple, arbitrary versions of Struts. See also [Section 5.1.3, "Supported Configurations for Apache Struts."](#)

5.2.2 Preparing Your Struts Application for Integration

Follow the guidelines presented in this section as you prepare your existing Struts application for integration with WebLogic Portal:

5.2.2.1 Refactor

If you have a top-level Struts application, you must refactor it before you can integrate it. Any Struts applications that are intended for use in a portal must be developed as Struts modules, including the usage of the `html:link` tag for any URLs used in JSPs. Without this, it is impossible for WebLogic Portal to perform the necessary URL rewriting that is required to transparently modify links when the Struts application is used within a portlet.

As part of this process, modify your application to use WebLogic Portal tags using either of these methods:

- Rely on the taglib mapping in `web.xml` to map the WebLogic Portal struts adapter tags to the URI that you already have in your JSPs; this allows you to use your existing JSPs.
- To use Struts 1.2, which is the default version of Struts used for new portal web projects, Oracle recommends that you change your JSPs to use WebLogic Portal taglib URIs; this prevents you from having to change your `web.xml` file, and provides the benefit that these taglibs are automatically deployed.

5.2.2.2 Add Tags if Needed

If a Struts application used within a portal also needs to support stand-alone operation, JSPs referenced by Action forwards must be authored to use several optional tags in the HTML tag library found in `struts.jar` and `struts-adapter.jar` (a file that is created by Oracle). The first of these, `<html:html>`, is found in both Struts and the Struts-adapter. The Struts-adapter version overrides the Struts version of the tag and adds support for detecting whether or not to inhibit rendering of the tag output text if it is used from within a portal, where outputting the HTML text would result in non-well-formed HTML. Two additional tags are provided in the Struts-adapter version of the HTML tag library; use them in JSPs that also need to be used standalone: `<html:head>` and `<html:body>`. These two tags have the same portal-aware rendering behavior as the `<html:html>` tag.

5.2.2.3 Override Certain Behaviors of a RequestProcessor

Some Struts applications use a custom RequestProcessor. WebLogic Portal Struts integration requires that you override certain behaviors of a RequestProcessor. The class `com.bea.struts.adapter.action.AdapterRequestProcessor`, located in `struts-adapter.jar`, provides this standard behavior and must be used in all Struts applications used within a portal. Any custom RequestProcessors must either extend this class or use a utility class to perform the same required operation that this RequestProcessor performs. When extending this class, overrides of `doForward()` must call the superclass `doForward()` and also must not attempt to write to the response. Custom RequestProcessors that do not extend `AdapterRequestProcessor` must call `com.bea.struts.adapter.action.AdapterRequestProcessorUtil.forwardUsingRequest()` to perform any forwarding operations. (This method replaces an actual RequestDispatcher forward request with an operation that captures the forward URI for later use in including the URI into the portal output.)

5.2.2.4 Refactor any Existing Custom Action Servlet

If a Struts application depends on the use of a custom Action servlet, it must be refactored to use a custom RequestProcessor instead, as outlined above, and as recommended by the Struts implementation. Since the page flow functionality in WebLogic Portal uses a custom Action servlet, and since there can be only one Action servlet in a portal web project, portal Struts integration requires that the Action servlet not be customized. For more information on refactoring an Action servlet customization into a RequestProcessor customization, see the Struts documentation at <http://jakarta.apache.org/struts/>.

5.2.2.5 Remove the <html:link> Tag

The StrutsContent control supports module switching using Action forwards. If the Action forward returned by an invoked Action results in a content URI that resides in another module, the current module is switched to the corresponding new module, and all further requests to the Struts portlet containing the control are performed using the new module. Perform module switching using only Action forwards, not by using the `<html:link>` tag to directly link to a JSP in another module; doing so might prevent the portal and Struts frameworks from correctly setting up and selecting the module.

5.2.3 Integration Steps

Perform these steps to integrate your refactored Struts application:

1. Create a portal application and portal web project to which you will add the Struts application. For instructions, refer to [Chapter 4, "Setting up Your Portal Development Environment."](#)

Note: Struts is not by default part of a new WebLogic Portal application. You must add the appropriate Struts facet to the project when you create the WLP web project or add it to an existing project. See [Section 5.5, "Adding Facets to an Existing Project."](#) For information on the versions of Struts that are supported by WLP, see [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

2. You may or may not need to perform this step. In order for URLs in the Struts pages to resolve correctly, page flow support must be enabled. By default, page flow support is enabled, but if the page flow setting has been disabled at some point, you must edit the portal web project's `WEB-INF/netuix-config.xml` file to enable it. [Example 5-1](#) shows the syntax of the tag that you might need to add to the `netuix-config.xml` file. Notice that the `<enable>` element is set to `true`.

Example 5-1 Enabling and Disabling Page Flow Support Using the `<pageflow>` Tag

```
<!-- Enable or disable Pageflow support -->
<pageflow>
  <enable>true</enable>
</pageflow>
```

If this block is not present in `netuix-config.xml`, do not add it. Without the block, the setting defaults to `true`.

1. Deploy the Struts application to the portal web project.

Note: The following steps assume a deployment structure that is not based on split-source; your specific steps might differ from these example steps.

- a. Copy any JSP, HTML, or image files into the portal web project following the standard Struts module directory structure (the module path is the directory path relative to the web application root).
- b. Copy any supporting Java source used by the Struts application into the project's source folder, typically `Web_Project_Name/src`.
- c. Copy any necessary custom JARs for the Struts application into `WEB-INF/lib` folder.
- d. Copy the Struts application module's `struts-config.xml` or module configuration file into `WEB-INF`, but rename it `struts-auto-config-<module-path>.xml`, where `<module-path>` is the module path to the Struts application relative to the web application root, with all instances of `'/'` or `'\'` changed to `'.'`
- e. For example, if the module path is `/struts/my/module`, then rename `struts-config.xml` to `struts-auto-config-struts-my-module.xml`. Naming the module configuration file in this manner enables the `PageFlowActionServlet` used as the Action Servlet to automatically register the module without explicitly registering it with an `init-param` in `web.xml`. If you don't want to take

advantage of this functionality, you can rename `struts-config.xml` arbitrarily, but you must manually register the module in `web.xml` as usual for a Struts 1.1 or 1.2 (Apache Beehive) module.

- f. In the module configuration file, add the following line to configure the RequestProcessor that is required for portal integration:

```
<controller processorClass="com.bea.struts.adapter.action
.AdapterRequestProcessor" />
```

(unless the Struts application requires a custom RequestProcessor).

2. Create a portlet that contains a StrutsContent control that specifies the module and the default action for the Struts application. For instructions, refer to the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.
3. Add the new portlet to the portal. For instructions, refer to the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

5.2.4 Best Practices and Development Issues

Use the following guidelines for integrating Struts applications in portals:

- It is highly recommended that you fully develop and test a Struts application before attempting to host it within a portal. This helps to separate the complexities of developing a working Struts application from the additional issues involved in putting the Struts application into a portlet.
- If you encounter stack traces or messages in the Struts application portlet showing that an action cannot be found, ensure that the module is correctly configured, named correctly, and registered in `web.xml`. This can be tested by running the Struts application stand-alone.
- If you encounter resource not found exceptions or class not found exceptions for dependent classes:
- Make sure that all dependent Java source exists in `WEB-INF/src`, and that it has successfully been built into the corresponding class files in `WEB-INF/classes`.
- If more than one message-resource element is specified in the Struts configuration file for the module, any module files that reference a non-default message bundle must append the module path to the bundle key. For example, if the bundle key is `alternate`, and the module is `/my/module`, any users of the bundle must fully qualify it as `alternate/my/module`.
- If following action links in a Struts portlet results in full-screen, stand-alone Struts pages, make sure that `struts-adapter` JSP tag libraries are in the project's `WEB-INF/lib` directory and that they are registered in `web.xml`.
- If the "No ActionResult returned for action" error is returned when the action attribute of an `html:form` element contains a query parameter, use a hidden `html:text` input field.

5.3 Integrating Existing Java Page Flow Applications into WebLogic Portal into WebLogic Portal

If you have an existing Java Page Flows application, you can integrate the page flows into a portal by installing the WebLogic Portal-related facets using the steps described in [Chapter 6, "Integrating WebLogic Portal into Existing Web Applications"](#); then you

surface those page flows using portlets. You can also build new page flows within the portal web project before creating page flow portlets.

For instructions on creating a page flow, refer to the Oracle Enterprise Pack for Eclipse online help. For instructions on creating page flow portlets, refer to "Building Portlets" in *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

In order for URLs in the page flows to resolve correctly, page flow support must be enabled. By default, page flow support is enabled, but if the page flow setting has been disabled at some point, you must edit the portal web project's `WEB-INF/netuix-config.xml` file to enable it. [Example 5-2](#) shows the syntax of the tag that you might need to add to the `netuix-config.xml` file. Notice that the `<enable>` element is set to true.

Example 5-2 Syntax of the `<pageflow>` Tag to Enable Page Flow Support

```
<!-- Enable or disable Page Flow support -->
<pageflow>
  <enable>true</enable>
</pageflow>
```

If this block is not present in `netuix-config.xml`, do not add it. Without the block, the setting defaults to true.

5.4 Integrating Existing Java Server Faces Applications into WebLogic Portal

Generally the integration process for JSF is simple, requiring only that you follow the instructions accompanying the distribution of JSF that you are using. The portal-specific tasks for incorporating a JSF application into WebLogic Portal are:

- Create a `.portlet` file with a `facesContent` control.
- Insert the `namingContainer` JSP tag as an immediate child of the JSF view tag.

Note: This step is optional but Oracle highly recommends it. For more information about this tag, refer to [Section 5.4.1, "JSF and the namingContainer JSP Tag."](#) The `namingContainer` tag is only used with the WLP native JSF portlet bridge. For more information on the `namingContainer` component see "Client ID Namespacing with the WLP NamingContainer" in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

The following section contains more information about the `namingContainer` JSP tag.

5.4.1 JSF and the namingContainer JSP Tag

The purpose of the `namingContainer` JSP tag is to ensure generation of unique IDs on a page. The `NamingContainer` component provides a WLP-integrated naming container and exposes a naming container instance that can be accessed through an EL expression for use in custom id rewriting in backing beans or input to other components.

Note: The `namingContainer` tag is only used with the WLP native JSF portlet bridge. For more information on the `namingContainer` component see "Client ID Namespacing with the WLP `NamingContainer`" in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

Note: For the default JSR 329 JSF portlet bridge and the JSR 301 portlet bridge, their respective specifications define mechanisms for accessing the naming container. Refer to those specifications for more information.

Currently the JSF architecture does not provide an explicit hooking mechanism to override default component ID generation. JSF uses a hierarchical namespace for components on a page, and JSF automatically generates unique IDs for the components on a page; however, because JSF is not "aware" of the portal, it might generate non-unique component IDs on a page. For simple forms you would not likely experience this problem, but if you use JavaScript on a page and non-unique IDs are generated, the JavaScript might target the wrong component.

For more detail on the implementation of JSF in WebLogic Portal, refer to the *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal* for the package `com.bea.portlet.adapter.faces`.

5.5 Adding Facets to an Existing Project

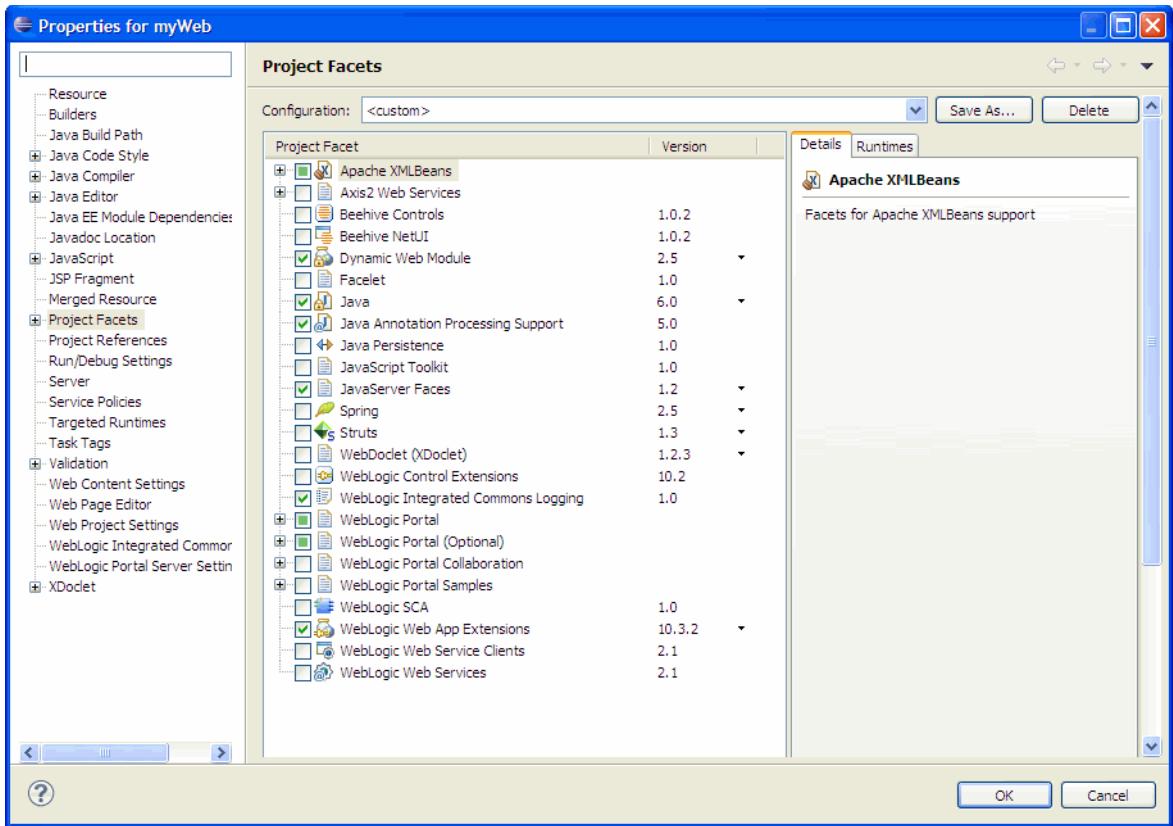
You can add a project facet to your EAR project or portal web project at any time. For example, in your portal web project you might originally have selected not to install the facet that enables visitor tools, but you might decide later that you want to use this feature.

To add a facet to an existing EAR project or portal web project, follow these steps:

1. Right-click the EAR project or portal web project to which you want to add a facet, and select **Properties**.

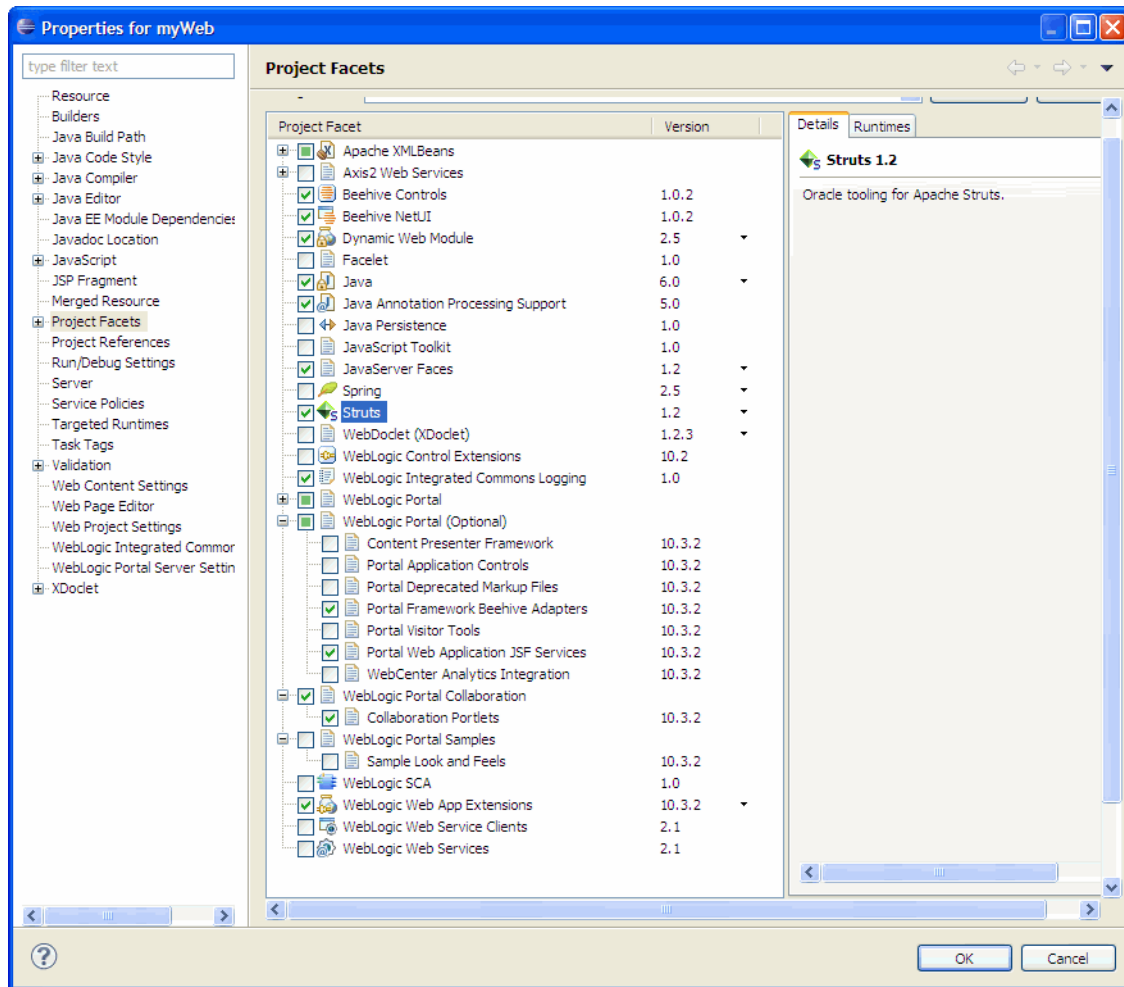
The Properties dialog displays; an example is shown in [Figure 5-1](#).

Figure 5–1 Example Properties Dialog Displaying Installed Project Facets



- Expand the Project Facet nodes in the tree as needed and select the check boxes for any facets that you want to add, or deselect the ones you want to remove.

Figure 5–2 shows an example for a typical portal web project with Collaboration Portlets selected for addition.

Figure 5–2 Example Add/Remove Project Facets Dialog with Collaboration Portlets Selected

3. Click **Finish**.

The facets are added and then displayed in the list of facets in the Properties dialog.

4. Click **OK** to close the dialog. The new facets are now available to your project.

5.6 Other Methods of Integrating an External Web Application into a Portal

A recommended method of integrating a web application's functionality into a portal is to incorporate the application into Java page flow portlets, but this implementation could be difficult if the application is not based on the MVC architecture, Java, or Struts. In these cases you can continue to host the application externally from the portal project but surface its content within WebLogic Portal.

The alternative implementations generally rely on a JSP portlet acting as a sort of proxy, which allows the existing web application to remain intact. Some possible implementations for JSP "proxy" portlets include:

- Creating a JSP portlet that is identical to the home page of the web application, but altering each link to use JavaScript that pops up a new browser window. This

allows you to leverage the existing application while providing a way to interact with the portal.

- Using an IFRAME in the portlet to contain the web application. The internal frame acts as an embedded browser window that the user interacts with independently of the parent browser.
- Using the WLP portlet clipping feature.

Web Services for Remote Portlets (WSRP) provides another alternative implementation, but this implementation requires the legacy server to support SOAP and WSDL, and works best with existing applications designed using MVC.

WebLogic Portal supplies a utility JSP tag called `uriContent` that you can use to retrieve an HTTP response document from a given URI. The *browser portlet* uses the `uriContent` tag (Content URL) to surface an external web application in a portal, using a portlet. For more information about the browser portlet, refer to the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

Integrating WebLogic Portal into Existing Web Applications

This chapter explains how to add WebLogic Portal functionality into an existing Oracle Enterprise Pack for Eclipse web application.

This chapter contains the following sections:

- [Section 6.1, "Introduction"](#)
- [Section 6.2, "Integrating WebLogic Portal into an Existing Web Application"](#)

Note: If you want to add an existing web application to WebLogic Portal, see [Chapter 5, "Integrating Existing Web Applications into WebLogic Portal."](#)

6.1 Introduction

You can transform an existing web application implemented with Oracle Enterprise Pack for Eclipse into a Portal web project by installing the necessary WebLogic Portal-specific facets into it. Then you can give the web application a portal user interface, add personalization and campaign functionality, and take advantage of WebLogic Portal's content and user management services.

Note: These instructions assume that you have an existing web application that conforms to the requirements of the Oracle Enterprise Pack for Eclipse environment, and includes an EAR Project and a Oracle Enterprise Pack for Eclipse Web Project.

6.2 Integrating WebLogic Portal into an Existing Web Application

Integrating a web application into a WebLogic Portal environment involves the following steps:

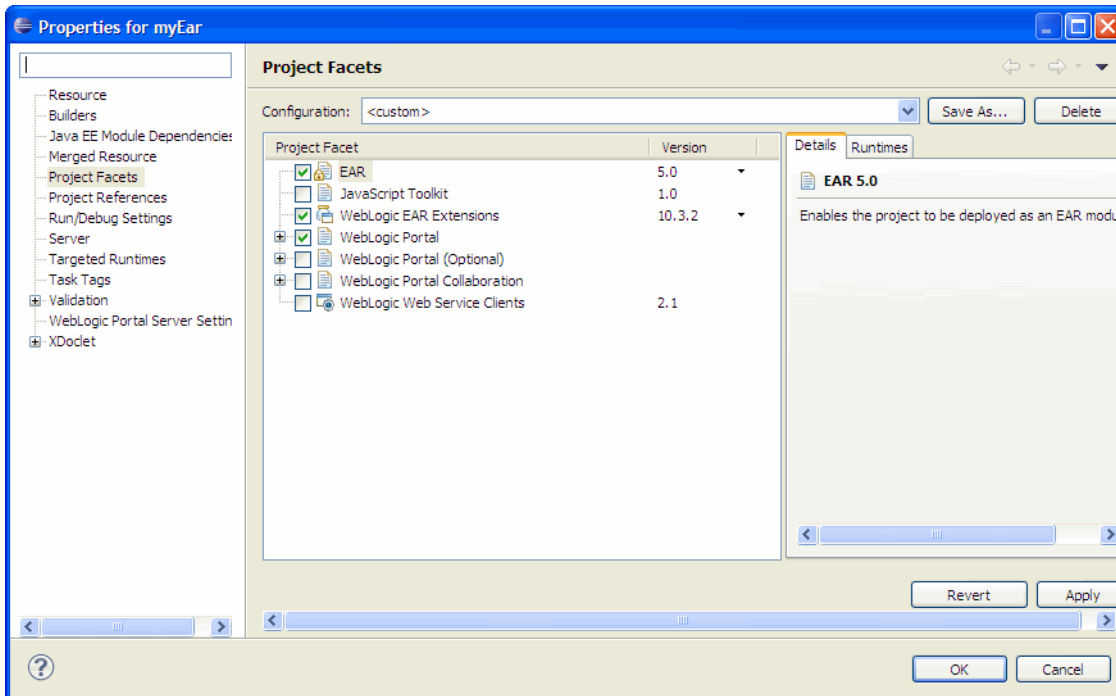
- Adding WebLogic Portal project facets into the EAR project.
- Adding WebLogic Portal project facets into the web application project.
- Adding a Datasync project (if you want to use the general service portal services data such as user profiles, user segments, request properties, session properties, and so on).
- Associating your EAR project with a WebLogic Portal-enabled server.

To integrate an existing web application into Oracle Enterprise Pack for Eclipse and add WebLogic Portal functionality, follow these steps:

1. In the Package Explorer view, right-click the EAR Project and choose **Properties**.
2. Select **Project Facets** in the tree that is displayed in the left pane of the dialog.

The project facets associated with this EAR project display in the table, as shown in Figure 6–1.

Figure 6–1 Project Facets Associated with Non-Portal EAR Project



3. Select the **WebLogic Portal** check box.
All the features for the WebLogic Portal facet are selected by default.
4. Click **Finish**.
The Project Facets table in the properties dialog displays the facets that you just added.
5. Click **OK**.
The Package Explorer view includes the new portal-related content.
6. Repeat steps 1 through 5 to add WebLogic Portal facets to the Web Project.
When you are finished, the display in the Properties view includes the WebLogic Portal facets, and the tree in the Package Explorer view shows the added portal-specific shared J2EE libraries.
7. Associate your portal-enabled project with a WebLogic server that is customized for use with WebLogic Portal. If you need to create a new server that is enabled for use with WebLogic Portal, refer to [Section 4.2, "Portal Perspective."](#)

You can now use WebLogic Portal features to create portlets and to assemble and manage the portal environment.

User Interface Development with Look And Feel Features

This chapter describes how to use the portal framework to develop the overall appearance and behavior of the portal you develop in Oracle Enterprise Pack for Eclipse. You will be able to look at a rendered portal in a browser and understand which pieces of the underlying framework that you need to modify to obtain the results you want. In addition, the look and feel editor is discussed. The look and feel editor lets you interactively modify the text styles used by a portal.

This chapter includes the following sections:

- [Section 7.1, "Look And Feel Framework Overview"](#)
- [Section 7.2, "Working with Look And Feel Files"](#)
- [Section 7.3, "Customizing Look and Feels"](#)
- [Section 7.4, "Creating a New Look and Feel"](#)
- [Section 7.5, "Working with Themes"](#)
- [Section 7.6, "Using Look And Feels From Previous Portal Releases"](#)
- [Section 7.7, "Troubleshooting Look And Feels"](#)
- [Section 7.8, "The Look And Feel Editor"](#)
- [Section 7.9, "Look And Feel API"](#)
- [Section 7.10, "Working with Shells"](#)
- [Section 7.11, "Working with Layouts"](#)
- [Section 7.12, "Working with Navigation Menus"](#)
- [Section 7.13, "Building User Interfaces to Address Accessibility Guidelines"](#)

7.1 Look And Feel Framework Overview

A look and feel file determines the appearance of your portal application, from the placement and behavior of elements on a portal page to the colors used in the portlet title bars.

By using the portal rendering framework, developers can modify and create new look and feel files that portal administrators can apply to individual portal desktops. If visitor tools are enabled, end users can then access different look and feels to change the appearance of their own portal instance.

WebLogic Portal includes robust examples and templates to use when creating the user interface for your portal in Oracle Enterprise Pack for Eclipse.

As with other portal resources (J2EE libraries and so on), you must copy framework resources to your web project before you can modify them. However, in many cases, customizing the user interface for your portal involves modifying a single file or creating a new file to reference rather than modifying an entire set of framework resources.

As a best practice, you should only keep the resources in your project that you need to modify. This allows you to more easily upgrade to newer versions of WebLogic Portal. When you upgrade, all predefined portal resources from J2EE library modules to look and feel files are overwritten.

[Table 7-1](#) lists the key elements involved in the look and feel framework:

Table 7-1 Elements of a Look And Feel

| Framework File | What it does: |
|---------------------------------------|---|
| *.laf (look and feel File) | This file is an XML file that includes references to a specific skin and skeleton XML file. The *.laf file is what is used to change the appearance of your portal. |
| skin.xml | The skin.xml file is the file where most customizations take place. It contains references to the CSS files, images and JavaScript code that you use in your look and feel. |
| skeleton.xml | The skeleton.xml file provides references to the specific JSPs files that render your portal. The JSPs referenced in the skeleton.xml file dictate the rendering of desktops, menus, and so on. |
| Chromosomes and Genes and chromosomes | A gene defines a particular characteristic of a look and feel, such as a CSS property that can be referenced as a variable in look and feel resources (a skin.xml file, for example). A *.chromosome file is a file that contains one or more genes. Genes must be stored in a *.chromosome file. |
| *.theme | A *.theme file provides a way to override a look and feel for a particular portal component. For example, you can apply a *.theme file to a portlet if you want its look and feel to be different than others within your portal. |
| *.layout | The layout file is used to provide the structure for portal pages as well as headers and footers. The layout file you choose (one column, two column and so on) determines where you can place portlets and books within a page, header, or footer. For example, if you want to place portlets within your header, you must apply a layout to that header. |
| *.shell | A shell file defines the header and footer regions of your portal. If you have applied a *.layout to your shell, you can place portlets within a header or footer. |
| *.menu | A menu file defines the navigation style you want to use in your portal. WebLogic Portal provides two types of menus: single-level tab style and multi-level nested. |

7.2 Working with Look And Feel Files

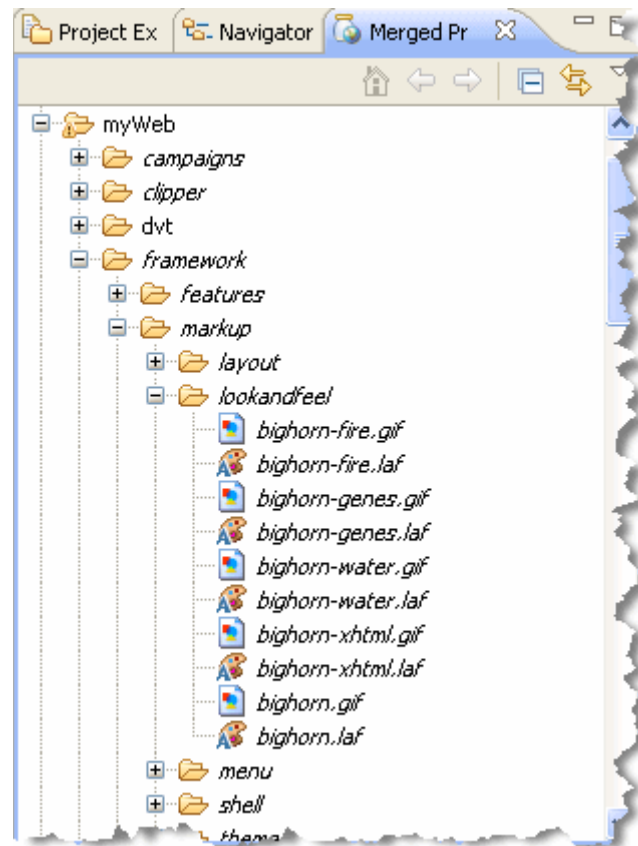
This section includes these topics:

- [Section 7.2.1, "Introduction"](#)
- [Section 7.2.2, "Defining a Look And Feel for a Desktop"](#)
- [Section 7.2.3, "Adding Deprecated Look and Feel Components to a Web Project"](#)

7.2.1 Introduction

A look and feel file (.laf) is an XML block that is inserted into the overall .portal XML file that determines the style and behavior of a portal. A look and feel file references a specific skin and skeleton. A skin provides a set of images, JavaScript functions, and CSS files. Skeleton files contain the JSPs that convert the portal XML components to the final HTML output. [Figure 7-1](#) shows the Look And Feel and related files in the lookandfeel folder. These files are provided with WLP. You can also create your own look and feel files (see [Section 7.4, "Creating a New Look and Feel"](#)). To view this folder, open the Merged Projects view and select `<webproject>/framework/markup/lookandfeel`.

Figure 7-1 Look And Feel Files



Skins and skeletons can leverage skin or skeleton chromosome files which allow you to set variables for CSS values and JavaScript actions, see [Section 7.3.4, "Working with Genes and Chromosomes."](#)

When you select a different look and feel for a portal desktop, you potentially change the skin and skeleton (and other supporting files) that are used to render the portal.

You assign a look and feel to a portal desktop by specifying a value for a Look and Feel desktop property. You can also allow portal visitors to choose a look and feel by enabling Dynamic Visitor Tools and providing different look and feels from which they can choose. See also [Chapter 9, "Using the Dynamic Visitor Tools."](#)

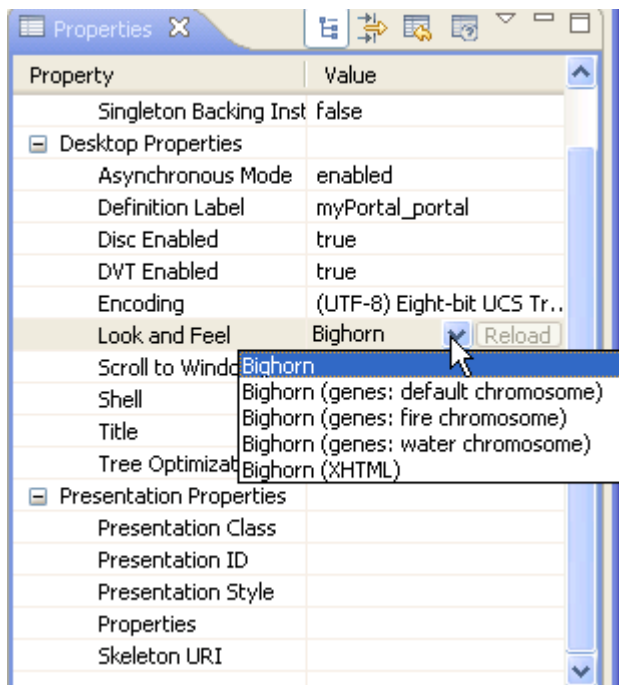
7.2.2 Defining a Look And Feel for a Desktop

You assign an existing look and feel (*.laf) to your desktop in Oracle Enterprise Pack for Eclipse. As you develop or customize your portal's look and feel, this is a helpful way to view your changes.

To assign a look and feel to a desktop using Oracle Enterprise Pack for Eclipse:

1. Navigate to the location of the portal whose properties you want to edit, and double-click the .portal file to open it in the editor.
2. Click the border of the desktop to display its properties in the Properties view.
3. Navigate to the Properties view and choose a look and feel from the look and feel property down-down list for that desktop's properties, as shown in [Figure 7-2](#).

Figure 7-2 Picking a Look And Feel



4. Optionally, to view recent, saved changes to your look and feel, click **Reload**.
5. To see how the look and feel you have selected affects your portal, navigate to your *.portal file, right-click and select **Run As > Run on Server**.

7.2.3 Adding Deprecated Look and Feel Components to a Web Project

A number of legacy WLP look and feel components have been deprecated. This section lists the look and feel components that have been deprecated and explains how to upgrade a WLP application to use them with WLP 10.3.2 and later versions.

- [Section 7.2.3.1, "Which Components are Deprecated?"](#)
- [Section 7.2.3.2, "What Changes Will I Notice?"](#)
- [Section 7.2.3.3, "Upgrading a WLP Application to Use Deprecated Components"](#)

7.2.3.1 Which Components are Deprecated?

WLP has deprecated several legacy look and feels and layouts. [Table 7-2](#) lists the deprecated components and their replacements. Note that the deprecated components are no longer included in a WLP web project by default. When you upgrade an older application, however, these components are added automatically. See [Section 7.2.3.3, "Upgrading a WLP Application to Use Deprecated Components."](#)

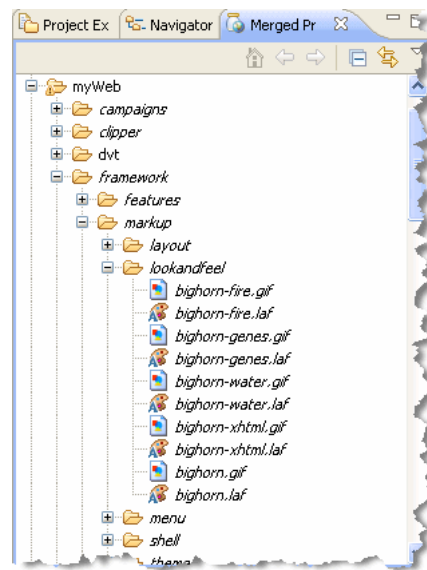
Table 7-2 *Deprecated Look and Feel Components*

| Component Category | Deprecated Components | Replacement Components |
|--------------------|--|--|
| Look and Feel | <ul style="list-style-type: none"> ■ classic ■ default ■ legacy ■ text | bighorn look and feels |
| Layout | <ul style="list-style-type: none"> ■ singlecolumn ■ twocolumn ■ threecolumn ■ fourcolumn | <ul style="list-style-type: none"> ■ singlecolumnflow ■ twocolumnflow ■ threecolumnflow ■ fourcolumnflow |

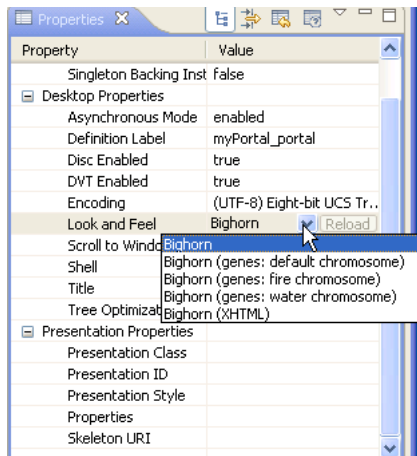
7.2.3.2 What Changes Will I Notice?

The deprecated legacy look and feels and layouts no longer appear by default in the IDE or Administration Console. Under the Merged Projects view, the contents of the **framework/markup/layout**, **framework/markup/lookandfeel**, **framework/markup/skeletons**, and **framework/markup/skins** folders contain only the components that are supported by default. For example, the look and feel file `classic.laf` no longer appears under **framework/markup/lookandfeel**, as shown in [Figure 7-3](#).

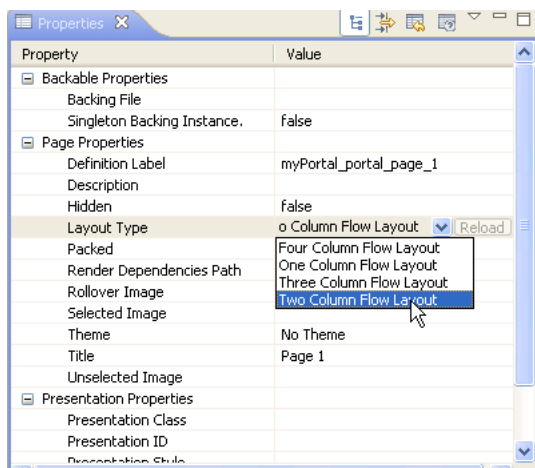
Figure 7-3 *Default Contents of the lookandfeel Folder*



In addition, only the new Look and Feels appear in the Look and Feel menu of the portal desktop Properties view, as shown in [Figure 7-4](#).

Figure 7-4 Look and Feel Property Selections

Similarly, the Layout Type Page Property menu only contains the new layouts by default, as shown in

Figure 7-5 Layout Property Selections

7.2.3.3 Upgrading a WLP Application to Use Deprecated Components

When you follow the domain and application upgrade procedures outlined in the *Oracle Fusion Middleware Upgrade Guide for Oracle WebLogic Portal*, the deprecated components are automatically added. No further action is required by you.

To manually add these components to or remove them from a portal web application, right-click the web application in the Project Explorer in Oracle Enterprise Pack for Eclipse, and select **Properties**. Then, select **Project Facets** and add or remove the **WebLogic Portal (Optional) > Portal Deprecated Markup Files** facet.

The deprecated components are physically located in the J2EE Shared Libraries listed in [Table 7-3](#). These library files are located here in your WLP installation:

```
FM_HOME/wlportal_10.3/light-portal/deprecated/lib/j2ee-modules
```

Table 7-3 J2EE Shared Libraries Containing Deprecated Components

| Component Category | J2EE Shared Library |
|--------------------|----------------------------------|
| Deprecated Layouts | wlp-light-deprecated-web-lib.war |

Table 7-3 (Cont.) J2EE Shared Libraries Containing Deprecated Components

| Component Category | J2EE Shared Library |
|---------------------------|--|
| Deprecated Look and Feels | wlp-lookandfeel-deprecated-web-lib.war |

You can find references to these library files in:

1. `<wls:library-ref>` element(s) in `WEB-INF/weblogic.xml`. A separate element exists for each library file.
2. `<library>` element(s) in your domain's `config.xml` file. This file is located in `DOMAIN_HOME/wlp/config`. A separate element exists for each library file.

7.3 Customizing Look and Feels

WebLogic Portal provides several predefined look and feel files that you can use in your applications. The predefined look and feels are listed in [Table 7-4](#). Often it is easier to customize one of these existing look and feels to suit your needs, rather than develop your own. For example, you can customize a look and feel by editing associated CSS files or by using genes and chromosomes to create color or JavaScript variables. For more information about genes, [Section 7.3.4, "Working with Genes and Chromosomes."](#)

Tip: When choosing a WLP look and feel to customize, use ONLY skins or skeletons prefaced with the name "bighorn". Other deprecated templates are available for use in WebLogic Portal; however, these deprecated templates do not support new look and feel features such as genes and chromosomes. For information on deprecated Look and Feels, see [Section 7.2.3, "Adding Deprecated Look and Feel Components to a Web Project."](#)

Using an existing, predefined look and feel ensures that you always have the necessary look and feel files necessary for properly rendering your portals. [Table 7-4](#) lists the look and feels that are included to use as starting points.

Table 7-4 Predefined Look And Feels

| Look and Feel Name | Skeleton | Skin | Skeleton Chromosomes | Skin Chromosomes |
|--------------------|---------------|---------------|----------------------|--------------------|
| bighorn | bighorn | bighorn | No | No |
| bighorn-xhtml | bighorn-xhtml | bighorn | No | No |
| bighorn-genes | bighorn | bighorn-genes | No | default.chromosome |
| bighorn-water | bighorn | bighorn-genes | No | water.chromosome |
| bighorn-fire | bighorn | bighorn-genes | No | fire.chromosome |
| bighorn-template | bighorn | bighorn | No | No |

Note: The bighorn-xhtml skeleton does not enforce XHTML compliance for portal content. Non-compliant portlets in portals using this skeleton will cause rendering errors.

This section describes ways to customize an existing look and feel. You can use one of these suggested methods independently or use them together.

If you want to create a new look and feel, see [Section 7.4, "Creating a New Look and Feel."](#)

The following topics are covered in this section:

- [Section 7.3.1, "Combining Skins and Skeletons in a New Look And Feel"](#)
- [Section 7.3.2, "Defining Titlebar Buttons and Window Icons"](#)
- [Section 7.3.3, "Modifying CSS Files"](#)
- [Section 7.3.4, "Working with Genes and Chromosomes"](#)

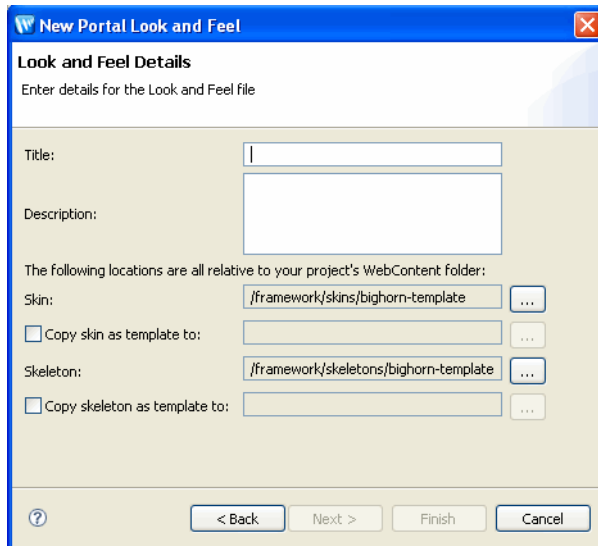
7.3.1 Combining Skins and Skeletons in a New Look And Feel

You can create a custom look and feel file that is based on different combinations of predefined skin and skeleton files. For example, if you require an XHTML skeleton and would also like to use genes in your skin file, you can combine those respective files into a new look and feel file.

To create a new look and feel file based on predefined skin and skeleton files, do the following:

1. In Navigator view, right-click your portal web project and choose **New > Look And Feel**. A wizard guides you through the rest of the process.
2. After you name your new look and feel, you see the window shown in [Figure 7-7](#).

Figure 7-6 *Creating a Look And Feel*



1. In the Skin field, use the ellipsis icon to navigate to the skin you would like to use and select the `skin.xml` file.
2. In the Skeleton field, use the ellipsis icon to navigate to the skeleton you would like to use and select the skeleton directory.

Note: To select a skin, you must select a `skin.xml` file. To select a skeleton, you must only select the skeleton directory.

3. Click **Finish**.

4. The new look and feel is opened in the look and feel editor.
5. Create a 100x75 px .gif that represents the look and feel in the same directory as the .laf file. This gif file must have the same name as your *.laf file.

For example, create a gif file called `telecom.gif` to represent a look and feel file called `telecom.laf`. This image appears in the visitor tools when end users select look and feels for their own customized view of a portal desktop.

If you want to make overrides to the selected skin and/or skeleton, you must manually create your skin and skeleton directories and files in the `/skins/<your_skin>` and `/skeletons/<your_skeleton>` directories. In this case, you do not have to create a full set of skin or skeleton files. You need to create only the skin or skeleton files that will override the files in the base skin or skeleton you selected.

For example, if you use the "bighorn" skin in your new look and feel, and you create only a `bighorn/images/titlebar-button-edit.gif` file, that graphic overrides the graphic in the "bighorn" skin. All other bighorn skin resources are used for your look and feel.

7.3.2 Defining Titlebar Buttons and Window Icons

You use the look and feel file to re-order your titlebar buttons or change window icons. The bighorn look and feel files included with WebLogic Portal include a default titlebar order, as shown in [Example 7-1](#). You can re-order titlebar buttons by editing the XML in your look and feel file.

Example 7-1 Default Titlebar Button Order in the bighorn.laf File

```
<netuix:titlebarButtonOrder>
<netuix:otherButtons/>
<netuix:namedButton name="float"/>
<netuix:namedButton name="edit"/>
<netuix:namedButton name="help"/>
<netuix:namedButton name="minimized"/>
<netuix:namedButton name="maximized"/>
<netuix:namedButton name="delete"/>
</netuix:titlebarButtonOrder>
```

7.3.3 Modifying CSS Files

CSS files are used by `skin.xml` files to define your HTML rendering, and to define colors, border styles, images, and so on.

By modifying CSS files, you can change many aspects of your look and feel file. Each `skin.xml` file uses multiple CSS files to define various aspects of the skin. In addition, you can create custom CSS files to override existing CSS files or add new attributes.

Each `skin.xml` file included with WebLogic Portal includes a reference to a `custom.css` file that is reserved for your customizations. This CSS file is a placeholder for any CSS changes you want to make to the `skin.xml` file you wish to use.

More commonly, you will want to add custom CSS styles. The easiest way to do this is to add your customizations to the `custom.css` file included in your `skin.xml` file.

The following example shows you how to use the `custom.css` file that is included in the bighorn look and feel file's respective skin directory. This `custom.css` is already referenced in the bighorn `skin.xml` file.

Tip: You can use steps similar to these to modify any specific look and feel resource. For example, if you want to modify images that are referenced by a `skin.xml` file, you can copy the image to your project, modify it and save it with the same name. This method allows you to perform minor customizations without modifying entire look and feel files and their resources.

To customize the bighorn `skin.xml` using the `custom.css` file:

1. Using the Merged Projects view, navigate to `/yourWebProject/framework/skins/bighorn/css/custom.css`.
2. Right-click on the `custom.css` file and select **Copy to Project**.
3. In the Project Explorer, navigate to `/yourWebProject/framework/skins/bighorn/css/custom.css`.
4. Right-click the `custom.css` file and choose open it with the editor of your choice.
5. You can now add any custom styles you want to use in your skin. These can include any number of CSS properties such as one that changes the border of all portlets, as shown by the example in [Example 7-2](#)

Example 7-2 Example of a Custom CSS Property

```
.wlp-bighorn-window
{
border-color: red;
}
```

7.3.4 Working with Genes and Chromosomes

Genes give you an extra level of flexibility, control, and ease of maintenance in working with a look and feel file. A gene defines a particular characteristic of a look and feel, such as a CSS color property, that can be referenced as a variable in look and feel resources.

For example, if a look and feel is defined to have a gene named `wlp.portlet.border.color`, you can use that gene name in your CSS files rather than a literal color definition. If that gene is defined to be the color value `#ff0000`, any CSS that uses that gene variable gets that color value. You only have to modify the color value in the gene definition to automatically update all CSS files that use that gene.

Chromosomes are files that contain one or more genes. You can create multiple chromosome files that contain the same gene names, though with different gene values. By referencing a different chromosome in your look and feel file, you can simulate a completely different look and feel without changing any of your core look and feel resource files.

You can also use genes in your JavaScript functions.

Using genes is optional and provides the following advantages in your look and feel:

- Simplified look and feel customization for minor modifications such as color scheme changes.
- Convenient facility to support the generation of dynamic values in associated CSS files or JavaScript files.
- Easier implementation of branding, allowing one look and feel to be used for multiple brands. For example, by creating a new chromosome that provides different values for genes that are used in the look and feel, you can reference that

new chromosome in the look and feel file and provide different appearance and behavior for the existing look and feel.

- Global parameterization capabilities. For example, genes can be used to share a set of global properties to toggle the rendering of certain portal-wide features.

Important: In order to use genes, you must configure the CSS and JavaScript entries in your `skin.xml` to be inlined in the HTML rather than referenced, as described in [Section 7.4.1, "Working with Skins."](#)

Following is an example that highlights one of the primary benefits of genes.

7.3.4.1 Gene Example

In a `.chromosome` file, you could define a gene called "bodyColor" and assign it a value of "red," like this:

```
<gene name="bodyColor">
  <value>#FF0000</value>
</gene>
```

In your CSS file, you could use `bodyColor` as a variable:

```
body
{
  border:1px solid ${bodyColor};
};
```

When the page is rendered in a browser, the inlined style definition becomes:

```
body
{
  border:1px solid #FF0000;
};
```

When you use this gene in your CSS files, you only need to modify the gene value itself to cascade the change throughout all configured CSS files rather than changing the value manually in each CSS file.

7.3.4.2 Creating a Chromosome and Genes

Each skin and theme that uses genes must have its own unique chromosome files, even if they are duplicates of each other. Chromosome files are stored in the same directory as the respective `skin.xml` and `skeleton.xml`.

The `default.chromosome` file is intended to contain the complete set of genes for a particular `skin.xml` file. By using the `default.chromosome` file, you can keep all your genes in one place. When you need to override a particular gene, you can provide an additional `.chromosome` file. If the look and feel framework does not find a gene in the chromosome you specify in the `.laf` file, it looks for it in the `default.chromosome` file.

Note: As a best practice, you should use a one-to-one representation of genes to CSS property values.

To create and use genes:

1. Create a new `*.chromosome` file.
 - a. Select **File > New > Other**.

- b. In the New dialog, open the XML folder and select XML. The New XML File wizard opens.
 - c. Choose **Create XML From XML Schema File** and click **Next**.
 - d. Enter a name for the XML file in the XML File Name dialog and click **Next**.
 - e. In the Select XML Schema File dialog, choose **Select XML Catalog Entry** and in the Key column select **laf-genes-1_0_0.xsd** as the schema. Click **Next**.
 - f. In the Select Root Element dialog, click **Finish**.
 - g. Rename the generated file's extension from .xml to .chromosome.
2. Add genes to the chromosome, using the structure shown in [Section 7.3.4.1, "Gene Example."](#)

Note: Gene values can contain references to other genes.

3. In your skin or theme CSS files, replace the appropriate hard-coded style values with the related gene names, using the `{geneName}` syntax.
4. In your `skin.xml` or `*.theme` files, make sure you reference your CSS or JavaScript files so that they appear inline in the final HTML output, as described in [Section 7.4.1, "Working with Skins."](#)
5. If you want to create multiple versions of chromosomes that provide identically named genes with different values, copy the `default.chromosome`, give it a new filename (such as `holiday.chromosome`). Delete all but the genes in that file you want to override, and provide different values for those genes. Copy the new `.chromosome` file to any skin or skeleton directories for which it will be used.
6. Open your look and feel file in the XML editor, and add specific the `.chromosome` file you want to use for the look and feel by adding one or both of the following attributes to the `<netuix:lookAndFeel>` element:

```
<netuix:lookAndFeel
  skinChromosome="holiday"
  skeletonChromosome="holiday"
```

The look and feel framework does not check to see if a gene you reference is defined in a chromosome. If the framework cannot find a gene, it prints the gene variable in the HTML output.

7.3.4.3 Using the Look And Feel Editor with Genes

The look and feel editor HTML preview does not display CSS values that are represented by gene variables. Any CSS rules that use genes are dropped from your HTML preview. If you want to preview a portal's look and feel that use genes, you can do so by right-clicking `.portal` file and selecting **Run On Server**.

7.4 Creating a New Look and Feel

If you want to do extensive redesign of either the skeleton aspects of your portal (placeholders, layout, and so on) or skin elements (color, borders, buttons and so on), you can create a new look and feel file based on a skin and skeleton templates included with WebLogic Portal.

Tip: WebLogic Portal recommends using the bighorn-template look and feel to create any new look and feel files. It supports genes and provides a complete set of look and feel files that take advantage of the features of the latest version of WebLogic Portal.

You can copy all of the resources associated with a specific skin and skeleton and modify most or all of them to suit your needs. This option should be used only if you need to do extensive modifications that cannot be accomplished with CSS files or genes.

Caution: When creating new a new look and feel file, use skins or skeletons prefaced with the name "bighorn". Other deprecated templates are available for use in WebLogic Portal; however, these deprecated templates do not support new look and feel features such as genes and chromosomes. For information on deprecated Look and Feels, see [Section 7.2.3, "Adding Deprecated Look and Feel Components to a Web Project."](#)

To create a new look and feel based on a provided template:

1. In Navigator view, right-click your portal web project and choose **New > Look And Feel**. A wizard guides you through the rest of the process.
2. Name your look and feel file and chose next, the Look And Feel Details page displays as shown in [Figure 7-7](#).

Figure 7-7 *Creating a Look And Feel*

1. In the Skin field, use the ellipsis icon to navigate to the skin you would like to use and select the `skin.xml` file.
2. To copy the skin as a template, mark the **Copy skin as template** check box, and navigate to the project location where you would like to save the skin files.
3. In the Skeleton field, use the ellipsis icon to navigate to the skeleton you would like to use and select the skeleton directory.

4. To copy the skeleton as a template, mark the **Copy skeleton as template** check box, and navigate to the project location where you would like to save the skeleton files.
5. Click **Finish**. The new look and feel is opened in the look and feel editor.
6. Create a 100x75 px `.gif` that represents the look and feel in the same directory as the `*.laf` file. This image appears in the visitor tools when end users select look and feels for their own customized view of a portal desktop and must have the same name as your `*.laf` file, but with a `*.gif` extension.

For example, create a gif file called `telecom.gif` to represent a look and feel file called `telecom.laf`. This image appears in the visitor tools when end users select look and feels for their own customized view of a portal desktop.

The following sections provide guidance on working with your new look and feel.

- [Section 7.4.1, "Working with Skins"](#)
- [Section 7.4.2, "Working with Skeletons"](#)

Note: See [Section 7.8, "The Look And Feel Editor"](#) for information about using the look and feel editor.

7.4.1 Working with Skins

Skins are collections of images, cascading style sheets (CSS), and JavaScript files that allow changes to be made to the look and feel of a portal without modifying the portal components directly. References to images and styles are made in the skin rather than being hard coded into the portal definition.

Skins, combined with skeletons, make up a portal desktop's look and feel.

Each skin has its own `/images`, `/css`, and `/js` (JavaScript) subdirectories that contain its skin resources. Create and store your look and feel images, CSS files, and JavaScript files in these directories. You can also store global look and feel resources in a common location outside of a skin's root directory. A skin knows which resources to use based on its `skin.xml` file, stored in the skin's root directory. The `skin.xml` tells the skin which paths to look in to find image, CSS, and JavaScript files that the look and feel uses.

Use the following guidelines when configuring a `skin.xml` file:

- The `<target-skeleton>` section specifies the skeleton to use if no skeleton is specified in the look and feel file.
- The `<images>` section lets you set the paths the skin should use to find images. For example:

```
<skin>
<images>
  <search-path>
    <path-element>images</path-element>
    <path-element>../default/images</path-element>
  </search-path>
</images>
</skin>
```

This block tells the skin to look in the skin's images subdirectory, and for any files it cannot find in that directory to look for in the default skin's images directory.

Search paths are relative to the skin directory.

- The <render-dependencies> section lets you determine how CSS styles and JavaScript functions are inserted into the <head> region of the HTML.
 - The <search-path> child element of <links>, <scripts>, and <styles> serves the same purpose and behaves the same as it does for images.
 - Use the <links> section if you want to insert references to CSS files in the HTML <head> area.

- To reference JavaScript files:

```
<html>
<scripts>
  <script src="my.js" type="text/javascript" />
  <search-path>
    <path-element>js</path-element>
    <path-element>../default/js</path-element>
  </search-path>
</scripts>
</html>
```

If you want to inline JavaScript functions in the HTML output (for example, if you are using genes), use the following types of entries:

```
<html>
<scripts>
  <script content-uri="my.js" type="text/javascript" />
</scripts>
</html>
```

or

```
<html>
<scripts>
  <script type="text/javascript">
    alert("Hello World!");
  </script>
</scripts>
</html>
```

- Typically, you should reference your CSS files in your `skin.xml` unless you are using genes. To reference CSS files, use the following types of entries:

```
<html>
<links>
  <search-path>
    <path-element>../bighorn/css</path-element>
  </search-path>
  <link href="general.css" rel="stylesheet" type="text/css"/>
  <link href="menu.css" rel="stylesheet" type="text/css"/>
</links>
</html>
```

- When you are using genes, you need to inline CSS style definitions in the HTML output To inline CSS style definitions, use the following types of entries:

```
<html>
<styles>
  <style content-uri="my.css" type="text/css" />
  <search-path>
    <path-element>css</path-element>
    <path-element>../bighorn/css</path-element>
  </search-path>
```

```
</styles>
</html>
```

or

```
<html>
<styles>
  <style type="text/css">
    .bea-portal-body
    {
      margin: 0px;
      padding: 0px;
      background-color: #ffffff;
      font-family: Verdana, Arial, Helvetica, sans-serif;
      color: #000000;
    }
  </style>
  <search-path>
    <path-element>css</path-element>
    <path-element>../bighorn/css</path-element>
  </search-path>
</styles>
</html>
```

- Create a `structure.xml` file in the skin's root directory, which lets you specify:
 - The paths to any themes that correspond to the skin. You can also set paths to look and feel files that you want to use as themes, assuming you have created a `.theme` file that corresponds to that look and feel.
 - The paths to any resources that correspond to different device classification.
 - Any localization subdirectories.

Following is a sample `structure.xml` file:

```
<?xml version="1.0" encoding="UTF-8"?>
<structure xmlns="http://www.bea.com/servers/portal/framework/laf/1.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.bea.com/servers/portal/framework/laf/1.0.0
  laf-structure-1_0_0.xsd">
  <specializations>
    <localizations>
      <localization locale="ja"/>
    </localizations>
    <classifications path="classifications">
      <classification name="nokia"/>
      <classification name="mozilla"/>
    </classifications>
  </specializations>
  <themes>
    <theme name="red_theme" path="../../redtheme"/>
    <theme name="holiday" path="holiday"/>
  </themes>
</structure>
```

7.4.1.1 Best Practices

- Create a `structure.xml` file in each skin directory. Using this file gives you flexibility in the location of the themes and classification look and feel files, and supports look and feel localization.

- For best performance, reference your CSS and JavaScript files rather than inlining them in the HTML.
- If you are using genes (see [Section 7.5, "Working with Themes"](#)), you must inline the CSS styles and JavaScript functions that use genes.

Note: Skeletons hard code the names of look and feel resources, such as CSS style names, JavaScript functions, and image names. If you rename resources from their default names, you must also modify those names throughout your skeleton JSPs.

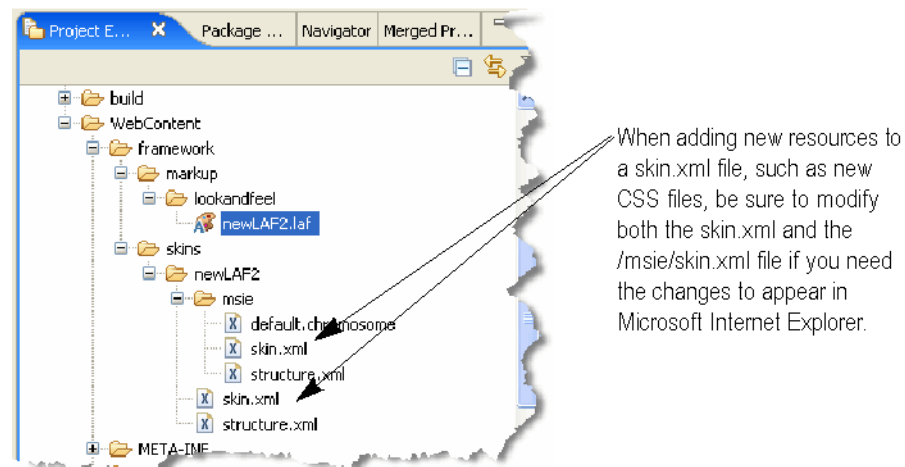
7.4.1.2 Considerations for Microsoft Internet Explorer

Each predefined look and feel includes a specialization directory that includes resources (including a separate `skin.xml`) that are used for Microsoft Internet Explorer. Considerations for Internet Explorer includes specific Javascript for menus, for example.

If you create your own look and feel or make extensive skin modifications, you may require additional browser-specific additions for Internet Explorer. As a best practice, use the existing MSIE classification `skin.xml` to include these additions.

In addition, if you add new skin resources, you will need to add them to both your look and feel `skin.xml` and the `skin.xml` within the MSIE directory. For example, if you add a new CSS file you need to add a link to the new CSS file in both the `skin.xml` file in the `/markup/skins/` directory and the `skin.xml` file in the `/markup/skins/msie/` directory, as illustrated in [Figure 7-8](#).

Figure 7-8 Location of MSIE Specialization Directory



Note: The MSIE specialization directory takes advantage of client-classifications to track different resources. For more information about client-classifications, see [Chapter 12, "Creating Portals for Multiple Device Types."](#)

7.4.1.3 About Portlet Title Bar Icons

The icon graphics used in portlet title bars are stored in a `skin /images` directory. The names of these graphics are declared in the portal web project's

WEB-INF/netuix-config.xml file to determine which of these graphics to use for the portlet's different states and modes (minimize, maximize, help, edit). If you want to change the name of the graphics used for the portlet title bar icons, change the filenames and the corresponding entries for those graphics in netuix-config.xml.

7.4.2 Working with Skeletons

WebLogic Portal provides a set of skeletons in the look and feel files it provides. This section discusses skeletons and provides guidance on developing your own skeletons for your own custom look and feel files.

7.4.2.1 What is a Skeleton?

A skeleton.xml file controls the document type and markup that are emitted by a portal. Skeletons provide the physical boundaries for portal components (such as books, pages, and portlets). A portal web project can have multiple skeletons. When you select a Look & Feel for a desktop, a specific skeleton (and skin) is used.

Each type of portal component, from a desktop to a portlet's title bar, has an associated skeleton JSP file that renders it. Some skeleton files are simple, others are more complex. For example, each desktop uses a skeleton file called desktop.jsp that determines and renders the appropriate DOCTYPE information for your portal. A portlet title bar, on the other hand, has a skeleton file called titlebar.jsp that is more complex and provides references to button graphics.

Each portal component has one or more corresponding skeleton JSP files, located in the <web_project>/framework/skeletons directories. For example, a portlet title bar has a corresponding skeleton JSP file that renders it. When a portal desktop is rendered, the skeleton JSPs for each portal component (in conjunction with any related classes) perform their logic and insert the resulting HTML into the correct hierarchical locations of the HTML file.

Skeletons also use the WebLogic Portal API to get specific types of information, such as presentation context and style overrides that developers may enter in the Properties view for a selected component.

In summary, skeleton JSPs combine API calls, JSP tags, and HTML snippets to ultimately render a portal desktop in HTML. [Example 7-3](#) provides an example of a well-formed skeleton JSP.

Tip: For more information on the skeleton tag library, see the "Portal Skeleton Rendering" in *Oracle Fusion Middleware JSP Tag Java API Reference for Oracle WebLogic Portal*.

Example 7-3 Book.jsp Skeleton from the Bighorn Look and Feel

```

<!-- The book skeleton file renders a HTML <DIV> element for the book. This <DIV> element contains
a menu and book content. The book content is contained within an additional HTML <DIV> element.
-->
<jsp:root version="2.0"
  xmlns:jsp="http://java.sun.com/JSP/Page"
  xmlns:skeleton="http://www.bea.com/servers/portal/tags/netuix/skeleton">
  <jsp:directive.page session="false" />
  <jsp:directive.page isELIgnored="false" />
  <skeleton:context type="bookpc">
    <skeleton:control name="div" presentationContext="${bookpc}"
      presentationClass="wlp-bighorn-book" presentationId="${bookpc.label}">
      <skeleton:child presentationContext="${bookpc.menuPresentationContext}"/>
      <skeleton:control name="div" content="true" presentationContext="${bookpc}"
        presentationClass="wlp-bighorn-book-content">

```

```

        <skeleton:children/>
    </skeleton:control>
</skeleton:control>
</skeleton:context>
</jsp:root>

```

7.4.2.2 Guidelines for Creating Custom Skeletons

Each skeleton you create must have its own `skeleton.xml` file in the your skeleton's root directory. One example of when you might want to create your own skeleton is if you want to provide appropriate rendering on a particular mobile device.

Use the following guidelines when developing your own skeletons:

- If you want to use CSS styles and JavaScript functions in your skeletons to help control behavior, reference those CSS files/styles and JavaScript files/functions in the `skeleton.xml` file the same way you reference them in a `skin.xml` file.
- In the `skeleton.xml`, you can also control content types or doctypes to help ensure proper rendering. For example:

```

<skeleton>
<render-format>
    <preset>HTML_4_01_TRANSITIONAL</preset>
</render-format>
</skeleton>

```

The `<preset>` elements allows values for XHTML_1_0_STRICT, XHTML_1_0_TRANSITIONAL, HTML_4_01_STRICT, HTML_4_01_TRANSITIONAL, HTML_4_01_STRICT_NO_SYSTEM_ID, HTML_4_01_TRANSITIONAL_NO_SYSTEM_ID, HTML_3_2, and NONE.

- You can define your own `<custom-htmlType>` or `<custom-xhtmlType>`, using `<doctype-public-id>` and `<doctype-system-id>` child elements. In addition, the `<custom-xhtmlType>` element provides `<namespace-uri>` and `<schema-system-id>` child elements.
- You can provide content type overrides for individual types of devices, such as mobile devices, using:

```

<content-type-overrides>
    <override classification="nokia" content-type="application/xhtml+xml"
/>
</content-type-overrides>

```

where `classification` is the name of a device type defined in `WEB-INF/client-classifications.xml`; and `content-type` can also use the value `"text/html"`.

- Keep in mind that JSPs are rendered literally. That is, if there are blank lines in the JSP, there will be blank lines in the HTML. At times you may need to sacrifice JSP readability for quality HTML output.
- Create a `structure.xml` file in the skeleton directory, as described in [Section 7.4.1, "Working with Skins."](#) This file lets you reference skeleton themes, skeleton resources for different types of devices (classifications), and localized skeleton subdirectories.

7.4.2.3 Enabling XHTML in a Portal

To render a portal that is XHTML compliant, you must set the portal to emit XHTML and you must develop your portlets using a framework that supports XHTML. Note that by default, portals support HTML 4.01 Transitional.

To enable a portal for XHTML compliance, you need to do one of the following.

- Set the skeleton render format to XHTML_1_0_STRICT, XHTML_1_0_TRANSITIONAL or HTML_4_01_STRICT. See [Section 7.4.2.2, "Guidelines for Creating Custom Skeletons."](#)
- Select an XHTML-compliant look and feel. Currently, WLP supplies the bighorn-xhtml skeleton. This skeleton is used by the Bighorn (XHTML) look and feel. This skeleton is designed to be valid in accordance with the XHTML 1.0 Transitional DTD.

The use of the bighorn-xhtml skeleton does not imply XHTML compliance of content. You must also assure that your portlets are XHTML compliant. Non-compliant portlets in portals using this skeleton will cause rendering errors. XHTML compliance in portlets depends on the framework used to develop the portlet, as described in [Table 7-5](#).

Table 7-5 Portlet Framework Support for XHTML

| Framework | XHTML Support |
|------------|---|
| NetUI | Supports HTML or XHTML rendering. You can set the render format with a flag in <code>beehive-netui-config.xml</code> . For information on setting this flag, see: http://beehive.apache.org/docs/1.0.2/netui/tags/xhtml1.html |
| Struts 1.x | The Struts JSP tags emit HTML and are not XHTML compliant. |
| JSF 1.x | Supports XHTML transitional. Does not support XHTML strict. |

The current AJAX implementation does not support XHTML. The implementation performs DOM operations that are known not to work in some browsers when using an XHTML content type. See "Considerations for AJAX-based Asynchronous Rendering" in *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

7.5 Working with Themes

Themes provide a way to override the look and feel of books, pages, or portlets, allowing those components to look or behave differently than the rest of the portal desktop. For example, you can set a theme on a portlet that displays a jagged portlet border, turns the portlet title bar red, and displays different portlet title bar button images.

You can use themes in skins and/or skeleton files. In the previous example, the skeleton theme would control the jagged portlet border, and the skin theme would contain the modified CSS and title bar images.

You also use themes to develop look and feels for specific devices, such as mobile devices, to be used in conjunction with WebLogic Portal's multichannel framework.

Themes are made up of the same types of resources as regular skins and skeletons. The themes typically provide only the files necessary to override the overall look and feel, though full look and feels can also be used as themes. Themes can also be used as look and feels.

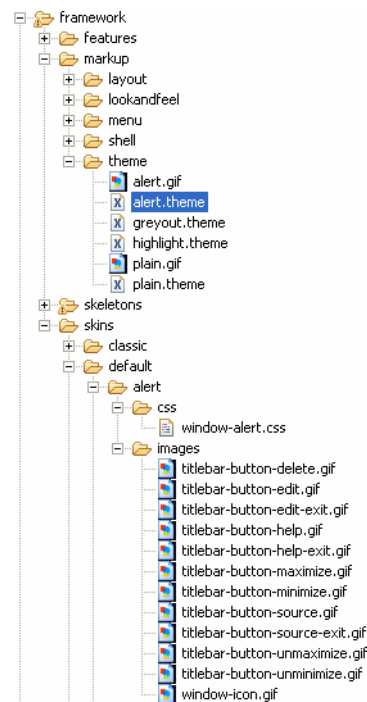
Themes are made up of the following resources:

- The `.theme` file is a simple XML file that provides the name of a theme, and ensures that theme name appears in drop-down menus for selection by developers, portal administrators, or end users.
- Theme resources include supporting files such as `*.gif` files or `*.css` files. The example in [Figure 7-9](#) depicts the "alert" theme which is a subdirectory of the "default" skin, which in turn contains its own look and feel resources. If the alert theme is selected for a book, page, or portlet, the portal framework looks in the `structure.xml` file in the look and feel's `/skin` or `/skeleton` directories for theme locations. If no `structure.xml` file is present, the framework looks for `/alert` skin and skeleton subdirectories under whichever look and feel is being used. If found, the files in the `/alert` subdirectory take precedence over or are used in addition to the files used in the parent look and feel.

For example, if the alert theme provides a `titlebar.jsp` skeleton file, the portal framework uses that skeleton file instead of the parent skeleton's `titlebar.jsp` file.

[Figure 7-9](#) shows the types of resources included in a theme:

Figure 7-9 Theme Resources



This section includes the following topics:

- [Section 7.5.1, "Using Themes with Microsoft Internet Explorer"](#)
- [Section 7.5.2, "Developing a Theme"](#)

7.5.1 Using Themes with Microsoft Internet Explorer

If you are using Internet Explorer, there are additional tasks associated with using themes to modify skins. See [Section 7.4.1.2, "Considerations for Microsoft Internet Explorer"](#) for more information.

7.5.2 Developing a Theme

To develop a theme:

1. In Merged Projects view, navigate to your portal web project's `framework/markup/theme` directory, and copy an existing theme to your file system.
2. Open the copied theme, and modify the name, title, description, and `markupName`. Each theme must have a unique `markupName`.
3. Save the file with a new filename.
4. Create a 100x75 px `.gif` that represents the theme in the same directory as the `.theme` file and have the same name. This gif file must have the same name as your `*.theme` file.

For example, create a gif file called `telecom.gif` to represent a `*.theme` file called `telecom.theme`. This image appears in the visitor tools when end users select themes for their own customized view of a portal desktop.

5. Create the theme directory (using the same, case-sensitive name as the theme `markupName`) and subdirectories. You can create the theme resources anywhere in the portal web project, where it can be used by any look and feel. Create any unique resources that the theme will use, or duplicate and modify any resources you want to override in the parent skin or skeleton.
6. For any skin or skeleton, be sure to create a `structure.xml` file that specifies the path to the current theme, as described in [Section 7.4.1, "Working with Skins."](#)

You can also create a `structure.xml` in the theme directory if you also plan to use the theme as a full look and feel.

If you do not use the `structure.xml` file in your look and feel `/skin` and `/skeleton` directories, store your themes as subdirectories of those skins and skeletons.

Note: If you create any unique resources, be sure to reference them either in the parent skin or skeleton, or in the theme skin or skeleton.

After you create a theme, you can select it in the Properties view for any selected book, page, or portlet.

7.6 Using Look And Feels From Previous Portal Releases

You can use look and feels created in previous WebLogic Portal releases by importing them into your portal web project (into the proper directories).

If you have look and feel files from WebLogic Portal 8.1 and want to use genes, you will need to upgrade your look and feel files. To upgrade a previous look and feel, open the `.laf` file in Oracle Enterprise Pack for Eclipse from your portal web project. You are prompted to create the `skin.xml` and `skeleton.xml` files. After creating these new files, you are ready to use the new WebLogic Portal look and feel features.

Note: In WebLogic Portal 8.1, `skin.properties` files could also contain settings for themes. In WebLogic Portal 9.2 and higher, themes are stand-alone look and feels that use their own `skin.xml` files. If your WebLogic 8.1 `skin.properties` files contain theme details that you want to reuse, you must manually add those theme settings to your theme's `skin.xml` files.

7.7 Troubleshooting Look And Feels

To troubleshoot or fine tune a look and feel, use the following guidance:

- Use the Look And Feel editor to determine which CSS properties you need to modify. See [Section 7.8, "The Look And Feel Editor"](#) for details.
- When viewing a portal desktop in a browser, view the HTML source to help determine where a problem is occurring and where it needs to be fixed, in a skin or skeleton.
 - If the problem is a CSS-related issue, use the HTML source to locate the CSS style that needs to be modified.
 - If the problem is a structural issue, use the HTML source to help pinpoint which shell resource or skeleton JSP needs to be modified.

7.8 The Look And Feel Editor

This section describes the Look and Feel Editor and includes these topics:

- [Section 7.8.1, "Overview"](#)
- [Section 7.8.2, "The Look and Feel Editor Window"](#)
- [Section 7.8.3, "Opening the Look And Feel Editor"](#)
- [Section 7.8.4, "Style Hierarchy Tab"](#)
- [Section 7.8.5, "Style Description Panel"](#)
- [Section 7.8.6, "View Area"](#)
- [Section 7.8.7, "Outline View"](#)
- [Section 7.8.8, "Properties View"](#)
- [Section 7.8.9, "Tips for Using the Look and Feel Editor"](#)

7.8.1 Overview

The look and feel editor lets you interactively edit the text styles used by portal text elements. Technically, the editor modifies Cascading Style Sheet (CSS) files that are referenced by a portal's `skin.xml` file. For example, using the look and feel editor, you can change the size of a heading, the color of a list element, or the padding around a table cell for a portal.

The look and feel editor also lets you change the properties of a portal's look and feel file (`.laf` file), such as the skin and skeleton files that it references.

In addition, the editor shows you, at a glance:

- The CSS cascade for a portal
- The properties assigned to a selected CSS style

- The inherited properties of a selected CSS style
- The elements of the portal's `skin.xml` file

7.8.2 The Look and Feel Editor Window

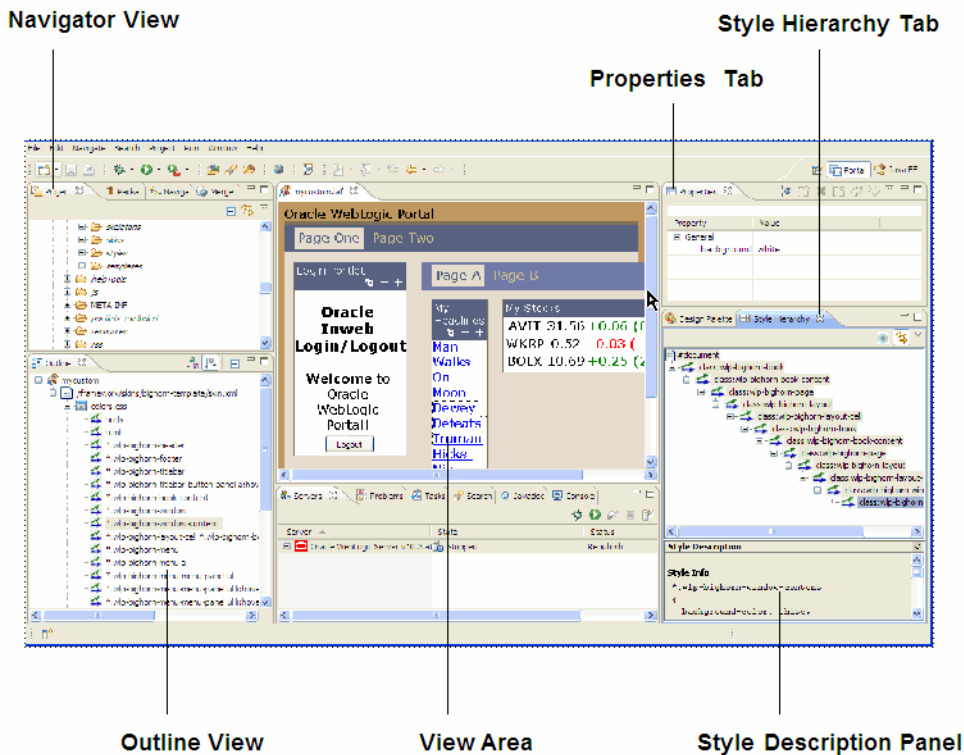
With the look and feel editor, you can experiment with a portal's look and feel and see the results immediately. The look and feel editor lets you interactively edit the text styles used by a portal. Using the look and feel editor, you can select text in a portal and modify the text's characteristics, such as font size, color, padding, and so on. The changes you make are immediately reflected in the editor's view area.

Tip: See [Section 7.8.9, "Tips for Using the Look and Feel Editor."](#)

Remember that a portal's skin helps to define the overall look and feel of a portal. The portal's `skin.xml` file specifies one or more CSS files used by the skin. A portal's HTML text can reference these CSS files and use their style definitions. If you modify the font size for a particular text style, the look and feel editor changes the style's definition inside a CSS file. The change is then immediately reflected in the HTML displayed in the editor's view area.

The following figure shows the parts of the look and feel editor. This section discusses each of these parts in detail.

Figure 7–10 Look And Feel Editor Components



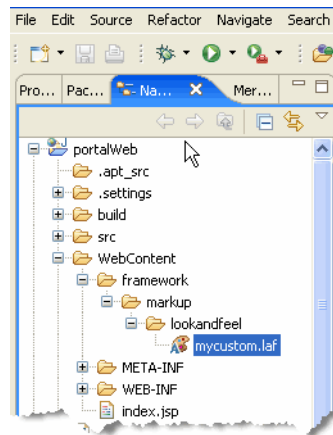
7.8.3 Opening the Look And Feel Editor

The Navigator view displays the file structure of a portal project. Use this panel to locate and select the look and feel file for the portal that you wish to edit. The look and

feel (.laf) file contains references to the skins and skeletons that define a portal's look and feel.

To open the look and feel editor, use the Navigator view to locate the .laf file for the portal you wish to edit. Then, double-click the filename to open the look and feel editor. The .laf files for a portal are located in the portal web project's framework/markup/lookandfeel folder. For example, the mycustom.laf file is shown selected in the Navigator view in [Figure 7-11](#).

Figure 7-11 Selected Look And Feel File



Tip: Use the menu function **Edit > Look and Feel** to quickly change the format of the preview HTML rendered by the Look and Feel Editor. None of these settings are saved when the Look and Feel editor is closed. [Table 7-6](#) describes the Look and Feel menu options.

Note: Oracle Enterprise Pack for Eclipse tries to detect if the look and feel being edited is based on Bighorn or the others and use the appropriate preview HTML. Some legacy Look and Feels are deprecated and require extra configuration to make them available. For information on deprecated Look and Feels, see [Section 7.2.3, "Adding Deprecated Look and Feel Components to a Web Project."](#)

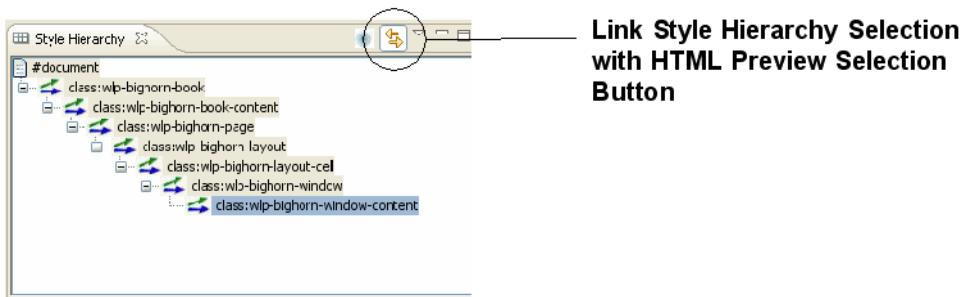
Table 7-6 Look and Feel Menu Functions

| Menu Function | Description |
|-------------------------|---|
| Render Alternative Text | Changes the preview HTML being rendered with the open look and feel to an alternate view. (See the previous note.) |
| Render Bighorn Text | Changes the preview HTML being rendered with the open look and feel to the Bighorn view. (See the previous note.) |
| Render Default Text | Changes the preview HTML being rendered with the open look and feel to the default view. (See the previous note.) |
| Render Custom Text... | Changes the preview HTML being rendered with the open look and feel to custom HTML text that you can enter directly in a dialog. |
| Render Custom URL... | Lets you enter a URL or file for the preview HTML. Use this option to preview the look and feel with your own portal that is running on a server. |

7.8.4 Style Hierarchy Tab

The Style Hierarchy tab shows the CSS cascade for the selected style. The cascade is a hierarchy of CSS styles, defined by the HTML document structure. It is useful to see the cascade, because it can help you to locate and appropriately handle inherited style properties. In [Figure 7–12](#), note that the style `wlp-bighorn-window-content` is below `wlp-bighorn-window` in the hierarchy. This means that `wlp-bighorn-window-content` can inherit properties from `wlp-bighorn-window`, and, potentially, from all other style classes higher up the hierarchy. For more information on inheritance, see [Section 7.8.5.1, "CSS Inheritance."](#) When you select a style in the Style Hierarchy view, its style definitions and inherited style properties appear in the Style Description window, described in [Section 7.8.5, "Style Description Panel."](#)

Figure 7–12 Selected CSS Style



The **Link Style Hierarchy Selection with HTML Preview Selection** button, shown in [Figure 7–12](#), lets you control whether or not the Style Hierarchy view changes to reflect what is selected in the Look & Feel Editor view. When this button is toggled on, the Style Hierarchy view updates its display to show the style hierarchy corresponding to the styles of the selected HTML element in the editor. If this button is toggled off, the Style Hierarchy view does not update when you click in the Look & Feel Editor. This button is toggled on by default. In a typical use case, you can select an element in the editor and then toggle this button off to "lock" the Style Hierarchy view. Then, you can click around in the editor to compare the "locked" Style Hierarchy to other selected elements in the editor.

7.8.5 Style Description Panel

The Style Description panel lets you see at a glance the selected style's properties and its inherited style properties. The Style Info section, shown in [Figure 7–13](#), comes directly from the CSS file in which the style is defined. The Inherited Styles list, also shown, is constructed directly from the document structure of the HTML text that is currently opened in the look and feel editor. The Inherited Styles list shows the style properties and their values that are inherited from styles higher up in the document hierarchy. For instance, you can see that `wlp-bighorn-window-content` inherits the background color property from the `wlp-bighorn-book-content` style.

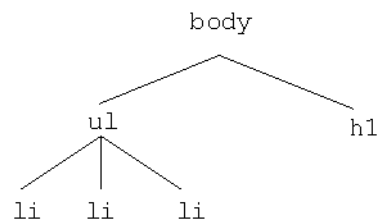
Figure 7–13 Window Shows Inherited Styles

To understand the value of the Inherited Styles list, it helps to have a basic understanding of HTML and CSS.

7.8.5.1 CSS Inheritance

Tip: This section is a very brief overview of CSS inheritance. Many books and web sites are devoted to CSS and cover this important subject in greater depth.

HTML documents are hierarchically organized. In other words, each element of an HTML document can have one or more child elements, one parent element and possibly many ancestor elements. A central feature of CSS is that styles are *inherited* down the HTML document hierarchy. For example, [Figure 7–14](#) depicts a simple HTML document hierarchy:

Figure 7–14 CSS Inheritance

If you would like all the text in this document to be blue, you could define the `body` tag to be blue. Because of CSS inheritance, all of the elements below `body` (specifically, `li` and `h1`) will also be blue. If, on the other hand, you would like everything to be blue except list elements, you could define the `ul` tag to be another color, such as red. Then, all of the `li` elements inherit the color red from their parent, `ul`. At the same time, the `h1` tags will be blue (`h1` tags still inherit their color from `body`).

The look and feel editor shows you all styles that a selected style inherits. Therefore, if you want to change the font size of a style, but font size is not defined in that style,

you can see at a glance from which style font size is inherited. Then, you can easily edit the property, as explained in the next section.

Tip: Without this convenient feature, it would be difficult to decide which styles a given style inherited. Typically, you would have to open and examine the CSS files in the hierarchy to find where a specific style property is defined or possibly overridden.

7.8.5.1.1 Using the Inherited Styles List As mentioned in the previous section, in some cases, the property you wish to modify is not defined in the specific CSS style class associated with the text you have selected. It is possible, for instance, to select a heading in the look and feel editor, but find that font size is not a property of that heading's style. In this case, the property you wish to change might be an inherited property.

The look and feel editor displays and lets you edit any inherited property for a given style. For example, suppose you wish to change the font size of some text. After selecting the style you wish to edit (for example, by clicking the text in the View Area), you then notice that `font-size` is not a property of that text's CSS style. Next you look at the Inherited Styles list, and you discover a style higher up in the cascade in which `font-size` is defined.

At this point, you must decide whether you want to edit the `font-size` property where it is currently defined (higher up in the cascade) or add the property directly to the style of the text you wish to modify. Of course, if you modify a property up the cascade, you might inadvertently change the properties of other text that inherits the same property. It is up to you to make this decision. If you change it directly in the selected style, then the inherited property is overridden, and only that style (and any styles down the hierarchy) receive the new property value (unless it is once again overridden).

Tip: To add or modify a property in an inherited style, double-click the style name in the Inherited Styles list. Then, use the CSS Style Wizard to make your changes.

HTML documents are hierarchically organized. In other words, each element of an HTML document can have one or more child elements, one parent element and possibly many ancestor elements. A central feature of CSS is that styles are inherited down the HTML document hierarchy. For example, the following tree diagram depicts a simple HTML document hierarchy:

If you would like all the text in this document to be blue, you could define the `body` tag to be blue. Because of CSS inheritance, all of the elements below `body` (specifically, `li` and `h1`) will also be blue. If, on the other hand, you would like everything to be blue except list elements, you could define the `ul` tag to be another color, such as red. Then, all of the `li` elements will inherit the color red from their parent, `ul`. At the same time, the `h1` tags will be blue (`h1` tags still inherit their color from `body`).

The look and feel editor shows you all styles that a selected style inherits. Therefore, if you want to change the font size of a style, but font size is not defined in that style, you can see at a glance from which style font size is inherited. Then, you can easily edit the property, as explained in the next section.

7.8.6 View Area

The View area displays the HTML that uses the CSS styles you wish to edit. When you start the look and feel editor, a default HTML page is displayed, showing a representative sample of text elements.

Note: Remember that you start the look and feel editor by opening a look and feel (.laf) file. The HTML file that is shown in the View Area must reference the same CSS files that the .laf file references in its skin. If you load the default HTML page into the editor, this connection is automatically established. However, if you load HTML from a portal into the editor, you must be sure the portal references the same .laf file as the editor.

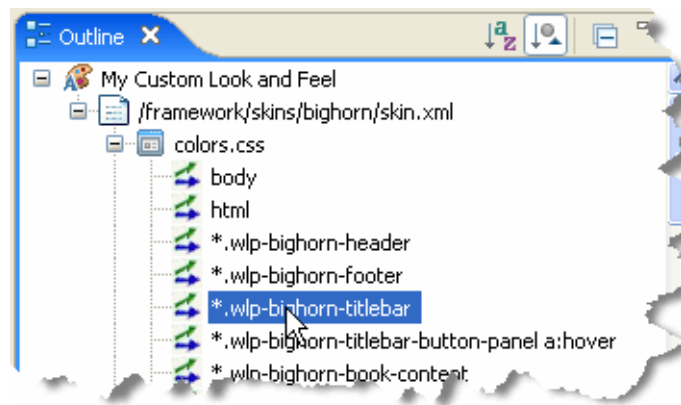
7.8.7 Outline View

The Outline view shows a representation of the files that are referenced by the portal's skin.xml file. In this panel you can edit properties of:

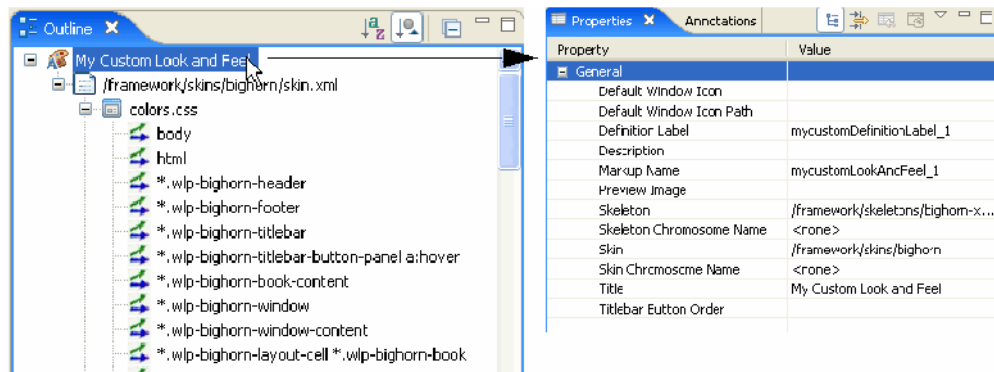
- The look and feel (.laf) file for the portal
- The style properties located in each of the CSS (.css) files referenced by the portal's skin

Figure 7-15 shows a portion of the Document Structure panel. In this figure, the `css/portlet.css` file is expanded to reveal the styles defined in it. You can double-click a style to add or modify its properties. You can also single-click a .css file, style name, or style property to display and edit values in the Properties view.

Figure 7-15 Double-Click a Style to Modify Its Properties



In addition to using this panel to access CSS styles, you can also access and edit the properties of the look and feel file associated with a portal, as shown in Figure 7-16. You can change any of these properties, including picking new skin and skeleton files. Note that the look and feel file node occurs at the top of the document structure.

Figure 7–16 Look and Feel file in the Outline View

7.8.8 Properties View

The Properties view lets you interactively modify values of the selected CSS style or look and feel file. To display properties in the Properties view, you can do one of the following:

- Click on a text element in the HTML file in the View Area.
- Click a CSS style or the look and feel filename in the Outline view.
- Click on a CSS filename in the Outline view, then expand the CSS file in the Properties view to edit the properties.

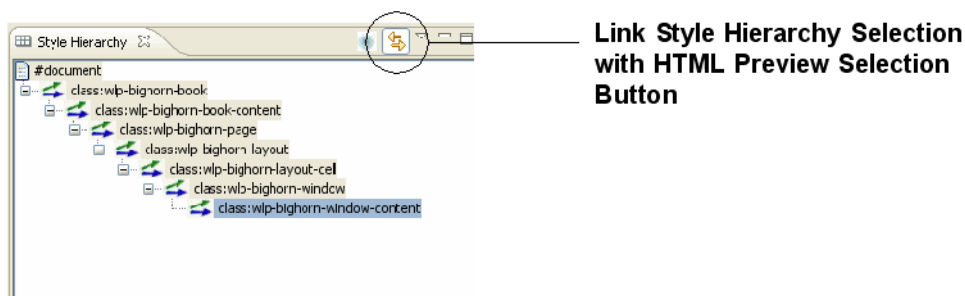
7.8.9 Tips for Using the Look and Feel Editor

This section discusses these useful features of the Look and Feel Editor:

- The Link Style Hierarchy Selection with HTML Preview Selection button
- The Mouse-Over Button

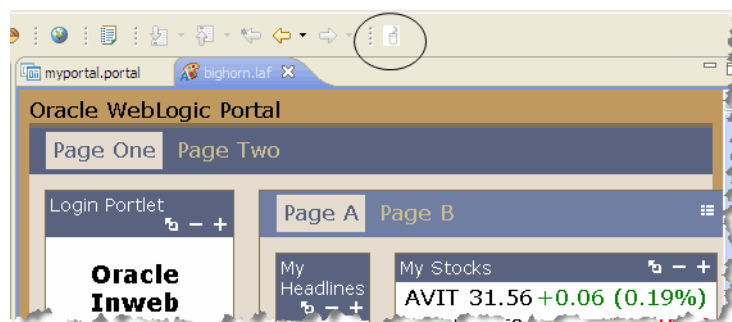
7.8.9.1 Using the Link Style Hierarchy Selection with HTML Preview Selection Button

The **Link Style Hierarchy Selection with HTML Preview Selection** button, shown in [Figure 7–17](#), lets you control whether or not the Style Hierarchy view changes to reflect what is selected in the Look & Feel Editor view. When this button is toggled on, the Style Hierarchy view updates its display to show the style hierarchy corresponding to the styles of the selected HTML element in the editor. If this button is toggled off, the Style Hierarchy view does not update when you click in the Look & Feel Editor. This button is toggled on by default. In a typical use case, you can select an element in the editor and then toggle this button off to "lock" the Style Hierarchy view. Then, you can click around in the editor to compare the "locked" Style Hierarchy to other selected elements in the editor.

Figure 7–17 The Link Style Hierarchy Selection with HTML Preview Selection Button

7.8.9.2 Enabling the Mouse Motion Button

The Mouse Motion button provides a convenient way for you to scan the CSS style information as you move the mouse pointer around the Look and Feel editor window. When the Mouse Motion button, shown in [Figure 7–18](#), is toggled on, the Outline and Properties views update immediately as you move the mouse over the Look and Feel editor window. If you select the **Link Style Hierarchy Selection with HTML Preview Selection** button (described previously), the mouse will also track the Style Hierarchy and Style Description views. When you click in the Look and Feel Editor window, the Mouse Motion button automatically toggles off.

Figure 7–18 Mouse Motion Button

7.9 Look And Feel API

The following packages, documented in *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*, let you perform many programmatic operations on look and feels:

- `com.bea.netuix.laf`
- `com.bea.netuix.laf.genes`
- `com.bea.netuix.laf.genes.mutators`

7.10 Working with Shells

Shells define the header and footer regions of a portal. You can include portlets, JSPs, and HTML files in a shell to define the content displayed in the header or footer. You can create a new shell or modify existing shells.

Note: Shells created with previous versions cannot be modified using the shell editor. You must continue to use an XML editor to modify previously created shells.

This section includes the following topics:

- [Section 7.10.1, "Creating a New Shell"](#)
- [Section 7.10.2, "Modifying a Shell"](#)
- [Section 7.10.3, "Applying a Shell to a Portal Desktop"](#)
- [Section 7.10.4, "Placing Portlets in a Header or Footer"](#)

7.10.1 Creating a New Shell

To create a new shell:

1. In Merged Projects view, copy an existing shell from your portal web project's framework/markup/shells directory to your file system.
2. In the Project Explorer, right-click the shell and select **Open With > Shell Editor**.
3. Within the Outline view, click the shell to view its properties in the Properties view.
4. In the Shell Properties view, modify the title and the description properties.
5. Save the new shell.

7.10.2 Modifying a Shell

You can modify the properties of shell, as well as header and footer properties. One of the most common shell modifications is to add a layout to a header or footer. When you add a layout to a header or footer, you can place portlets within the header or footer, respectively.

To modify a shell:

1. In the Merged Projects view, right-click the shell and select **Open With > Shell Editor**.
2. In the Shell Editor, click the element you want to modify such as the header or footer.
3. In the Properties view, modify the properties that you want to change. For example, choose a Layout Type to use.
4. Save your changes

7.10.3 Applying a Shell to a Portal Desktop

If you want to change the shell that is used by your portal desktop, you must update the Shell property for your portal. For more information about updating portal properties, see [Section 8.2.1, "Editing Portal Properties."](#)

If you have modified or assigned a new shell to your portal desktop, you must reload the shell to ensure your changes are saved.

To reload a shell:

1. Update the shell property using the Properties view.

2. Click the Reload button next to the Shell property drop-down list.

7.10.4 Placing Portlets in a Header or Footer

To place portlets in a header or footer, you must first associate a layout with the respective header or footer.

You may notice that portlets in a header or footer do not display a delete button, even if the portlet specifies that it should have one. When you put a layout inside of a header or footer, the placeholders inside the layout are considered to be "locked." This means that users can't move or delete the contents of the placeholders. Therefore, even if a portlet in a header or footer specifies that it is supposed to have a delete button, the delete button will not render.

7.11 Working with Layouts

Layouts, used by portal pages as well as headers and footers, provide structure that determines where you can place portlets and books within a page. Layouts can be implemented using HTML tables or CSS-based approaches.

WebLogic Portal provides a set of predefined layouts you can use in your portals, available for selection in the Properties view when you select a page in the portal editor. For more information about page properties, see [Section 8.2.2.4, "Page Properties."](#)

In addition to using the predefined layouts that WebLogic Portal provides, you can create custom layouts. A layout includes the following files:

- An XML file with a `.layout` extension - This file maps to a skeleton JSP that renders the final layout in HTML.
- An HTML file with a `.html.txt` extension - Used to simulate the layout in the portal editor and WebLogic Portal Administration Console.

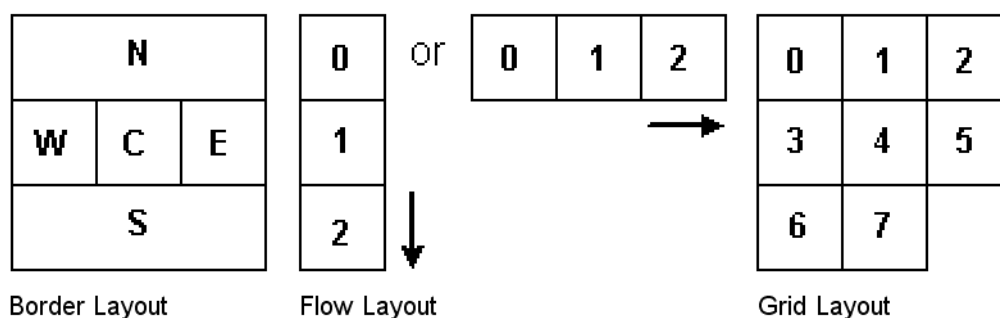
This section describes the following layout tasks:

- [Section 7.11.1, "Creating a Standard Layout"](#)
- [Section 7.11.2, "Creating a Custom Layout"](#)

7.11.1 Creating a Standard Layout

WebLogic Portal provides the following three standard layouts for creating your own layouts: border layout, flow layout, and grid layout, as shown in [Figure 7-19](#).

Figure 7-19 Standard Layouts: Border, Flow, and Grid



You create each type of layout by configuring the `.layout` file to suit your needs. For example, you could create a border layout that uses only North (N), West (W), and East (E) areas.

Each type of standard layout has a corresponding skeleton JSP to render it as HTML: `borderlayout.jsp`, `flowlayout.jsp`, and `gridlayout.jsp`.

If you want to create a layout beyond what the standard layouts provide, you must create a custom layout. See [Section 7.11.2, "Creating a Custom Layout."](#)

To create a standard layout:

1. In Merged Projects view, copy an existing `.layout` file and its corresponding `.html.txt` file from your portal web project's `framework/markup/layouts` in the shared J2EE libraries.
2. Open the layout, and rename it. Be sure to retain the `.layout` extension. Rename the `.html.txt` file using the same name as the new layout, but retain the `.html.txt` extension.
3. In the `.html.txt` file, create an HTML table structure that provides the layout configuration you want.
4. In the `.layout` file, inside the `<netuix:markup>` tag, insert opening and closing `<netuix:gridLayout>`, `<netuix:flowLayout>`, or `<netuix:borderLayout>` tags, depending on the type of layout you want to create. (Replace the existing opening and closing `<netuix:*Layout>` tag.)
5. Inside the opening `<netuix:*Layout>` tag, add (or modify) the following attributes, as shown in [Table 7-7](#).

For example, if you are modifying a copy of the `fourcolumnflow.layout` to create a border layout, replace the `columns` attribute with the `layoutStrategy` attribute and change its value.

Table 7-7 Layout Attributes

| Attribute | Description |
|--------------------------|---|
| Title | Provides the name for selecting the layout in a drop-down menu. |
| Description | Provides a description for the selected layout. |
| Border layout attributes | <p><code>layoutStrategy</code> – Enter <code>order</code> or <code>title</code>.</p> <p>If you enter <code>order</code>, the placeholders are ordered according to the value you put in the <code><netuix:placeholder></code> tag (covered in the following steps). For example: <code><netuix:placeholder>North</netuix:placeholder></code> makes the placeholder the north placeholder.</p> <p>If you enter <code>title</code>, the placeholders are ordered according to the <code><netuix:placeholder> title</code> attribute value. For example: <code><netuix:placeholder title="south" ...></netuix:placeholder></code> makes the placeholder the south placeholder.</p> |
| Flow layout attributes | <code>orientation</code> – Enter <code>vertical</code> or <code>horizontal</code> to determine the direction in which the placeholders are positioned. |

Table 7-7 (Cont.) Layout Attributes

| Attribute | Description |
|----------------------------|---|
| Grid layout attributes | <p>columns – Determines the number of columns in the layout. The number of rows are determined automatically. Do not use the <code>rows</code> attribute if you use the <code>columns</code> attribute.</p> <p>rows – Determines the number of rows in the layout. The number of columns is determined automatically. Do not use the <code>columns</code> attribute if you use the <code>rows</code> attribute.</p> |
| <code>htmlLayoutUri</code> | Provides the path (relative to the project) to the <code>.html.txt</code> file you created. For example, <code>/framework/markup/layout/yourNewLayout.html.txt</code> . |
| <code>markupName</code> | The <code>markupName</code> must be unique among the other layouts. |

1. Inside the `<netuix:*Layout>` tag, add opening `<netuix:placeholder>` and closing `</netuix:placeholder>` tags for each placeholder you want in the layout.

If you are creating a border layout, use no more than five placeholders.

2. In the opening `<netuix:placeholder>` tag of each placeholder, add the following attributes:

title – Enter a title for the placeholder. If you are using a border layout with the `layoutStrategy` attribute set to `title`, enter `north`, `south`, `east`, `west`, or `center` for the title to determine which position of the placeholder in the border layout.

description – Enter a description for the placeholder.

flow – Optional. If you want to control whether the books and portlets are automatically positioned vertically or horizontally when they are added to a layout, enter `true`.

usingFlow – Optional. If you set the `flow` attribute to `true`, enter `vertical` or `horizontal` for this attribute value. This value determines whether books and portlets are positioned on top of each other in the placeholder (vertical) or side by side (horizontal).

width – Optional. Set a width for the placeholder.

markupType – Required. Enter `Placeholder`.

markupName – Required. Used as an ID for the placeholder. Each placeholder must have a unique `markupName` across all layouts.

3. If you are creating a border layout and the `layoutStrategy` attribute is set to `order`, enter `North`, `South`, `East`, `West`, or `Center` as the content between the opening and closing `<netuix:placeholder>` tag to determine each placeholder's position in the layout. For example, `<netuix:placeholder>North</netuix:placeholder>` makes a placeholder the north placeholder.
4. Save the layout file.
5. Create a 100x75 px `.gif` that represents the layout in the same directory as the `.layout` file and have the same name, but with a `*.gif` extension. This image appears in the visitor tools when end users select layouts for their own customized view of a portal desktop.

You can now use the layout in your portals, by selecting a page in the portal editor and selecting the layout in the Properties view.

7.11.2 Creating a Custom Layout

If none of WebLogic Portal's standard layouts suit your needs, you can create a custom layout. When creating a custom layout you need to create three things:

- [Section 7.11.2.1, "The Layout File"](#)
- [Section 7.11.2.2, "The html.txt File"](#)
- [Section 7.11.2.2.1, "The Skeleton JSP"](#)

7.11.2.1 The Layout File

The layout file for a custom layout is the same type of file that is used in creating standard layouts. A layout file is an XML file that must have a `.layout` extension and can live anywhere in the web application directory except `/WEB-INF`.

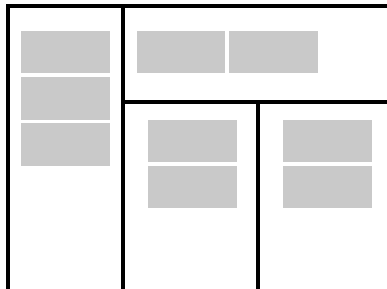
You must create the `.layout` files by hand (using a text or XML editor). The best way to get started is by copying an existing layout, located in the shared J2EE library in your portal web project's `/framework/markup/layout` directory.

7.11.2.2 Example of a Custom Layout

The following example uses a custom layout with one vertical column on the left, with a spanning row at the right with two vertical columns underneath.

The layout looks something like this, as shown in [Figure 7–20](#).

Figure 7–20 Custom Layout



As a best practice, store your custom layout and its supporting files in a separate directory. This example assumes that your custom layout is stored in the `/webContent/custom/layout/`.

Note: The the easiest way to create a new `*.layout` file is to copy one from another layout.

In this example, the layout file is called `example.layout` as shown [Example 7–4](#).

This example layout uses the generic `netuix:layout` tag since `gridLayout`, `borderLayout`, or `flowLayout` cannot construct the desired layout. It has four placeholders, named "left", "upper", "lower_left" and "lower_right".

Note: The `skeletonUri` attribute is important for custom layouts, because you will often develop a custom skeleton JSP to render your custom layout. This attribute tells the portal rendering framework which JSP to use.

Example 7-4 Sample Code for the example.layout File

```

<?xml version="1.0" encoding="UTF-8"?>
<netuix:markupDefinition
xmlns:netuix="http://www.bea.com/servers/netuix/xsd/controls/netuix/1.0.0"xmlns:xsi="http://www.w3.
org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.bea.com/servers/netuix/xsd/controls/netuix/1.0.0 markup-netuix-1_0_
0.xsd">
<netuix:locale language="en"/>
  <netuix:markup>
    <netuix:layout markupType="Layout"
      markupName="exampleLayout"
      title="Example Custom Layout"
      description="Example with Left, Upper, Lower Left and Lower Right placeholders"
      skeletonUri="/custom/layout/examplelayout.jsp"
      htmlLayoutUri="/custom/layout/example.html.txt"
      iconUri="/framework/markup/layout/example.gif"
      thumbnailUri="/framework/markup/layout/example.gif" type="example">
      <netuix:placeholder markupType="Placeholder"
        markupName="exampleLayout_left" title="left" usingFlow="false" description="Left Side
placeholder" width="30%">
      </netuix:placeholder>
      <netuix:placeholder markupType="Placeholder"
        markupName="exampleLayout_upper" title="upper" usingFlow="true" flow="horizontal"
description="Upper placeholder with horizontal flow" width="70%">
      </netuix:placeholder>
      <netuix:placeholder markupType="Placeholder"
        markupName="exampleLayout_lowerLeft" title="lower_left" usingFlow="false" description="Lower
Left placeholder (below Upper)" width="35%">
      </netuix:placeholder>
      <netuix:placeholder markupType="Placeholder"
        markupName="exampleLayout_lowerRight" title="lower_right" usingFlow="false" description="Lower
Right placeholder (below Upper)" width="35%">
      </netuix:placeholder>
    </netuix:layout>
  </netuix:markup>
</netuix:markupDefinition>

```

7.11.2.2.1 The Skeleton JSP This example requires a custom skeleton to do the rendering (as specified by the skeletonUri attribute). You must create this JSP, copying it to any look and feels in which the layout is to be used. As with the layout file, the easiest way to create a custom layout JSP is to copy an existing one.

Example 7-5 displays what the custom skeleton JSP (/framework/markup/layout/examplelayout.jsp) looks like:

Example 7-5 exampleLayout.jsp

```

<jsp:root
version="2.0"
xmlns:jsp="http://java.sun.com/JSP/Page"
xmlns:c="http://java.sun.com/jsp/jstl/core"
xmlns:skeleton="http://www.bea.com/servers/portal/tags/netuix/skeleton" >
<jsp:directive.page session="false" />
<jsp:directive.page isELIgnored="false" />
<skeleton:context type="layoutpc">
<skeleton:control name="table" presentationContext="${layoutpc}" class="wlp-bighorn-layout"
  cellspacing="0" cellpadding="0" width="100%" >
<c:set var="ph" value="${layoutpc.placeholders}"/>
<c:set var="left" value="${ph[0]}"/>

```

```

<c:set var="upper"      value="{ph[1] }"/>
<c:set var="lowerLeft"  value="{ph[2] }"/>
<c:set var="lowerRight" value="{ph[3] }"/>
<tr>
<td rowspan="2" valign="top" width="{left.width}">
  <skeleton:child presentationContext="{left}"/>
</td>
<td colspan="2" width="{upper.width}">
  <skeleton:child presentationContext="{upper}"/>
</td>
</tr>
<tr>
  <td valign="top" width="{lowerLeft.width}">
    <skeleton:child presentationContext="{lowerLeft}"/>
  <td valign="top" width="{lowerRight.width}">
    <skeleton:child
presentationContext="{lowerRight}"/>
  </td>
</tr>
</skeleton:control>
</skeleton:context>
</jsp:root>

```

The custom layout is now functionally complete. The `html.txt` file has not yet been created, but you can test the layout. To do this, create a portal file, select a page, and in the Properties view select the custom layout in the Layout field.

Note: If you change your `.layout` file after you have used it in the `.portal` file, you need to reload the changed layout. To reload a layout, update the layout property using the Properties view. Then click Reload. then click Reload (next to the layout property drop-down list).

7.11.2.2.2 The `html.txt` File The `.html.txt` is an HTML snippet used by Oracle Enterprise Pack for Eclipse to give a visual representation of what the layout looks like, so the developer or administrator can place the portlets in the correct placeholders.

In this example, the custom `.html.txt` file is `/framework/markup/layout/example.html.txt` and should look something like the example shown in [Example 7-6](#):

Example 7-6 Sample `example.html.txt` Code

```

<table class="portalLayout" id="thePortalLayout" width="100%" height="100%">
<tr>
<td class="placeholderTD" valign="top" rowspan="2" width="30%">
<placeholder number="0"/>
</td>
<td class="placeholderTD" valign="top" colspan="2" width="70%">
<placeholder number="1"/>
</td>
</tr>
<tr>
<td class="placeholderTD" valign="top" width="35%">
<placeholder number="2"/>
</td>
<td class="placeholderTD" valign="top" width="35%">

```



```
<placeholder number="3"/>
</td>
</tr>
</table>
```

7.12 Working with Navigation Menus

Menus determine the navigation style used for your portal pages. WebLogic Portal provides two types of menus: single-level for single rows of tabs and multi-level for nested, drop-down style page navigation.

- Single Level Menu - Provides visible layering of book and page links. Any sub-books and pages appear in rows below the main book navigation.
- Multi Level Menu - Provides a single row of tab-like links for the books and pages at the level you apply the Multi Level Menu. Any sub-books and pages appear in a drop-down list for selection. The Multi Level Menu implements JavaScript functionality contained in the skins.

If you want navigation menu behavior other than what is provided with the default menus, modify the `singlelevelmenu.jsp` or `multilevelmenu.jsp` skeletons in your look and feel `/skeletons` directory by copying those files from the shared J2EE library to your file system and making the desired modifications. If you are modifying the multi-level menu behavior, you may also need to modify the skin's `menu.js` file located in your skin's `/js` subdirectory.

7.12.1 Using Images for Page Tabs

To use images on page tabs (Rollover Image, Selected Image, Unselected Image in the Properties view for a selected book), enter a path to the images that is relative to the look and feel's image search paths specific in the `skin.xml` file.

For example, if your `skin.xml` image search path is

```
<path-element>images</path-element>
```

and your menu images are stored in your skin's `/images` directory, enter the name of the image file in the Properties view. If your menu images are stored in an `/images` subdirectory of your portal web project, enter a path to the graphic like this: `../../../../images/my_rollover.gif`.

7.13 Building User Interfaces to Address Accessibility Guidelines

Many organizations are required to provide web sites that meet industry or government standards for supporting people with special needs. And even if you do not have specific requirements, it is just good business to design your site to serve the needs of a diverse audience.

WebLogic Portal provides a flexible architecture that supports the design, development, and management of accessible portals and applications, for example, the ability to target specific user interfaces based on user preferences or browser and request attributes.

To learn more about building user interfaces with WebLogic Portal, see [Section 7.2, "Working with Look And Feel Files."](#)

This section contains information on the following subjects:

- [Section 7.13.1, "Accessibility Checkpoints"](#)
- [Section 7.13.2, "W3C Web Content Accessibility Guidelines"](#)

- [Section 7.13.3, "Government Regulations and Standards"](#)
- [Section 7.13.4, "Accessibility Evaluation and Testing Tools"](#)

7.13.1 Accessibility Checkpoints

When you develop web sites, you can use the following general guidelines to facilitate accessibility. For a complete list, refer to the industry or government regulation relevant for your implementation.

- **Text Tags** – Provide a text equivalent for every non-text element (for example, using "alt", "longdesc", or in element content).
- **Multimedia Presentations** – Synchronize equivalent alternatives for any multimedia presentation.
- **Color** – Design web pages so that all information conveyed with color is also available without color. (for example, from context or markup.)
- **Readability (style sheets)** – Organize documents so they are readable without requiring an associated style sheet.
- **Server-Side Image Maps** – Provide redundant text links for each active region of a server-side image map.
- **Client-Side Image Maps** – Provide client-side image maps instead of server-side image maps except where the regions cannot be defined with an available geometric shape.
- **Data Table (simple row and column headers)** – Identify row and column headers for data tables
- **Data Tables (multiple levels of row and column headers)** – Use markup associate data cells and header cells for data tables that have two or more logical levels of row or column headers.
- **Frames** – Entitle frames with text that facilitates frame identification and navigation.
- **Flicker Rate** – Design pages to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
- **Text-Only Alternative** – Provide a text-only page, with equivalent information or functionality, to make a web site comply with the provisions of this section when compliance cannot be accomplished in any other way. You must remember to update the content of the text-only page whenever the primary page changes.
- **Scripts** – When pages use scripting languages to display content, or to create interface elements, you must identify the information provided by the script with functional text that can be read by assistive technology.
- **Applets and Plug-ins** – When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, you must provide a link in the page to a plug-in or applet that complies with Section 508 §1194.21(a) through (l).
- **Electronic Forms** – When electronic forms are designed to be completed online, you must create the form to allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.
- **Navigation Links** – Provide a method that permits users to skip repetitive navigation links.

- Time Delays – When a timed response is required, you must alert users and give them sufficient time to indicate more time is required.

7.13.2 W3C Web Content Accessibility Guidelines

- <http://www.w3.org/WAI/w3c.htm> - Checklist of Checkpoints for Web Content Accessibility Guidelines 1.0
- <http://www.w3.org/TR/WCAG10/full-checklist.html>

7.13.3 Government Regulations and Standards

Table 7–8 lists some government regulation resources.

Table 7–8 Resources for Government Standards

| Country | Resource |
|----------------|---|
| United States | http://www.section508.gov |
| Canada | http://www.tbs-sct.gc.ca/clf-nsi/inter/inter-01-tb_e.asp |
| United Kingdom | http://www.w3.org/WAI/Policy/#UK |

7.13.4 Accessibility Evaluation and Testing Tools

These tools allow you to validate web page code. They do not repair your code, but they do provide reports on what does and does not need to be fixed, as relating to HTML 4.0, W3C, Section 508 and general accessibility issues.

7.13.4.1 W3C Web Accessibility Initiative

- W3C Web Accessibility Initiative's Web Tools Page - Evaluation, Repair, and Transformation Tools for Web Content Accessibility: <http://www.w3.org/WAI/ER/existingtools.html>
- W3C HTML Validator - The W3C HTML Validation Service checks HTML documents for conformance to W3C HTML and XHTML recommendations and other HTML standards: <http://validator.w3.org/>
- CSS Validator - If you are using Cascading Style Sheets (CSS), then use the CSS Validator: <http://jigsaw.w3.org/css-validator/>

For more information, visit the W3C's Evaluation & Repairs Tools page: <http://www.w3.org/TR/2000/WD-AERT-20000426>

7.13.4.2 Lynx Viewer

The Lynx Viewer generates an HTML page that indicates how much of the content of your page would be available to Lynx, which is a text-only browser. In addition to showing how useful a site would be for a visually-impaired person, it is also a good indicator for anyone with older technology, see <http://www.delorie.com/web/lynxview.html>.

Developing Portals Using Oracle Enterprise Pack for Eclipse

Before you perform the tasks described in this chapter, make sure you have already performed the setup steps described in [Chapter 4, "Setting up Your Portal Development Environment."](#) Also keep in mind that you must have the framework for your portal in place, including look and feel elements, any required CSS files, and so on, before you start building your portal.

This chapter includes the following sections:

- [Section 8.1, "Creating a Portal"](#)
- [Section 8.2, "Setting Portal Component Properties"](#)
- [Section 8.3, "Copying J2EE Library Files into a Project"](#)
- [Section 8.4, "Custom Controls in Page Flows"](#)
- [Section 8.5, "Deploy and View a Portal"](#)
- [Section 8.6, "Working with URLs"](#)
- [Section 8.7, "Working with Encoding in HTTP Responses"](#)
- [Section 8.8, "Cache Management in Oracle Enterprise Pack for Eclipse"](#)
- [Section 8.9, "Cache Management With Oracle Coherence"](#)
- [Section 8.10, "Improving WebLogic Server Administration Console Performance on a Managed Server"](#)
- [Section 8.11, "Behavior of the "Return to Default Page" Attribute"](#)
- [Section 8.12, "Customizing Problem Validation Settings"](#)
- [Section 8.13, "Enabling Placeable Movement"](#)

8.1 Creating a Portal

When you create a portal, WebLogic Portal creates a *portal file*—an XML file with a `.portal` file extension. The `.portal` file is the central defining file of a portal, with references to all the major components of the portal: the desktops, books, pages, portlets, and so on.

This section includes the following topics:

- [Section 8.1.1, "Add a Page or Book to Your Portal"](#)
- [Section 8.1.2, "Creating a Standalone Book or Page"](#)

- [Section 8.1.3, "Extracting an Existing Page or Book to Re-Use"](#)
- [Section 8.1.4, "Adding a Book or Page Reference \(Content\)"](#)
- [Section 8.1.5, "Rearranging Books and Pages"](#)
- [Section 8.1.6, "Adding Render Dependencies to Books and Pages"](#)

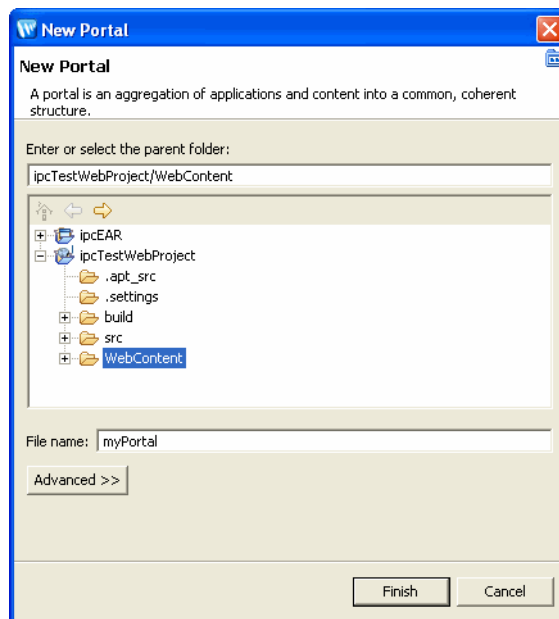
To create a portal and its accompanying `.portal` file, perform these steps:

1. If the Portal perspective is not already open, select it by choosing **Window > Open Perspective > Portal**.
2. Navigate to the web content directory of your Portal Web Project (by default it is named `WebContent`); right-click and then select **New > Portal**.

The New Portal dialog displays, as shown in [Figure 8–1](#).

Because you started this wizard by right-clicking the web content directory, the parent folder field automatically displays that directory name.

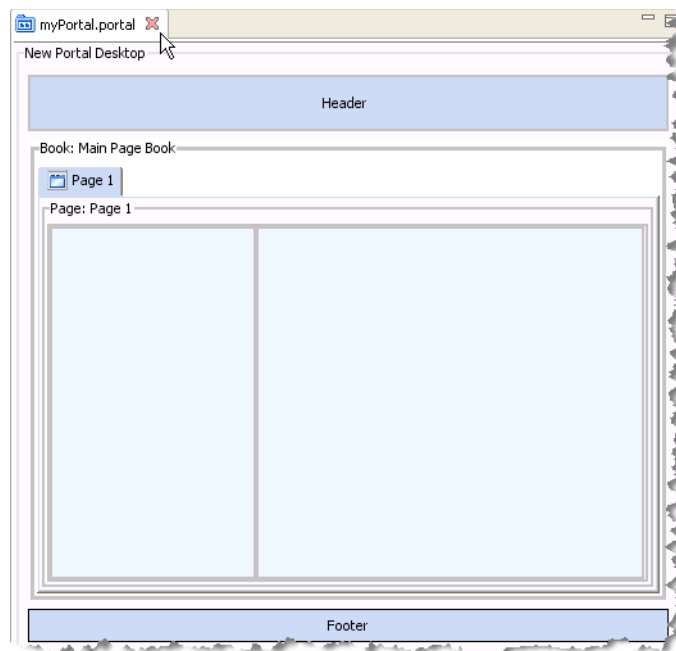
Figure 8–1 *New Portal Dialog*



You must locate your portal file in a *web content* directory that is subordinate to the *web project* directory. The default web content directory name is `WebContent`, and is assigned when you use the Portal Web Project Wizard. You can change the name of your web content directory if you wish; for more information, refer to [Section 4.6.3, "New Portal Web Project - Web Module Dialog."](#)

3. In the **File name** field, enter the name that you want to assign to the portal.
A file type of `.portal` is required for portals; you can type the `.portal` extension to the portal's name if you wish, but WebLogic Portal automatically adds the extension if you don't enter it.
4. Click **Finish**.

The wizard adds the portal to the specified folder in the Portal Web Project and a view of the portal displays in the editor, as shown in [Figure 8–2](#).

Figure 8–2 Portal Displayed in 44

The created portal includes a **desktop**, **header**, **footer**, **book**, and **page**. A *desktop* is a user-specific view of the portal content. A portal can support many desktops. A single portal might support an employee-specific desktop, a customer-specific desktop, and others, where each desktop exposes different kinds of content to different sets of users. Any part of a portal can be included or excluded from a desktop, including a book, a page, a specific application, or an individual link.

Desktops can also define the look and feel attributes of a portal. Desktops can be associated with a particular skin that defines the color scheme, fonts, and images used. Desktops also contain a *header* and *footer*—you can place images, text, or any web content in these areas to give consistency to the look and feel of a desktop.

Typically, you use Oracle Enterprise Pack for Eclipse to develop a portal and its key components; then you use the WebLogic Portal Administration Console to create specific desktops using the portal as a template. For information about creating desktops in the next phase of development, refer to [Chapter 15, "Managing Portal Desktops."](#)

You use *books* to organize your content and navigation in a hierarchical manner. Books can contain other books or pages. In a browser, a book is rendered as a set of tabs or links. Each portal contains a main book called, by default, "Main Page Book." A *page* consists of a set of columns and/or windows that organize the actual content of your portal. You navigate to a page by clicking on an individual tab or a link. You can create books and pages using either Oracle Enterprise Pack for Eclipse or the WebLogic Portal Administration Console.

8.1.1 Add a Page or Book to Your Portal

This section describes how to add a second page to the portal's main book. When the portal is rendered in a browser, the two pages will appear as two clickable tabs. You can add a new page using a few different methods; this description describes a drag and drop method.

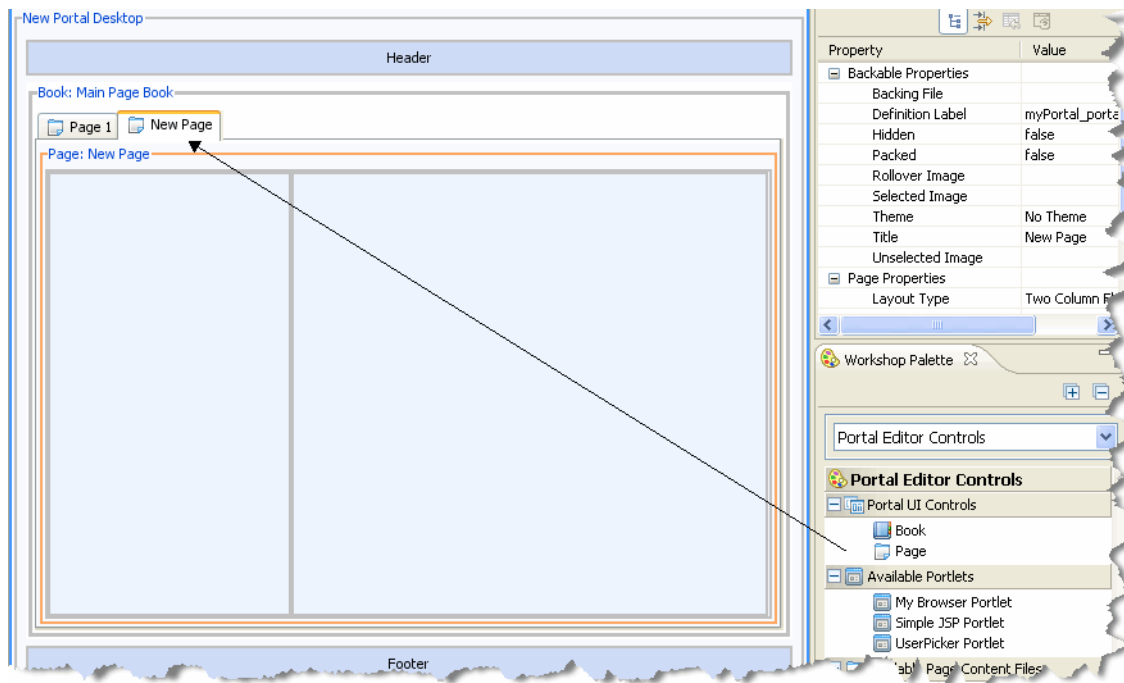
Note: The procedure for adding a book to a portal is almost identical to the procedure for adding a page. Rather than include both procedures here, we explain how to add a page and, where appropriate, highlight any differences between the two tasks.

To add a page to a portal, perform these steps:

1. From the Design Palette, drag and drop the Page icon to the location where you want to add it. [Figure 8-3](#) shows the result when you add a new page to the right of the default portal page.

Tip: If you do not see the Palette view, select **Window > Show View > Design Palette**.

Figure 8-3 Adding a Page to a Portal in Oracle Enterprise Pack for Eclipse



8.1.2 Creating a Standalone Book or Page

You can create a standalone book or page; when you do this, the book or page information is kept in a separate `.book` or `.page` file and is not embedded within the `.portal` file. Standalone books and pages are very useful elements in your portal development environment. For example, in a team development environment, developers can create individual books or pages that can be managed separately and then added to the portal at a later time. Also, if you want to create books and pages that are accessible to remote consumer applications, you must create the book or page as a standalone `.book` or `.page` file using Oracle Enterprise Pack for Eclipse.

Note: The procedure for creating a standalone book is almost identical to the procedure for creating a standalone page. Rather than explain both procedures here, we explain how to create a standalone page and, where appropriate, highlight any differences between the two procedures.

To create a standalone page in a portal, perform these steps:

1. In your portal web project, navigate to the web content folder (typically named `WebContent`) or to a folder within the web content folder.

You must locate books and pages in a *web content* directory or sub-directory that is subordinate to the *web project* directory. The default web content directory name is `WebContent`, and is assigned when you use the Portal Web Project Wizard. You can change the name of your web content directory if you wish; for more information, refer to [Section 4.6.3, "New Portal Web Project - Web Module Dialog."](#)

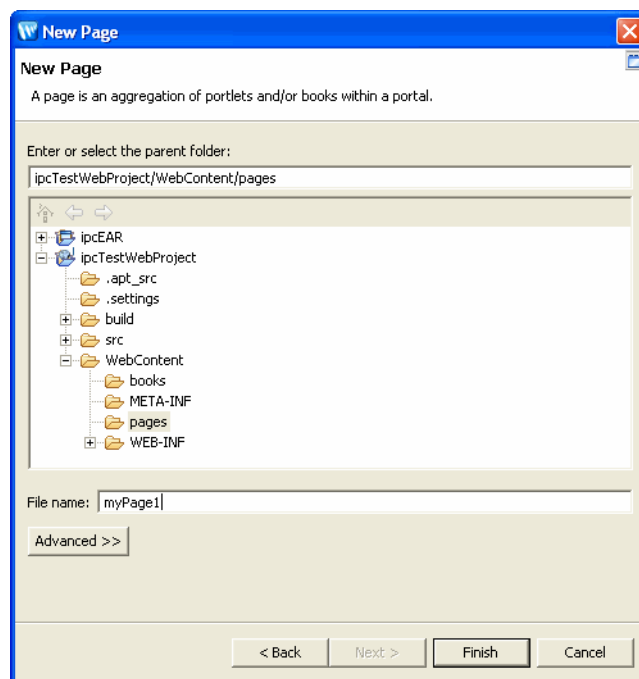
2. Select **File > New > Other**.
3. In the New – Select a Wizard dialog, open the **WebLogic Portal** folder, select **Page**, and click **Next**.

In the New Page dialog, note that the parent folder auto-fills the path from which you started the wizard.

4. Enter a name for the new page; an example is shown in [Figure 8–4](#).

A file type of `.page` is required for standalone pages (or `.book` for standalone books); you can type the `.page` extension if you wish, but WebLogic Portal automatically adds the extension if you don't enter it.

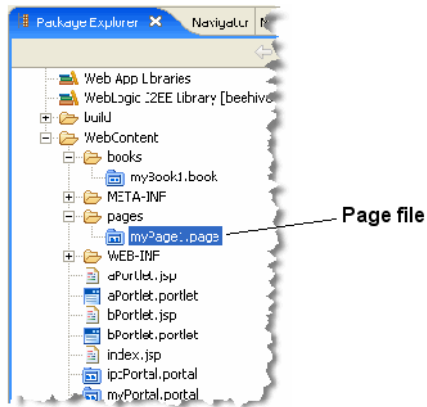
Figure 8–4 New Page Dialog



1. Click **Finish**.

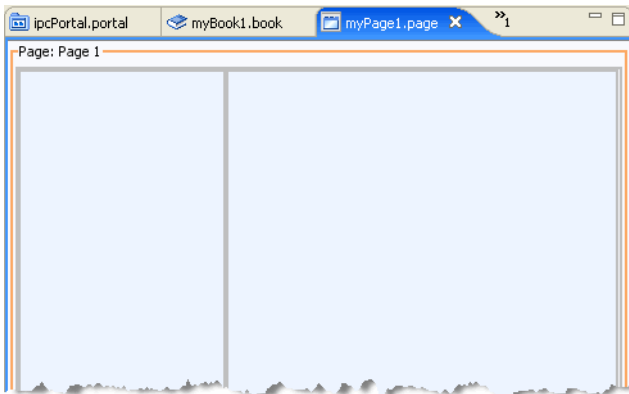
The new page is added to the portal web project in the folder you specified, as shown in [Figure 8-5](#).

Figure 8-5 A New Page File



In addition, the page opens in the editor, as shown in [Figure 8-6](#).

Figure 8-6 Page File Displayed in the Editor



8.1.3 Extracting an Existing Page or Book to Re-Use

You can extract an existing page and then re-use it in other portal applications within your web project. When you extract an existing page, all of its contents are extracted as well (portlets and so on).

To extract an existing page or book:

1. Highlight the book or page you want to extract.
2. Right-click and select **Extract Page/Book to New File**.
3. In the Save As dialog, navigate to the folder where you want to save the book or page. Be sure the location is in the same web project as the portal from which you are extracting.

8.1.4 Adding a Book or Page Reference (Content)

Use this selection to add a reference to an existing book or page, into a book or page in your portal.

8.1.4.1 Adding a Book or Page Reference from the Portal Editor

To add a book or page reference from the Portal Editor:

1. Highlight the portal element to which you want to add a book or page reference.
An orange border appears around a selected element.
2. Right-click and select **Insert > New Book Content** or **Insert > New Page Content**.

The Choose a Book dialog or Choose a Page dialog displays, as appropriate; all .book/ .page files for the web project are listed.

Note: The Insert menu option appears only when this selection is valid, depending on the selected portal element.

3. Select the desired .book or .page file, then click **OK**.

The Oracle Enterprise Pack for Eclipse window updates, adding a Book (or Page) Content node in the Outline view and displaying the content properties in the Properties view.

8.1.4.2 Adding a Book or Page Reference Using the Outline View

To add a book or page reference from the Outline View:

1. Right-click the element to which you want to add book or page content and select **Insert > New Book Content** or **Insert > New Page Content**.

The Choose a Book dialog or Choose a Page dialog displays, as appropriate; all .book/ .page files for the web project are listed.

Note: The Insert menu option appears only when this selection is valid, depending on the selected portal element.

2. Select the desired .book or .page file, then click **OK**.

The Oracle Enterprise Pack for Eclipse window updates, adding a Book (or Page) Content node in the Outline view and displaying the content properties in the Properties view.

8.1.5 Rearranging Books and Pages

You can change the order of books and pages. For example, if the main page book contains a page and a book in the following order:

Home Page | My Book

you can change the order to:

My Book | Home Page

To change the order of books and pages, right-click the book or page that you want to move in the Outline view, and choose **Move Up** or **Move Down**. The book or page moves up or down in the Outline view, and the horizontal reordering occurs in the portal editor.

Rearranging books and pages does not rearrange them in any portal desktops that you already created with the WebLogic Portal Administration Console. For instructions on rearranging those books and pages, refer to [Chapter 15, "Managing Portal Desktops."](#)

8.1.6 Adding Render Dependencies to Books and Pages

In a rendered HTML page, the proper place to include most types of resources, such as script files or style sheet references, is in the header of the document. Books and pages sometimes need to specify resources that are required for rendering the book or page. The WLP render dependencies feature is used for this purpose.

Note: Portlets can also specify render dependencies. For more detailed information and background on render dependencies (also called portlet dependencies), see "Portlet Dependencies" in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

When attaching render dependencies to books and pages, note the following:

- You can only use this feature with local books and pages. You cannot use render dependencies with remote books and pages (with WSRP).
- Render dependencies are resolved by using the most general scope. The dependencies from more specific scopes are ignored. For example, if dependencies are applied to a book, page, and portlet, the dependencies from the book will be used. If the book has no dependencies, then the page dependencies will be used. If neither the book nor the page have dependencies, then the portlet dependencies will be used.
- Remote portlets will not inherit dependencies from local books and pages. Remote portlet render dependencies resolve only to the remote portlet itself.

You can attach multiple dependencies files to a portlet, book, or page. You can set the Render Dependencies Path for a portlet, book, or page to be a comma-delimited list of paths. All of the dependencies files in those multiple paths will be used to resolve dependencies. This feature includes filtering logic that attempts to avoid duplicates so that the same artifacts are not injected multiple times in the markup.

Use any of the following methods to create and attach a render dependencies file to a book or page:

- Right-click in the main body of a book or page in the portal editor and select **Create Render Dependency File**. This brings up the New Render Dependencies Dialog, which lets you create the file.
- Select **File > New > Other > Markup Files > Render Dependencies**. This brings up the New Render Dependencies Dialog, which lets you create the file. You can then associate the file with a book or page using the Render Dependencies Path property.
- In the book or page Properties view, edit the Render Dependencies Path property. The Properties view provides a button that brings up the New Render Dependencies dialog.

8.2 Setting Portal Component Properties

Portal properties are named attributes of the portal that uniquely identify it and define its characteristics. Some properties—such as title and definition label—are required; many optional properties allow you to enable specific functions for the portal such as presentation properties, rollover images, and control tree optimization. The specific properties that you use for a portal vary depending on your expected use for that portal.

Each portal component includes a set of properties that are used to configure its behavior. For example, you can configure desktop properties that determine which look and feel the desktop uses, as well as the type of encoding used at runtime.

Portal properties include subsets of properties for the main components (books, pages, desktops and so on). The *.portal file provides a complete view of these properties.

During the development phase of the portal life cycle, you generally edit portal properties using Oracle Enterprise Pack for Eclipse; this section describes properties that you can edit using Oracle Enterprise Pack for Eclipse.

During staging and production phases, you typically use the WebLogic Portal Administration Console to edit portal properties; only a subset of properties are editable at that point. For instructions on editing portal properties from the WebLogic Portal Administration Console, refer to [Chapter 15, "Managing Portal Desktops."](#)

This section contains the following topics:

- [Section 8.2.1, "Editing Portal Properties"](#)
- [Section 8.2.2, "Tips for Using the Properties View"](#)
- [Section 8.2.2.1, "Presentation Properties"](#)
- [Section 8.2.2.2, "Desktop Properties"](#)
- [Section 8.2.2.3, "Book Properties"](#)
- [Section 8.2.2.4, "Page Properties"](#)
- [Section 8.2.2.5, "Placeholder Properties"](#)

8.2.1 Editing Portal Properties

When you click a border in the portal editor view, an orange outline appears around that section of the portal, and a related set of properties appears in the Properties view. The displayed properties vary according to the selected border in the view. [Figure 8–7](#) shows the highlighted Header area and its related properties.

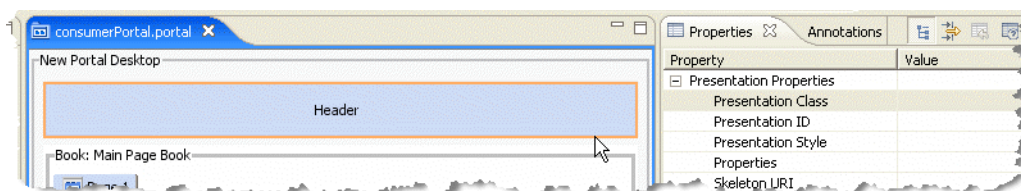
To edit portal properties, follow these steps:

1. Navigate to the location of the portal whose properties you want to edit, and double-click the .portal file to open it in the editor.
2. Click the border of the desired component to display its properties in the Properties view.

The displayed properties vary according to the active area that you select. If you click the outer (desktop) border, properties for the entire desktop appear; if you click inside a placeholder, properties for that placeholder appear, and so on.

3. Navigate to the Properties view to view the current values for that component's properties. [Figure 8–7](#) shows a segment of a portal header's Properties view:

Figure 8–7 Portal Properties Example - Header Properties



4. Double-click the field that you want to change.

If you hover the mouse over a property field, a description of that field displays in a popup window.

Values for some properties are not editable after you create the portal.

In some cases, from the property field you can view associated information pertaining to that property; for example, the Skeleton URI property provides an **Open** button to view the associated file. For more information about options available in the Properties view, refer to [Section 8.2.2, "Tips for Using the Properties View."](#)

8.2.2 Tips for Using the Properties View

The behavior of the Properties view varies depending on the type of field you are editing. The following tips might help you as you manipulate the content of the data fields in the Properties view.

- If a file is associated with a property, the Properties view includes an **Open** button in addition to a **Browse** button; you can click **Open** to display the appropriate editor/view for the file type.
- If you have edited a markup file that is associated with a property, you can cause the property to "reload" the content of that markup file so that it is available for selection in the Properties view. To reload a markup file for a property, navigate to the property for which you want to reload the markup file contents and click **Reload**. The Reload button is available only for properties that have an associated markup file; for example, layout, shell, theme, menu, and so on.
- If you want to edit the XML source for a portal file, you can right-click the `.portal` file in the Package Explorer view and choose **Edit with > XML Editor** to open the file using the basic XML editor that Eclipse provides.

8.2.2.1 Presentation Properties

Each component of your portal can have unique presentation properties. [Table 8-1](#) describes presentation properties and their values.

Table 8–1 Presentation Properties

| Property | Description |
|--------------------|---|
| Presentation Class | <p>Optional.</p> <p>A CSS class that overrides any default CSS class used by the component's skeleton.</p> <p>For proper rendering, the class must exist in a cascading style sheet (CSS) file in the look and feel's selected skin, and the skin's <code>skin.xml</code> file must reference the CSS file.</p> <p>Sample: If you enter "my-custom-class", the rendered HTML from the default skeletons looks like this:</p> <pre data-bbox="581 537 938 562"><div class="my-custom-class"></pre> <p>The properties you enter are added to the component's parent <code><div></code> tag. On books, pages, and portlets, use the Content Presentation Class property to set properties on the component's content/child <code><div></code> tag, especially for setting a style class that enables content scrolling and height-setting.</p> <p>Note: Presentation properties on placeholders are only applicable when using file-based portals.</p> |
| Presentation ID | <p>Optional. A unique ID inserted in the rendered HTML tag for the component. The value you enter (which must be unique among all presentation IDs in the portal) overrides the ID that might otherwise be inserted by the component's skeleton. An example use would be inserting a unique ID that JavaScript could operate on.</p> <p>Sample - If you enter A12345, the rendered HTML from the default skeletons will look like this:</p> <pre data-bbox="581 1010 792 1035"><div id="A12345"></pre> |
| Presentation Style | <p>HTML style attribute to insert for the portal component. This attribute is equivalent to a style sheet class attribute and overrides any attributes in the style sheet class. Separate multiple entries with a semicolon.</p> <p>Sample: If you enter <code>{background-color: #fff}</code> for a portlet title bar, the rendered HTML from the default skeletons looks like this:</p> <pre data-bbox="581 1213 1382 1266"><div class="bea-portal-window-titlebar" style="{background-color: #fff}">**</pre> <p>and the portlet title bar will have a white background. The <code>background-color</code> attribute you entered overrides the <code>background-color</code> attribute in the <code>bea-portal-window-titlebar</code> class.</p> <p>The properties you enter are added to the component's parent <code><div></code> tag. On books, pages, and portlets, use the Content Presentation Style property to set properties on the component's content/child <code><div></code> tag, especially for setting content scrolling and height.</p> <p>Note: Presentation properties on placeholders are only applicable when using file-based portals.</p> |
| Properties | <p>A semicolon-separated list of name-value pairs to associate with the object. This data can be utilized by the skeletons to affect rendering.</p> <p>Note: Presentation properties on placeholders are only applicable when using file-based portals.</p> |
| Skeleton URI | <p>The path (relative to the project) to a skeleton JSP that is used to render the portal component. This JSP overrides the skeleton JSP that would otherwise be used by the selected look and feel for the desktop. For example, enter <code>/framework/myskeletons/mytitlebar.jsp</code>.</p> <p>Note: Presentation properties on placeholders are only applicable when using file-based portals.</p> |

8.2.2.2 Desktop Properties

Desktop properties allow you to determine how your portal desktop will behave. You can assign a backing file to your desktop as well as look and feel properties such as shell, title, and the look and feel you want the desktop to use. [Table 8-2](#) describes desktop properties and their values

Two of the desktop properties are also important for performance: Tree Optimization and Asynchronous Mode. For more information about designing your portal for performance, see [Chapter 13, "Designing Portals for Optimal Performance."](#)

Table 8-2 Desktop Properties

| Property Type | Property | Description |
|---------------------|-------------------|--|
| Backable Properties | Backing File | <p>If you want to use a class for preprocessing (for example, authentication) prior to rendering the portlet, enter the fully qualified name of that class. That class must implement the interface:</p> <pre>com.bea.netuix.servlets.controls.content.backing.JspBacking</pre> <p>or extend:</p> <pre>com.bea.netuix.servlets.controls.content.backing.AbstractJspBacking.</pre> |
| Desktop Properties | Asynchronous Mode | <p>Asynchronous mode allows you to set the contents of a desktop to render asynchronously. When asynchronous mode is enabled, portal content (including individual portlets) displays when its individual rendering life cycle is complete.</p> <p>The drop-down menu displays these options:</p> <p>Enabled — Enables asynchronous rendering for the entire desktop whereas each desktop component (books, pages, portlets) renders on its own life cycle.</p> <p>Disabled — This option ensures the entire desktop renders synchronously.</p> <p>Compat_9_2 — This option maintains compatibility with any synchronization setting you used in WebLogic Portal 9.2.</p> |
| Desktop Properties | Disc Enabled | <p>Set Disc Enabled to true to enable the Disc framework. Disc provides a client-side, JavaScript, object-oriented programming framework for handling events, making asynchronous portlet updates, and for accessing portal context objects. See the <i>Oracle Fusion Middleware Client-Side Developer's Guide for Oracle WebLogic Portal</i> for detailed information on Disc.</p> |
| Desktop Properties | DVT Enabled | <p>Set DVT Enabled to true to enable placeable movement (drag and drop) for the desktop. For more information, see Section 8.13, "Enabling Placeable Movement."</p> |
| Desktop Properties | Definition Label | <p>Each component must have a unique identifier. A default value is entered automatically, but you can change the value. Definition labels can be used to navigate to books, pages, or portlets. Also, components must have definition labels for entitlements and delegated administration.</p> <p>As a best practice, you should edit this value in Oracle Enterprise Pack for Eclipse to create a meaningful value. This is especially true when offering books, pages, or portlets remotely, as it makes it easier to identify them from the producer list.</p> <p>Note: This is also especially important when monitoring books, pages, or portlets with Oracle WebCenter Portal's Analytics, as it makes it easier to identify them in the Analytics reports.</p> <p>When you create a portal resource instance on a desktop in the WebLogic Portal Administration Console, the generated definition label is not editable.</p> |

Table 8–2 (Cont.) Desktop Properties

| Property Type | Property | Description |
|--------------------|-------------------|---|
| Desktop Properties | Encoding | <p>Select the encoding used to display the portal. The default is UTF-8. You can select a value using the drop-down menu, which provides five common IANA encoding selections, or you can type a value into the field. The values presented in the combobox are descriptive display names that are converted to actual IANA names when saved to the <code>.portal</code> file.</p> <p>You can enter a name from the extended encoding set as an IANA name, alias, or canonical name for the encoding. If you type in a value that does not appear in the drop-down menu, a validator checks the entry when you press Enter or click outside the field. If the encoding fails validation, a warning message displays; you can either change the value or accept it anyway. The value is stored as shown in the field, in the <code>.portal</code> file.</p> <p>The character set is based on these resources, generally in the following order:</p> <ul style="list-style-type: none"> Encoding of the portal (the "encoding" attribute of the desktop) Default encoding set in <code>netuix-config.xml</code>. Encoding set in <code><jsp-descriptor></code> element of <code>weblogic.xml</code>. |
| Desktop Properties | Look and Feel | Select the look and feel to determine the default desktop appearance (combination of skins and skeletons) |
| Desktop Properties | Scroll to Window | <p>When portal users interact with scrollable pages, maintains browser focus on active portlet. This property is set to true by default.</p> <p>Note: This property is not compatible with asynchronous desktop rendering or asynchronous portlet rendering.</p> |
| Desktop Properties | Shell | Select the default shell for the area outside of the books, pages, and portlets. Shells determine the content for the desktop header and footer. |
| Desktop Properties | Title | Enter a title for the desktop. |
| Desktop Properties | Tree Optimization | Using this function improves performance, especially for portals that have large control trees (books, pages, portlets). If this flag is set to <code>true</code> , the portal framework generates a partial control tree rather than the full tree. Tree optimization causes slight changes in the behavior of the portal; do not use it without first performing a complete regression test on the portal. For more information, refer to Chapter 13, "Designing Portals for Optimal Performance." |

8.2.2.3 Book Properties

You can assign a backing file to a book using book properties, as well as set up a page to use a theme file instead of the portal look and feel file. Book properties also include different presentation properties differ for books, see [Table 8–3](#).

Table 8–3 Book Properties

| Property Type | Property | Definition |
|---------------------|------------------|--|
| Backable Properties | Backing File | If you want to use a class for preprocessing (for example, authentication) prior to rendering the portlet, enter the fully qualified name of that class. That class must implement the interface <code>com.bea.netuix.servlets.controls.content.backing.JspBacking</code> or extend <code>com.bea.netuix.servlets.controls.content.backing.AbstractJspBacking</code> . |
| Backable Properties | Definition Label | <p>Each component must have a unique identifier. A default value is entered automatically, but you can change the value. Definition labels can be used to navigate to books, pages, or portlets. Also, components must have definition labels for entitlements and delegated administration.</p> <p>As a best practice, you should edit this value in Oracle Enterprise Pack for Eclipse to create a meaningful value. This is especially true when offering books, pages, or portlets remotely, as it makes it easier to identify them from the producer list.</p> <p>Note: This is also especially important when monitoring books, pages, or portlets with Oracle WebCenter Portal's Analytics, as it makes it easier to identify them in the Analytics reports.</p> <p>When you create a portal resource instance on a desktop in the WebLogic Portal Administration Console, the generated definition label is not editable.</p> <p>About .book and .page definition labels: Avoid including multiple occurrences of the same .book or .page file (with the same definition label) within a portal. For example, if you use nested embeds of the same .book or .page file within a portal, then rendering problems will occur due to the existence of duplicated definition labels.</p> |
| Backable Properties | Hidden | <p>Optional.</p> <p>Hides the navigation tab for the portal component to prevent direct access. For pages or books, you can provide access with a link (to the definition label) or by using a backing file.</p> |
| Backable Properties | Packed | <p>Rendering hint that can be used by the skeleton to render the book or page in either expanded or packed mode. You must build your own skeleton to support the property.</p> <p>When <code>packed="false"</code> (the default), the book or page takes up as much horizontal space as it can.</p> <p>When <code>packed="true,"</code> the book or page takes up as little horizontal space as possible.</p> <p>From an HTML perspective, this property is most useful when the window is rendered using a table. When <code>packed="false,"</code> the table's relative width would likely be set to "100%." When <code>packed="true,"</code> the table width would likely remain unset.</p> |
| Backable Properties | Rollover Image | <p>Path to a rollover image for the icon that appears next to the book or page title.</p> <p>Because the specified path might not be relative to the project, the image file cannot be located by Oracle Enterprise Pack for Eclipse and is not rendered on book or page tabs in the portal editor. Image paths must be relative to the image search paths specified in the <code>skin.xml</code> file associated with the selected look and feel.</p> |

Table 8–3 (Cont.) Book Properties

| Property Type | Property | Definition |
|---------------------|----------------------------|---|
| Backable Properties | Selected Image | <p>Select an image to override the icon that appears next to the book or page title. This image appears on the tab of selected pages.</p> <p>Because the specified path might not be relative to the project, the image file cannot be located by Oracle Enterprise Pack for Eclipse and is not rendered on book or page tabs in the portal editor. Image paths must be relative to the image search paths specified in the <code>skin.xml</code> file associated with the selected look and feel.</p> |
| Backable Properties | Theme | <p>Optional.</p> <p>Applicable for books and pages. Select a theme to give the book or page a different look and feel from the rest of the desktop.</p> |
| Backable Properties | Title | <p>Enter a title for the portal component. Page titles appear on page tabs and portlet titles appear on portlet title bars.</p> <p>For a placeholder, the name of the placeholder. This value is read-only, and is obtained from the <code>.layout</code> file for the page's selected Layout Type.</p> |
| Backable Properties | Unselected Image | <p>Select an image to override the icon that appears next to the book or page title. This image appears on the tab of unselected pages.</p> <p>Because the specified path might not be relative to the project, the image file cannot be located by Oracle Enterprise Pack for Eclipse and is not rendered on book or page tabs in the portal editor. Image paths must be relative to the image search paths specified in the <code>skin.xml</code> file associated with the selected look and feel.</p> |
| Book Properties | Content Presentation Class | <p>A CSS class that overrides any default CSS class used by the component's skeleton.</p> <p>For proper rendering, the class must exist in a cascading style sheet (CSS) file in the look and feel's selected skin, and the skin's <code>skin.xml</code> file must reference the CSS file.</p> <p>Sample: If you enter "my-custom-class", the rendered HTML from the default skeletons looks like this:</p> <pre><div class="my-custom-class"></pre> <p>The properties you enter are added to the component's parent <code><div></code> tag. On books, pages, and portlets, use the Content Presentation Class property to set properties on the component's content/child <code><div></code> tag, especially for setting a style class that enables content scrolling and height-setting.</p> |
| Book Properties | Content Presentation Style | <p>Optional. The primary uses are to allow content scrolling and content height-setting.</p> <p>For scrolling, enter one of the following attributes:</p> <ul style="list-style-type: none"> overflow-y:auto - Enables vertical (y-axis) scrolling overflow-x:auto - Enables horizontal (x-axis) scrolling overflow:auto - Enables vertical and horizontal scrolling <p>For setting height, enter the following attribute:</p> <pre>height:200px</pre> <p>where <code>200px</code> is any valid HTML height setting.</p> <p>You can also set other style properties for the content as you would using the Presentation Style property. The properties are applied to the component's content/child <code><div></code> tag.</p> |

Table 8–3 (Cont.) Book Properties

| Property Type | Property | Definition |
|-----------------|------------------------|---|
| Book Properties | Default Page | Required. Select the page that appears by default when the desktop is accessed. The list is populated with Definition Labels of all pages in the portal. |
| Book Properties | Editable | A dropdown menu displays these selections: Not Editable Edit in Menu Edit in Titlebar If you have visitor tools enabled so that users can modify book properties, setting Editable to "Edit in Title Bar" or "Edit in Menu" puts a visitor tool link in that location. "Edit in Menu" is available only if you select a menu type for the Navigation property. When you select "Edit in Title Bar" or "Edit in Menu," a group of Mode Properties appears in the Property Editor. |
| Book Properties | Navigation | Select the default type of menu to use for navigation among books and pages. The dropdown menu displays these selections: Single Level Menu – Provides a single row of tabs for the book's immediate pages and child books. Multi Level Menu – Recursively provides a hierarchical menu for all the books and pages contained within a book. This menu does not stop at the first set of children. It continues down the tree. If the parent book uses a multi-level menu, then the child books should not use a menu as the multi-level menu will cover them. For performance considerations associated with multi-level menus, refer to Chapter 13, "Designing Portals for Optimal Performance." No Navigation |
| Book Properties | Orientation | Hint to the skeleton to position the navigation menu on the top, bottom, left, or right side of the book. You must build your own skeleton to support this property. Following are the numbers used in the <code>.portal</code> file for each orientation value: top=0, left=1, right=2, bottom=3. |
| Book Properties | Return to Default Page | Determines the page displayed when a book is selected. When Return to Default Page="false" (the default), the last page that was active in a book is displayed when the book is selected. When Return to Default Page="true," the page selected in the Default Page property is always displayed when a book is selected. |

8.2.2.4 Page Properties

Page properties allow you to configure properties for individual pages in your portal. The layout property determines how many placeholders the page has and their locations. [Table 8–4](#) lists each page property.

Table 8–4 Page Properties

| Property Type | Property | Definition |
|---------------------|------------------|--|
| Backable Properties | Backing File | <p>If you want to use a class for preprocessing (for example, authentication) prior to rendering the portlet, enter the fully qualified name of that class. That class must implement the interface:</p> <pre>com.bea.netuix.servlets.controls.content.backing.JspBacking</pre> <p>or extend:</p> <pre>com.bea.netuix.servlets.controls.content.backing.AbstractJspBacking.</pre> |
| Backable Properties | Definition Label | <p>Each component must have a unique identifier. A default value is entered automatically, but you can change the value. Definition labels can be used to navigate to books, pages, or portlets. Also, components must have definition labels for entitlements and delegated administration.</p> <p>As a best practice, you should edit this value in Oracle Enterprise Pack for Eclipse to create a meaningful value. This is especially true when offering books, pages, or portlets remotely, as it makes it easier to identify them from the producer list.</p> <p>Note: This is also especially important when monitoring books, pages, or portlets with Oracle WebCenter Portal's Analytics, as it makes it easier to identify them in the Analytics reports.</p> <p>When you create a portal resource instance on a desktop in the WebLogic Portal Administration Console, the generated definition label is not editable.</p> <p>About .book and .page definition labels: Avoid including multiple occurrences of the same .book or .page file (with the same definition label) within a portal. For example, if you use nested embeds of the same .book or .page file within a portal, then rendering problems will occur due to the existence of duplicated definition labels.</p> |
| Backable Properties | Hidden | <p>Hides the navigation tab for the portal component to prevent direct access. For pages or books, you can provide access with a link (to the definition label) or by using a backing file.</p> |
| Backable Properties | Packed | <p>Rendering hint that can be used by the skeleton to render the book or page in either expanded or packed mode. You must build your own skeleton to support the property.</p> <p>When packed="false" (the default), the book or page takes up as much horizontal space as it can.</p> <p>When packed="true," the book or page takes up as little horizontal space as possible.</p> <p>From an HTML perspective, this property is most useful when the window is rendered using a table. When packed="false," the table's relative width would likely be set to "100%." When packed="true," the table width would likely remain unset.</p> |
| Page Properties | Layout Type | <p>Select the page layout style for positioning books and portlets in placeholders on a page. A dropdown menu provides the following selections:</p> <ul style="list-style-type: none"> Two Column Flow Layout Three Column Flow Layout Single Column Flow Layout Four Column Flow Layout <p>For more information about layouts, see Section 7.11, "Working with Layouts."</p> |

8.2.2.5 Placeholder Properties

Placeholders are named sections within a page layout. By editing placeholder properties, you can modify a placeholder text flow, width, and so on. For more information about layouts, see [Section 7.11, "Working with Layouts."](#)

Table 8–5 lists placeholder properties.

Table 8–5 Placeholder Properties

| Property | Description |
|-------------------|---|
| Flow | If <code>true</code> , books and portlets put in the placeholder are positioned according to the value of the Flow property. If this value is set to <code>false</code> , the default flow is used (vertical). This value is read from the <code>.layout</code> file for the page's selected Layout Type. |
| Placeholder Width | Displays the width set for the placeholder. This value is read from the <code>.layout</code> file for the page's selected Layout Type. |
| Title | For a placeholder, the name of the placeholder. This value is read-only, and is obtained from the <code>.layout</code> file for the page's selected Layout Type. |
| Using Flow | If the Using Flow property is set to <code>true</code> , this value can be <code>vertical</code> or <code>horizontal</code> . Flow determines whether books or portlets put in the placeholder are positioned on top of each other (vertical) or beside each other (horizontal). This value is read from the <code>.layout</code> file for the page's selected Layout Type. |

8.3 Copying J2EE Library Files into a Project

You can override a resource in a shared J2EE library by copying the resource into your portal web project and then customizing it.

Caution: If you copy J2EE library resources into your project, keep in mind that with future updates to the WebLogic Portal product, you might have to perform manual steps in order to incorporate product changes that affect those resources. *With any future patch installations, WebLogic Portal supports only configurations that do not have copied J2EE library resources in the project.*

To copy a J2EE library resource into your project, follow these steps:

1. Add the Merged Projects view if it is not currently visible. To do so:
Select **Window > Show View > Merged Projects View**.
The Merged Projects View is part of the default Portal Perspective, displaying in the same area as the Package Explorer view.
2. Select the Merged Projects view if it is not already selected.
Italicized items in the Merged Projects View represent entities that are stored in shared J2EE libraries. All entities that are stored on your file system, such as any portal files that you create, are shown in regular type.
3. Expand the display tree to view the resource that you want to copy to the project.
You can copy a single file, set of files, or an entire folder, to your project.
4. Right-click the resource(s) that you want to copy, and select **Copy To Project**.
The resources are copied to the web content folder of your project, and reflect the hierarchy of their location in the J2EE library.

Note: You can view a Properties dialog for a file in the Merged Projects View by right-clicking the file and selecting **Properties**. The dialog shows the J2EE library information for the file, including the J2EE library name and version.

8.3.1 Viewing Files that Override Shared J2EE Library Files

You can view local file overrides of J2EE library files in either of these ways:

- In the Merged Projects view in Oracle Enterprise Pack for Eclipse, files that you copied to the project are shown in plain (non-italic) text.
- Optionally, you can choose to superimpose a small marker icon on file icons in the display tree to indicate that a local file in your portal web project is overriding a file of the same name and path that exists in one of your shared J2EE libraries.

The icon indicating J2EE library overrides is turned off by default, due to the processing time involved in updating the information, and the fact that using it causes the WebLogic Portal plugins to always load at startup.

To activate the library override marker icons, follow these steps:

1. Navigate to **Window > Preferences > General > Appearance > Label Decorations**.
2. Check the box labeled **WebLogic Library Module File Override**.
3. Click **Apply** and then click **OK**.

A small arrow displays in the icon for files that were copied from the J2EE library to the project.

8.4 Custom Controls in Page Flows

Note: Page Flows are a feature of Apache Beehive, which is an optional framework that you can integrate with WLP. See [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

WebLogic Portal provides custom Java controls—collections of actions (Java methods) that you can drag and drop into your page flows—to make development easier and more automated. You can add actions in a graphical interface and configure the actions with the Oracle Enterprise Pack for Eclipse editor, insulating you from working directly with Java code (although you can still work directly with the code in Source View). Even if you want to work directly with code, working initially with the graphical interface automates code entry and makes it more syntax error free.

For example, the custom controls provided with WebLogic Portal provide built-in forms on some methods. If you want an action that creates a user, you can use the `createUser` method in the User Provider control. If you add the `createUser` method into the control's action area, the control provides a `CreateUserForm` bean that can be added to a JSP and linked to the action automatically.

For information about creating page flows using Oracle Enterprise Pack for Eclipse, refer to the *Oracle Workshop for WebLogic User's Guide*. For more information about the specific controls provided with WebLogic Portal, refer to the *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*.

You can edit the tag attributes manually in the JSP editor's Source tab or in the Properties view.

For information about the Apache Beehive Netui documentation, see <http://beehive.apache.org/docs/1.0.2/>.

For information about the Netui tags, see <http://beehive.apache.org/docs/1.0.2/netui/tags/index.html>.

The following sections provide more information about using controls provided by WebLogic Portal in page flows:

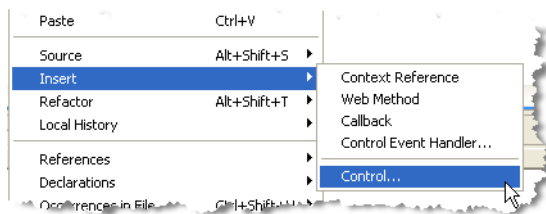
- [Section 8.4.1, "Adding a Portal Control to a Page Flow"](#)
- [Section 8.4.2, "Adding an Action to the Page Flow"](#)
- [Section 8.4.3, "Portal Control Security"](#)

8.4.1 Adding a Portal Control to a Page Flow

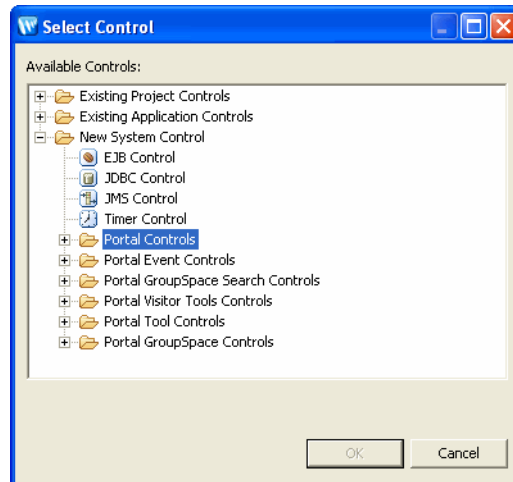
To add a control to a page flow:

1. Open an existing page flow or create a new page flow.
For information about creating page flows using Oracle Enterprise Pack for Eclipse, refer to the *Oracle Workshop for WebLogic User's Guide*.
2. If you are not already using the Page Flow Perspective, Oracle Enterprise Pack for Eclipse asks if you want to switch to it. Do so.
3. Right-click in the source view for the page flow and select **Insert > Control**, as shown in [Figure 8–8](#).

Figure 8–8 *Insert > Control Menu Selection*



The Select Control dialog box displays, as shown in [Figure 8–9](#).

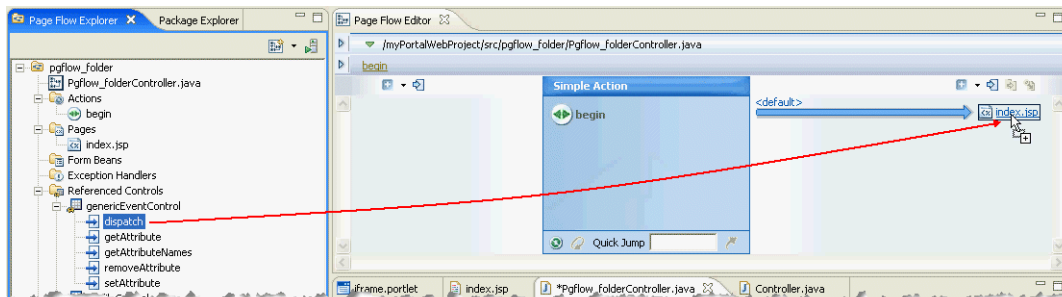
Figure 8–9 Select Control Dialog

4. Expand the desired folder and select the control that you want to add.
5. Click **OK** to add the control to the page flow.

All the methods in the control are now available to your page flow. For more information about portal controls, see the *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*.

8.4.2 Adding an Action to the Page Flow

You can add a method (action) to your page flow by dragging a method from the Page Flow Explorer view into the Flow View in the page flow editor, as shown in [Figure 8–10](#).

Figure 8–10 Adding an Action to a Page Flow Using the Flow View

8.4.3 Portal Control Security

Many portal framework controls have secured methods, meaning that any control attempting to execute such a method would need to be in an authorized security role. You can specify security roles in a page flow on each action. A user must be a member of the designated role(s) for the action to be fired. For example, the User Provider Control has a `removeUser()` action that requires the caller to be in the role of "Framework SystemAdministrator" or "Admin."

For user and group management actions, the roles you specify in the WebLogic Portal Administration Console Authentication Security Provider Service determine whether or not the user can perform the action.

You can add security roles to a domain using the WebLogic Server Administration Console.

8.5 Deploy and View a Portal

You can deploy (publish) a portal to the server and view it in a browser window.

Note: Opening the same portal desktop in multiple browser windows that share the same process (and, therefore, the same session) is not supported. For example, using the `render:pageURL` tag or the JavaScript `window.open` function to open a portal desktop in a new window is not supported and can result in unwanted side effects. For instance, if a portlet is deleted in the new window, and then the user tries to interact with that portlet in the main window, the interaction will fail.

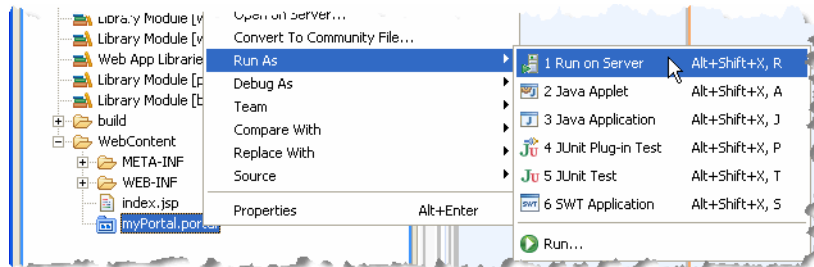
Caution: Due to a problem in Eclipse, some JSP tags are marked as containing an error when they are actually correct; although no error actually exists, Eclipse will not publish (deploy) the application. If this situation occurs, you must turn off JSP validation before publishing. Leave JSP validation on until you have fixed any problems except those caused by these tags; before deploying, select **Window > Preferences, select Validation in the tree, and uncheck the JSP Syntax Validator** check box.

To deploy (publish) and view your portal project, follow these steps:

1. Right-click the `.portal` file for the portal in the Package Explorer view and select **Run As > Run on Server**, as shown in [Figure 8–11](#).

Note: In many cases you are not required to redeploy a portal to see changes that you have made. For more information, refer to [Section 4.10, "Running a Project on the Server."](#)

Figure 8–11 Selecting to Run the Portal on the Server



The Run On Server - Define a New Server dialog displays. Make sure the server that you want to use is highlighted.

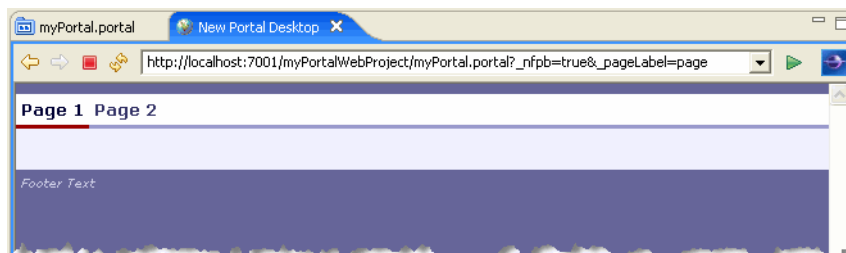
2. Click **Finish** to begin the deployment process.

Wait while Oracle Enterprise Pack for Eclipse starts the server, deploys files to the server, and runs the application. While deployment is in process, you can view status messages in the status bar at the bottom of the window.

The results appear in a new tab in the editor view, as shown in [Figure 8–12](#).

Tip: If you previously deployed a project of the same name and that project is in a different location, you need to undeploy that project from the server. To do this, double-click the server in the Servers view, and delete the appropriate portal web project (not the shared J2EE libraries) from the **Published Modules** list. For more information about this task, refer to the "Managing Servers" section of the *Oracle Workshop for WebLogic Platform Programmer's Guide*.

Figure 8–12 Portal Display in the Workbench Editor View



Tip: You can choose to always use an external web browser to view your portal if you wish. To do so, select **Window > Preferences** and select **General > Web Browser** in the property tree; then select the **Use external Web browser** radio button.

8.6 Working with URLs

The following sections describe how to work with URLs in WebLogic Portal:

- [Section 8.6.1, "Creating URLs to Portal Resources"](#)
- [Section 8.6.2, "URL Compression"](#)
- [Section 8.6.3, "URL Troubleshooting"](#)
- [Section 8.6.4, "Ampersand Entities in Portal URLs"](#)
- [Section 8.6.5, "Optional Look And Feel URL Templates"](#)

8.6.1 Creating URLs to Portal Resources

WebLogic Portal provides a convenient, extensible mechanism for creating URLs to your portal resources in a portal web project that can transfer from domain to domain without breaking, especially when server names and port numbers change. This URL-creation mechanism also lets you switch between secure and non-secure URLs (http and https).

Note: By default, WLP appends a security token to WLP-generated URLs to prevent certain kinds of security attacks. For detailed information, see "Using Security Tokens" in the *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal*.

The two pieces involved in creating portable URLs are:

- The `<render:*Url>` JSP tags in the Portal Rendering JSP tag library.
- A portal web project's `WEB-INF/bee-hive-url-template-config.xml` file.

The `bee-hive-url-template-config.xml` file contains multiple URL "templates," each with a unique name. Those template URLs contain variables such as `url:domain` and `url:port` that are read in from the active server. The `<render:*Url>` JSP tags have a "template" attribute in which you can specify the name of a URL template in `bee-hive-url-template-config.xml`.

Table 8–6 shows how the JSP tags use the templates to create URLs.

Table 8–6 Examples of JSP Tags Using the Templates to Create URL

| <code>bee-hive-url-template-config.xml</code> | <code><render:resourceUrl></code> |
|---|---|
| The following is a sample URL template in <code>bee-hive-url-template-config.xml</code> . | The following is how the <code><render:resourceUrl></code> JSP tag would create a URL using the template. |
| <pre><url-template name="secure-url"> https://{url:domain}:{url:securePort}/{url:pa th}?{url:queryString} </url-template></pre> | <pre><% String reportpath = "reports/report1.html"; %> <a href="<render:resourceUrl template="secure-url" path="<%=reportpath%"/>"> View the Report </pre> |

You can use any of the URL templates in `bee-hive-url-template-config.xml` provided by WebLogic Portal, and you can add as many templates as you want into the file. Example 8–1 shows an example of the template variables you can set in `bee-hive-url-template-config.xml`. Simply replace the variables shown with appropriate values, as explained below.

Example 8–1 Template Variables

```
<url-template>
  <name>wsrp-producer-wsdl-url-default</name>

  <value>http://{url:domain}:{url:port}/{url:contextPath}/{url:path}?{url:queryStrin
g}
</value>
</url-template>
<url-template>
  <name>wsrp-producer-wsdl-url-secure-default</name>

  <value>https://{url:domain}:{url:securePort}/{url:contextPath}/{url:path}?{url:que
ryString}
</value>
</url-template>
```

The available variables shown in Example 8–1 are listed below. Note that the initial WSDL fetch will be to whatever URL is set in the Administration Console. Using the templated file only affects the WSDL.

- `{url:domain}` - Reads the name of the server from the current request.
- `{url:port}` - Reads the listen port number of the server from the current request. (See Troubleshooting below.)
- `{url:securePort}` - Reads the SSL port number of the server from the current request. (See Troubleshooting below.)

- `{url:path}` - Reads the name of the web application. The URLs to all resources in a web application are relative to the web application directory.
- `{url:queryString}` - Reads a `queryString` variable for the URL.
- `{url:compression}` - Allows you to use the pluggable compression mechanism to create shorter, more readable, URLs. For details, refer to [Section 8.6.2, "URL Compression."](#)

8.6.2 URL Compression

URL strings can take up a large percentage of the response HTML. WebLogic Portal's URL compression mechanism provides a pluggable means of creating shorter URLs. For example:

Before implementing URL compression, a URL would look like this:

```
http://abc.com/webapp/portletEvents/activatePage/activatePage.portal?_nfpb=true&_windowLabel=pfTPC_source_1&pfTPC_source_1_actionOverride=%2FportletEvents%2FactivatePage%2FtoPage1
```

After implementing URL compression, a URL would look like this:

```
http://abc.com/wlp.c?__c=7f6
```

WebLogic Portal implements URL compression by mapping strings to the database. You set up URL compression using a web application-level setting; processing is invoked through the `GenericURL` class.

The default algorithm uses two of the p13n caches for the mapping - `wlp.urlCompression.compressed` and `wlp.urlCompression.expanded` - which are located in `p13n-cache-config.xml` in the `framework-full-app` library module.

8.6.2.1 Implementing URL Compression

To configure a webapp to use url compression, follow these steps:

1. Define the compression servlet in `web.xml`; for example

```
<servlet>
  <servlet-name>UrlCompressionServlet</servlet-name>
  <servlet-class>com.bea.portlet.compression.UrlCompressionServlet
</servlet-class>
  <init-param>
    <param-name>defaultPage</param-name>
    <param-value>/index.jsp</param-value>
  </init-param>
  <init-param>
    <param-name>errorPage</param-name>
    <param-value>/errors/error.jsp</param-value>
  </init-param>
  <load-on-startup>1</load-on-startup>
</servlet>
```

2. Map the compression pattern; for example:

```
<servlet-mapping>
  <servlet-name>UrlCompressionServlet</servlet-name>
  <url-pattern>wlp.c</url-pattern>
</servlet-mapping>
```

3. Add the token `{url:compression}` to the templates for which you want to apply compression.

8.6.2.2 URL Compression Special Considerations

The following sections describe some special considerations to keep in mind as you implement URL compression.

8.6.2.2.1 URL Compression and AJAX URL compression interferes with some of the AJAX-specific mechanisms for page refreshes that are associated with asynchronous portlet rendering. Because of this, URL compression must be disabled whenever asynchronous content rendering is disabled to force page refreshes. WebLogic Portal disables URL compression automatically except when file upload forms are used; in this situation, you must explicitly disable it. For instructions, refer to the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

A successful implementation of URL compression depends on portal developers following best practices and using supported URL tags and classes to generate URLs.

8.6.2.2.2 URL Compression and Off-Site URLs An off-site URL is a URL to a resource that is not hosted in the web application of the code generating the URL. In a web application that has compression enabled, you must specify a URL template with compression disabled when using `GenericURL`, its subtypes, or the corresponding JSP tags to generate off-site URLs.

Use the following code fragment as a guide:

```
GenericURL redirectURL = GenericURL.createGenericURL(request, response);
redirectURL.setDomain("www.yahoo.com"); redirectURL.setPort(80);
redirectURL.setPath("/compressedUrl/index.html"); redirectURL.setTemplate("no_
compression_template");
```

where `"no_compression_template"` is the name of a URL template that excludes the `{url:compression}` pseudo-token.

8.6.2.2.3 URL Compression and Frequently-Accessed Data When referencing frequently-accessed URLs in your code, it is a best practice to turn off URL compression. When URL compression is enabled, a new database entry is created each time the URL is accessed. For frequently accessed URLs, this could create performance issues.

To disable URL compression on a per URL basis in your page flows or JSPs, you need to add a no compression template to your `WEB-INF/bee-hive-url-template-config.xml` file. You can then reference this template in your code.

For example, the following JSP results in increased entries in the database. Every time this JSP is rendered a new entry is created in the database regardless of whether or not the link is ever pushed.

Example 8-2 Poor Example of Using URL Compression in a JSP

```
<%
String value = String.valueOf(System.currentTimeMillis());
%>
<render:postbackUrl var="url">
<render:param name="name" value="hello" />
<render:param name="value" value="<%=value%>" />
</render:postbackUrl>
<a href="{url}">Post current time</a>&nbsp;&nbsp;&nbsp;url:{url}</p>
```

To remedy the situation, you should add a new template to the `WEB-INF/bee-hive-url-template-config.xml` that does not use URL compression, as shown in [Example 8-3](#).

Example 8-3 URL Template in `bee-hive-url-template-config.xml` That Does Not Use Compression

```
<url-template>
<name>defaultNoCompression</name>
<value>{url:scheme}://{url:domain}:{url:port}/{url:path}?{url:queryString}{url:currentPage}</value>
</url-template>
```

After adding the no compression template, you then add the template to the `postbackURL` within the JSP, as shown in [Example 8-4](#). Using this example, the URL will not be compressed.

Example 8-4 Using a No Compression URL Template within a JSP

```
<render:postbackUrl var="noCompressionUrl" template="defaultNoCompression">
<render:param name="name" value="hello" />
<render:param name="value" value="%=value%" />
</render:postbackUrl>
<a href="{noCompressionUrl}">Post current
time</a>&nbsp;&nbsp;&nbsp;&nbsp;url:{noCompressionUrl}
```

8.6.3 URL Troubleshooting

If you are using a proxy server or switching back and forth between non-secure and secure ports, you might find that URLs do not resolve if you use the `{url:port}` or `{url:securePort}` variables. This is because the variables for those values are read from the request. For example, if a user in a non-secure port (port number 80) clicks a secure https link that was created with a URL template that uses the `{url:securePort}` variable, the port number of the request (80) is used for the `{url:securePort}` variable, which would create a secure request (https) on a non-secure port. The same could happen if a user on a proxy server (port 80) clicks a link to a resource outside the proxy server (port 443).

In both of those cases, you need to hard code port numbers in the URL templates to get URLs to resolve correctly.

8.6.3.1 URL Templates and Web Services for Remote Portlets (WSRP)

The `bee-hive-url-template-config.xml` file is automatically included (through a J2EE Shared Library) in all portal web projects. This file contains URL templates that are required to support URL rewriting in consumers. If you intend to use a web application as a WSRP producer, do not remove these URL templates and variables from the `bee-hive-url-template-config.xml` file.

8.6.4 Ampersand Entities in Portal URLs

WebLogic Portal uses the Apache Beehive configuration file `bee-hive-url-template-config.xml` for configuring the form of WebLogic Portal-generated URLs. The Apache Beehive configuration element for using ampersand entities (`&`) or ampersand characters (`&`) is located in the NetUI configuration file `bee-hive-netui-config.xml`. In an HTML configuration, the default is to generate URLs with ampersand entities, in the absence of a configuration element specifying the use of ampersand characters.

XHTML configurations force ampersand entities in URLs regardless of the configuration setting.

You can manually override the configuration setting using the `useAmpEntity` method and the `setForcedAmpForm` method in the `GenericURL` class. For more information about these methods, refer to the *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*.

For a discussion of how previous releases of WebLogic Portal handled ampersands in URLs, refer to "Ampersand Entities in Portal URLs" in the *WebLogic Portal Upgrade Guide*.

8.6.5 Optional Look And Feel URL Templates

The WebLogic Portal look and feel uses ResourceURLs (and thus, URL rewriters) for resource (CSS, Javascript, images, and so on) paths under two conditions:

- When optional URL templates are present
- When resource paths are generated by remote portlets

URL templates that are specific to look and feel resources may be specified in a reference group named "lookandfeel-url-templates." This group is expected to contain one or both of the following keys: "laf-resource" and "window-resource". The "laf-resource" key is used for resources related to a skin or skeleton; the "window-resource" key is used for resources related to window dependencies. The resolved (relative) resource path will be used to replace the "{url:path}" parameter in the corresponding URL template. The following portion of the `beehive-url-template-config.xml` file shows the syntax of an example URL template:

```
<url-template>
  <name>laf-resource-template</name>
  <value>http://my.domain.com/resources/laf/{url:path}</value>
</url-template>
<url-template-ref-group>
  <name>lookandfeel-url-templates</name>
  <url-template-ref>
    <key>laf-resource</key>
    <template-name>laf-resource-template</template-name>
  </url-template-ref>
</url-template-ref-group>
```

In the absence of the look and feel URL templates, look and feel resource paths will remain relative, with one exception: when generated within the context of a remote portlet, such paths will use the standard "resource" URL template.

The optional LookAndFeel URL templates can be used to "offload" resources to a different server. However, such resources **MUST** be copied (not moved) and be resolvable using URLs with the same relative resource path as the Portal Web Application (for example, `.../framework/skins/bighorn/css/book.css`). Look and feel path resolution continues to rely on local file system access to resources.

The `GetSkinPath` tag in the render taglib will not be influenced by the optional look and feel URL templates. Paths produced by this tag will be relative in all cases.

8.7 Working with Encoding in HTTP Responses

This section describes how the encoding is set on the HTTP response.

WebLogic Portal uses the following method of setting encoding based on the information in the `.portal` file:

1. Examine the `netuix:desktop` element for an encoding attribute and use that value if present.
2. If the first check is not applicable, examine the `.portal` file for the `directive.page` element. *Note that this mechanism is deprecated.* If that element is present, pick up the encoding from an attribute there.
3. Examine `netuix-config.xml` for a `<defaultEncoding>` element, and use the encoding attribute there.
4. If the previous check is not applicable, fall back to the `<encoding>` element in the `<jsp-descriptor>` section of the `weblogic.xml` file. For more information on `<jsp-descriptor>` element, see "weblogic.xml Deployment Descriptor Elements" in *Oracle Fusion Middleware Developing Web Applications, Servlets, and JSPs for Oracle WebLogic Server*.

This implementation differs from that of previous versions of WebLogic Portal. For more information, refer to the "Functional Changes" in the *Oracle Fusion Middleware Upgrade Guide for Oracle WebLogic Portal*.

The following examples show how to use the encoding settings.

```
<netuix:desktop ... encoding="UTF-8" /> in your .portal file
```

or

```
<defaultEncoding encoding="UTF-8" /> in your netuix-config.xml file
```

8.8 Cache Management in Oracle Enterprise Pack for Eclipse

If configured properly, caches can vastly reduce the time needed to retrieve frequently used data. You can use Oracle Enterprise Pack for Eclipse to change settings for the current running instance of existing caches, or to flush caches. When you configure a cache, you modify its parameters to change its behavior or capacity. For example, you can set up a cache to hold only the most recent 200 entries and set the amount of time (in milliseconds) to remain in the cache. You can also flush a cache so that all new requests for information come from the database.

You cannot add a new cache using the Oracle Enterprise Pack for Eclipse user interface. However, you can add a cache by manually editing the `META-INF/p13n-content-config.xml` cache configuration file in the in the content directory (named `EarContent` by default) of the EAR project. You can also copy a cache file from the Merged Project view into your project if desired.

The cache changes that you make using Oracle Enterprise Pack for Eclipse are not persisted and will be lost the next time you publish the application or restart the server. To make persistent changes, use the WebLogic Portal Administration Console.

Caches are read-only and cluster-aware.

8.8.1 Changing Cache Settings in Oracle Enterprise Pack for Eclipse

Note: Before you can perform the steps in this section, your server must be running.

To change cache settings in Oracle Enterprise Pack for Eclipse:

1. Select **Run > Portal Cache Manager**.

The Portal Cache Manager dialog displays, including a list of the current "live" caches. The caches displayed in this dialog comprise a superset of the caches that you can display in the Administration Console; the list in the Portal Cache Manager dialog includes the configured caches as well as caches that are triggered dynamically based on the processes that you are using in your portal.

2. Select a cache to change its settings.

Use the table below as a guide to the settings that you can change:

Table 8–7 Configurable Cache Settings in Oracle Enterprise Pack for Eclipse

| Field/Button | Description |
|----------------------|--|
| Is Enabled check box | Select this check box to enable or disable the cache. If you disable a cache, it still exists, but any requests to that cache would return a null value. You might want to disable a cache if, for example, you are testing placeholders or content selectors and you want to make sure that a value returned to you is the value from the database and not a cached value. |
| Is Configured | This read-only field indicates whether or not the cache has been configured using the Administration Console or using shared library or application descriptors. |
| Max Entries | The maximum number of entries (keys) that the cache should hold; after this limit is reached, the cache eliminates the least recently used keys. |
| Time-To-Live | The amount of time that an entry should remain in the cache, in milliseconds; for example, a value of 3600000 equals one hour, in milliseconds. |
| Description | This read-only field displays the description as it was entered in the Administration Console or using shared library or application descriptors. |
| Hit Rate | This read-only field displays statistics about cache activity, if this information is returned by the server. |
| Reset | Click this button to reset the dialog to the values that were previously displayed. |
| Set Values | If you change a value in the dialog, click Set Values to save your changes. Changing a value here changes it only for the running instance, not for the configured cache. |
| Flush | Click this button to clear the contents of the cache. Flush allows you to clear the contents of any displayed cache. From the Administration Console, you can flush only configured caches. |
| Refresh | Click this button to reset the dialog to show any new caches or cache updates that might have occurred. |

1. Click **Close** when finished.

For detailed descriptions of each cache, refer to the documentation for the specific feature that is related to that cache. For example, personalization-related caches are described in the *Oracle Fusion Middleware Interaction Management Guide for Oracle WebLogic Portal*.

8.9 Cache Management With Oracle Coherence

This section explains how to install and configure the Oracle Coherence P13N Cache Provider as the default cache provider for WebLogic Portal.

8.9.1 Introduction

WebLogic Portal includes a native, distributed cache implementation, as described in [Section 8.8, "Cache Management in Oracle Enterprise Pack for Eclipse"](#) and in the *Oracle Fusion Middleware Cache Management Guide for Oracle WebLogic Portal*.

You can also substitute the Oracle Coherence P13N Cache Provider as the default cache provider for WLP. For information on Oracle Coherence, refer to the product page on the Oracle Technology Network. See also the product wiki page, "Coherence 3.5 Home."

The Oracle Coherence P13N Cache feature includes a WLP-specific implementation. This implementation provides an identically named Oracle Coherence cache to replace each of the WLP native caches. All you have to do to use Oracle Coherence with WLP is install and configure the Oracle Coherence components as described in this section.

8.9.2 Installing and Configuring Coherence

To use the Oracle Coherence P13N Cache Provider with WLP:

1. Download the appropriate Oracle Coherence ZIP file from the Oracle download site. You can find a link to the download site on the main Oracle Coherence product web page.
2. From the downloaded ZIP file, open `coherence/lib/coherence-wlp.jar`.
3. In the JAR file, open the file `portal-cache-config.xml`. This file lists all of the supported caches and their configuration parameters.
4. Optionally, configure the caches by editing the `portal-cache-config.xml` file. For more information about each XML element in the configuration file, see "Cache Configuration Elements" in the Coherence Knowledge Base. Information about each cache is provided in the `portal-cache-config.xml` file itself.

Note: The `portal-cache-config.xml` file contains a number of caches that are deprecated or obsolete. Oracle recommends that you remove these caches from the configuration file and then repackage the JAR file before deploying it. For more information, see [Section 8.9.3, "Removing Deprecated and Obsolete Caches."](#)

5. Configure the Coherence P13N CacheProvider to be the default provider. To do this, edit the `p13n_cache_config.xml` file, which is located in each application's `META-INF` directory. Add the following line immediately before the first `<cache>` element in the file:

```
<default-provider-id>com.tangosol.coherence.weblogic</default-provider-id>
```

6. Also add the following line to the `p13n_cache_config.xml` file. This configuration improves the performance of cache handling by preventing multicast during cache flushing when using Coherence cache with WLP in a cluster.

```
<flushcluster>>false<\flushcluster>
```

8.9.3 Removing Deprecated and Obsolete Caches

Several caches that are included in the `portal-cache-config.xml` file are deprecated or obsolete. Oracle recommends that you remove these caches from the configuration file before deploying the Oracle Coherence cache provider.

Note: Removing the obsolete caches is optional. If you leave them in the configuration file, they will be created anyway and consume memory resources unnecessarily. Also, they will tend to clutter the cache monitoring tools.

Caches you can safely remove from the `portal-cache-config.xml` file are:

- CategoryCache
- documentContentCache:
- documentIdCache
- documentMetadataCache
- discountAssocCache
- discountCache
- globalDiscountAssocCache
- globalDiscountCache
- ProductItemCache

To remove a cache from the configuration file, simply delete the entire `<cache-mapping>` element in which the cache is defined.

8.10 Improving WebLogic Server Administration Console Performance on a Managed Server

If you are running your portal application on a Managed Server, you can improve the performance of the WebLogic Server Administration Console by using the `<context-param>` parameter in the `web.xml` file, as shown in this example:

```
<context-param>
  <param-name>portalFileDirectory</param-name>
  <param-value></param-value>
</context-param>
```

This parameter takes advantage of an optimized call that returns EAR content information. Without this parameter, the call recursively searches for `.portal` files. If you use this parameter, you must place all of the `.portal` files in the same directory under the portal web application. Use the `<param-value>` to specify the directory. In the example above, all `.portal` files reside in the web application's root directory (`/`).

8.11 Behavior of the "Return to Default Page" Attribute

When a Book's 'Return To Default Page' attribute is set to true, the portal should display the Book's default page when the book is the target of a navigation URL. The behavior might not be what you expect. The purpose of this section is to clarify the behavior.

This section addresses the nesting of books where the immediate children of the Main Book are books and the return to default only applies when moving between books, not within books. [Figure 8-13](#) represents a simple portal hierarchy where each page has a portlet that contains a URL to Book2.

Figure 8–13 Simple Portal Hierarchy

```

Main Book - Book 2 is the default book for the main book
  Book 2 - Return To Default = true with default page = Page 2
    Page 2
    Page 3
  Book 3
    Page 4
    Page 5

```

When the above portal is rendered, Book 2 and Page 2 are displayed.

1. The user clicks on Page 3, moving off of the default page
2. The user clicks on Book 3 (which results in Page 4 being displayed and moving into a different book).
3. The user clicks on the URL for Book 2 and Page 2 is displayed

This works as expected as Page 2 is the default for Book 2 and the last active page in Book2 was Page 3.

When the above portal is rendered, Book 2 and Page 2 are displayed.

1. The user clicks on Page 3, moving off of the default page
2. The user clicks on the URL for Book2 and Page 3 is displayed

The reason for this is because Page 3 is within the same book and therefore, the return to default is not applied.

[Figure 8–14](#) shows a hierarchy where pages are the children of the main book, the Return to Default feature does not apply.

Figure 8–14 Sample Portal Hierarchy

```

Main Book - Page 1 is the default page for the main book
  Page 1
    Book 2 - Return To Default = true with default page = Page 2
      Page 2
      Page 3
    Page 6
  Book 3
    Page 4
    Page 5

```

Using the above hierarchy, the user is returned to the last active page in Book 2.

8.12 Customizing Problem Validation Settings

Oracle Enterprise Pack for Eclipse displays error, warning, and informational messages in the Problems view. The WebLogic Portal validation framework is built upon the Web Standard Tools framework of the Eclipse platform.

8.12.1 Enabling/Disabling WebLogic Portal Validation

You can enable or disable validation globally in Oracle Enterprise Pack for Eclipse or on a per-project basis.

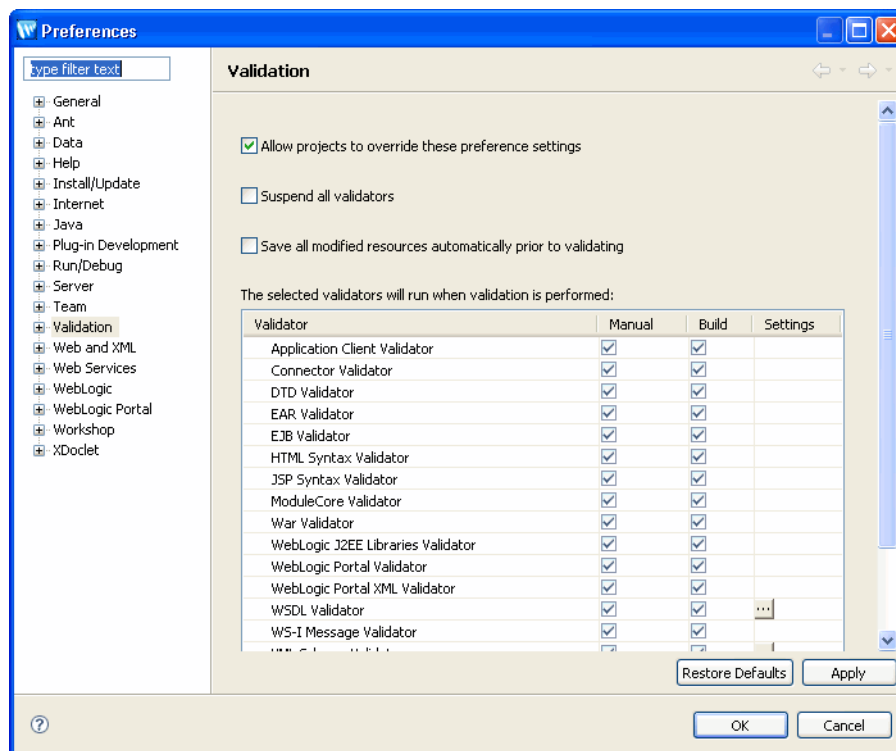
8.12.1.1 Enabling/Disabling Validation Globally

To enable or disable validation for all projects in a workspace, do the following:

1. Select **Window > Preferences**.
2. In the Preferences dialog, select **Validation**.
3. In the Validation dialog, the validation **WebLogic Portal Validator** and **WebLogic Portal XML Validator** are selected by default. You can disable either of these settings by deselecting the corresponding check box. Select the **Manual** check box to perform validation during manual builds, and select the **Build** check box to perform validation during automatic builds.
 - **WebLogic Portal Validator** – Enables all WebLogic Portal validation except XML schema checking.
 - **WebLogic Portal XML Validator** – Enables only schema checking for WebLogic Portal files.

The Validation dialog is shown in [Figure 8–15](#).

Figure 8–15 Validation Dialog



8.12.1.2 Enabling/Disabling Validation Per Project

To enable or disable validation for a project, do the following:

1. Right-click the project in the Package Explorer and select **Properties**.
2. In the Preferences dialog, select **Validation**.

3. In the Validation dialog, uncheck **Override Validation Preferences**.
4. In the Validation dialog, the validation **WebLogic Portal Validator** and **WebLogic Portal XML Validator** are selected by default. You can disable either of these settings by deselecting the corresponding check box. Select the **Manual** check box to perform validation during manual builds, and select the **Build** check box to perform validation during automatic builds. These settings are described in the previous section, [Section 8.12.1.1, "Enabling/Disabling Validation Globally."](#)

8.12.2 Customizing WebLogic Portal Validation Mappings

You can the way the severity of errors, warnings, and informational messages are mapped and reported in Oracle Enterprise Pack for Eclipse. This section explains how to customize validation mappings globally and per project.

The main areas of portal code that are checked by the WebLogic Portal validation framework include the following:

- Portlet, book, and page definition labels
- Book, page, and portlet references in portlets
- Portlet event validity
- Markup file references and duplicate labels
- Project relationships (a portal web application must be deployed in portal EAR, for example)

8.12.2.1 Overview

Ordinarily, when errors occur in a project, Oracle Enterprise Pack for Eclipse prevents you from deploying your application. In some cases, you might want to ignore such problems and deploy the application anyway. Or, you might have a policy whereby warnings are not allowed in a deployed application. In these cases, you can choose to flag the warnings as errors to prevent deployment. Although you cannot enable or disable specific problem-related messages, you can modify way the severity of types of problems are mapped and reported.

8.12.2.2 Customizing Validation Globally

To customize validation for all projects in your workspace, do the following:

1. Select **Window > Preferences**.
2. In the Preferences dialog, select **Validation > WebLogic Portal Verification Settings**.
3. In the WebLogic Portal Verification Settings dialog, you can modify how the following kinds of problems are reported:
 - **Serious problems should be flagged as** – Lets you change the severity assigned to problems that would normally be reported as an error.
 - **Potential problems should be flagged as** – Lets you change the severity assigned to problems that would normally be reported as a warning.
 - **Simple alerts should be flagged as** – Lets you change the severity assigned to problems that would normally be reported as an information message.

Tip: Select the **Verify related files on incremental builds** check box to allow related files to be validated when an incremental build is performed. This feature is useful if you happen to copy a portal resource, such as a book within a portal web application. You will see validation errors related to duplicate definition labels reported on both the original and duplicate file. If you change the duplicate definition labels, only the changed file is validated on incremental builds: the validation errors remain for the original file. If you select **Verify related files on incremental builds**, both the newly changed and original file are validated and the validation errors on the original file are cleared.

8.12.2.3 Customizing Validation Per Project

To customize validation for all projects for specific projects, do the following:

1. Right-click the project in the Package Explorer and select **Properties**.
2. In the Preferences dialog, select **Validation > WebLogic Portal Verification Settings**.
3. In the WebLogic Portal Verification Settings dialog, uncheck **Override Validation Preferences**.
4. In the WebLogic Portal Verification Settings dialog, you can modify how the following kinds of problems are reported. See the previous section, [Section 8.12.2.2, "Customizing Validation Globally."](#)

Note: Project-level settings take precedence over global settings.

8.13 Enabling Placeable Movement

You can enable a portal so that users can drag and drop individual portlets or books (placeables) on a page. This feature, called placeable movement, provides a convenient way for users to customize the location of content on their portal desktop.

Note: Placeable movement relies on the WLP REST API, which enables clients to dynamically retrieve, modify, and update portal data. See the *Oracle Fusion Middleware Client-Side Developer's Guide for Oracle WebLogic Portal* for more information about the REST API.

Enabling placeable movement is a two-step process:

1. In Oracle Enterprise Pack for Eclipse, enable the placeable movement feature for a portal. See [Section 8.13.1, "Configuring the Portal in Oracle Enterprise Pack for Eclipse."](#)
2. In the Portal Administration Console, create a desktop based on the portal that you enabled for placeable movement in Step 1. See [Section 8.13.2, "Setting Up a Desktop in the Administration Console."](#)

Note: Only authenticated users can use placeable movement. Typically, you provide a login portlet to satisfy this requirement. See the *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal* for more information.

8.13.1 Configuring the Portal in Oracle Enterprise Pack for Eclipse

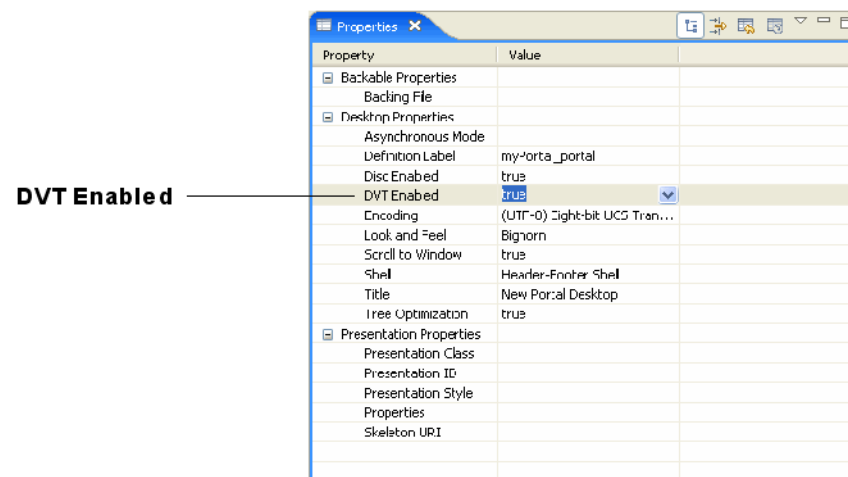
1. In Oracle Enterprise Pack for Eclipse, open a portal in the Portal editor.
2. Be sure the Properties editor is open for the portal. Select **Window > Show View > Properties** to open it.
3. Click the desktop border, as shown in [Figure 8–16](#).

Figure 8–16 *Selecting the Desktop Border*



1. In the Properties editor, set DVT Enabled to true, as shown in [Figure 8–17](#). Note that the Disc Enabled field is automatically set to true after this selection.
2. Save the portal.

Figure 8–17 *Selecting DVT Enabled*



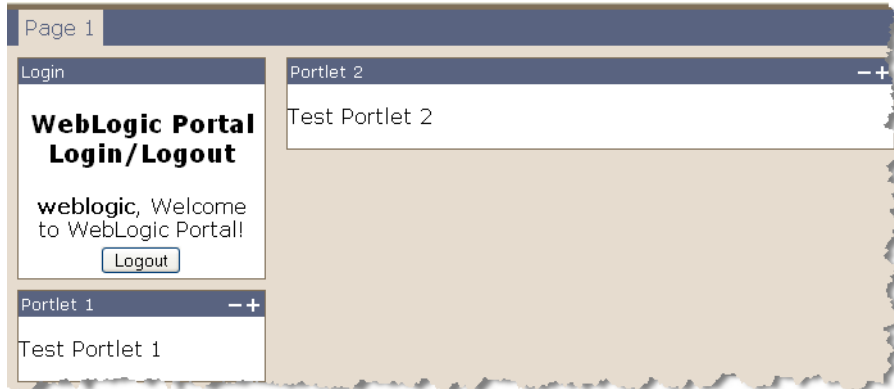
8.13.2 Setting Up a Desktop in the Administration Console

After you have created a portal with placeable movement enabled you need to use the Portal Administration Console to create a desktop using the `.portal` file as a template. After you complete this task, you can then open the desktop and test placeable movement.

1. Open the Portal Administration Console in a browser and log in. See [Section 15.3, "Starting and Logging In to the Administration Console"](#) for more information.
2. Create a desktop based on the `.portal` file you configured in Oracle Enterprise Pack for Eclipse, as explained in [Section 8.13.1, "Configuring the Portal in Oracle Enterprise Pack for Eclipse."](#) See [Section 15.12.1, "Creating a Desktop"](#) for more information.

3. If your portal does not already contain a login mechanism, add the login portlet to a page of the desktop. Only authenticated users can use placeable movement. For more information on authentication, see the *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal*.
4. (Optional) Add additional portlets to the desktop pages. [Figure 8–18](#) shows a sample portal with a login portlet and two test portlets.

Figure 8–18 Portal Page Initial Configuration

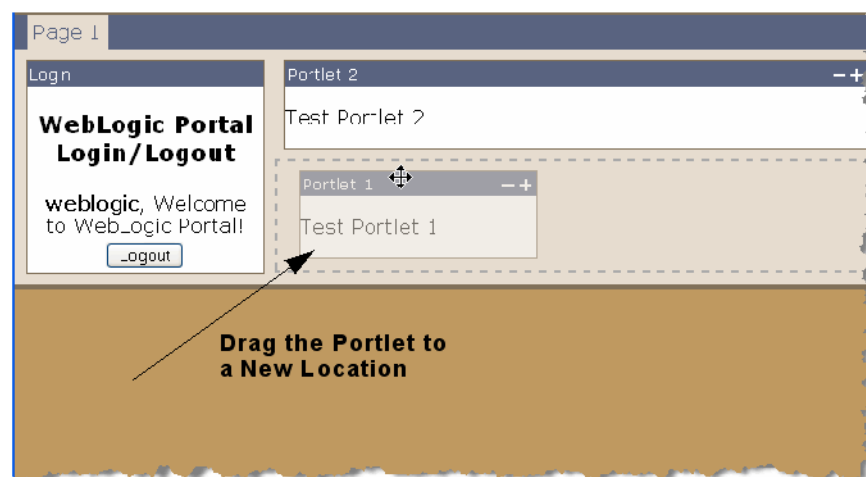


8.13.3 Testing Placeable Movement

To test placeable movement:

1. In the Administration Console, select View Desktop to view the portal in a browser.
2. Log in to the portal using the login mechanism provided.
3. To move a portlet, place the mouse pointer over the title bar. When the pointer changes shape, hold down the left mouse button and drag the portlet to its new location. [Figure 8–19](#) shows that Portlet 1 has been dragged to the second column of the portal page.

Figure 8–19 Moving a Portlet



1. Release the mouse button.

The new portlet placement is automatically communicated to the server and stored. Whenever the user revisits the page, the new portlet arrangement is retained.

8.13.4 Enabling Placeable Movement for an Existing Desktop

You can also enable placeable movement for an existing desktop using the Administration Console. See [Section 15.12, "Desktops."](#)

8.13.5 Limitations

- Placeable movement is disabled on portal layouts that flow horizontally. For more information on layouts, see [Section 7.11, "Working with Layouts."](#)
- If a placeholder is locked, users of the site cannot drag portlets out of or drop into that placeholder. For information on placeholders, see the chapter "Assembling Portlets into Desktops" in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.
- If a user is not entitled to edit a page, placeable movement is disabled for that user for that page. For information on visitor entitlement, see "Setting Visitor Entitlements on Portal Resources in the Library" in the *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal*.

8.14 Using Placeable Movement with Custom Layouts

This section includes these topics:

- [Section 8.14.1, "Introduction"](#)
- [Section 8.14.2, "Rules for Using Placeable Movement with Custom Layouts"](#)
- [Section 8.14.3, "Sample Code"](#)

8.14.1 Introduction

Custom layouts offer you flexibility when designing portal pages. Oracle provides limited support for using placeable movement with custom layouts. Because the placeable movement feature is closely coupled to page layout, you must follow certain rules and patterns when writing custom layouts that use placeable movement. These rules and patterns are described in this section. For basic information on custom layouts, see [Section 7.11.2, "Creating a Custom Layout."](#)

Note: Oracle recommends that you use the standard flow layouts with placeable movement whenever possible. Follow the rules in this section only if you want to write a custom layout that uses placeable movement.

8.14.2 Rules for Using Placeable Movement with Custom Layouts

To use placeable movement with custom layouts, follow these rules:

Note: This section assumes you are familiar with WebLogic Portal Look and Feels. To review this topic, see [Chapter 7, "User Interface Development with Look And Feel Features."](#)

- You must use layouts of type `flowLayout`: `<netuix:flowLayout>`.
- You must use a Bighorn-based look and feel as the starting point for any custom look and feel.
- The skeleton JSP file for the custom layout must follow the pattern shown in [Example 8-5](#). According to this pattern, placeholders must be rendered using `<div>` tags that use WebLogic Portal `<skeleton:control>` tags to enclose `<skeleton:child>` tags.

Note: The default skeleton JSP `flowlayout.jsp` (the standard skeleton JSP for a flow layout when no other skeleton JSP is specified) follows a consistent HTML rendering pattern that is required for DND to work properly. You can find the complete `flowlayout.jsp` file in the Merged Project view in the portal web application at `/framework/skeletons/bighorn/flowlayout.jsp`. Do not change this file; use it as an example only.

Example 8-5 Skeleton JSP Pattern for Custom Layouts That Use Placeable Movement

```
<skeleton:context type="flowlayoutpc"> //presentation context
  <skeleton:control name="div" presentationContext="${flowlayoutpc}" class="wlp-bighorn-layout"
  >
  <c:set var="ph" value="${flowlayoutpc.placeholders}" />
  <c:set var="placeholder1" value="${ph[0]}" /> //example placeholder declaration
  <skeleton:control name="div" presentationContext="${placeholder1}"
  presentationClass="wlp-bighorn-layout-cell wlp-bighorn-layout-flow-horizontal"
  presentationStyle="width: 70%;">
    <skeleton:child presentationContext="${placeholder1}"/>
  </skeleton:control> //correct wrapping of the placeholder control and child
  </skeleton:control>
</skeleton:context>
```

- Use style attributes from the Bighorn Look and Feel. The code excerpt shown in [Example 8-5](#) uses these style attributes. Most of these attributes are located in the portal web application in `/framework/skeletons/bighorn/css/layout.css`. These classes are not required but, Oracle recommends that you use them as a guide to create custom CSS attributes. For example, to make `<div>` elements appear side-by-side, the `wlp-bighorn-layout-flow-horizontal` style can be applied. This style adds the `"float: left;"` attribute, which may be necessary for certain custom layouts. Other styles include `min-height`, `overflow`, and so on.
- Placeholders that reside above other placeholders must be locked to avoid inconsistent behavior. Typically, this case occurs in a layout with multiple rows. If the top placeholders are not locked, the placeholder DOM structure can dynamically change when portlets are moved, which can adversely affect the portlets in the bottom rows.
- Do not use placeholders with the `flow` attribute set to `horizontal` in the `.layout` file. These placeholders cannot be registered as drop targets. Portlets cannot be dragged from or dropped into a placeholder with this setting.
- Set the value of the portal desktop property `ScrollToWindow` to `false`.
- Do not use the following tags in portlet JSP files: `<netui:html>`, `<head>`, `<netui:base/>`, and `<netui:body>`. For more information, see “Portlets and Page Flow: Tags To Avoid When Combining These Technologies” at

http://blogs.oracle.com/gmurnock/2008/09/portlets_and_page_flow_tags_to_1.html.

8.14.3 Sample Code

This section lists sample files that illustrate the correct way to implement placeable movement with a custom layout following the rules and patterns described previously. [Example 8-6](#) is a sample `.layout` file. [Example 8-7](#) is a sample layout JSP file. [Example 8-8](#) is a sample layout HTML file. See also [Section 7.11.2, "Creating a Custom Layout."](#) The code also references `custom_layout.gif`, the image file shown in [Figure 8-20](#).

Figure 8-20 Sample GIF Image File Used by the Custom Layout



Example 8-6 Sample `custom_layout.layout` File

```
<?xml version="1.0" encoding="UTF-8"?>
<netuix:markupDefinition
  xmlns:netuix="http://www.bea.com/servers/netuix/xsd/controls/netuix/1.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.bea.com/servers/netuix/xsd/controls/netuix/1.0.0
markup-netuix-1_0_0.xsd">
  <netuix:locale language="en" />
  <netuix:markup>

    <netuix:flowLayout markupType="Layout"
      markupName="DNDcustom_layout"
      title="DND custom layout"
      orientation="horizontal"
      description="Example custom layout DND compatible"
      skeletonUri="/framework/markup/layout/custom_layout.jsp"
      htmlLayoutUri="/framework/markup/layout/custom_layout.html.txt"
      iconUri="/framework/markup/layout/custom_layout.gif"
      thumbnailUri="/framework/markup/layout/custom_layout.gif" >

      <netuix:placeholder markupType="Placeholder"
        markupName="top_left_span"
        title="topleftspan"
        usingFlow="false"
        description="top left placeholder spanning 2 columns">
      </netuix:placeholder>

      <netuix:placeholder markupType="Placeholder"
        markupName="top_right"
        title="topright"
        usingFlow="false"
        description="top right placeholder" >
      </netuix:placeholder>
```

```

<netuix:placeholder markupType="Placeholder"
    markupName="lower_left"
    title="lowerleft"
    usingFlow="false"
    description="lower left placeholder in second row">
</netuix:placeholder>

<netuix:placeholder markupType="Placeholder"
    markupName="lower_middle"
    title="lowermid"
    usingFlow="false"
    description="mid placeholder in second row">
</netuix:placeholder>

<netuix:placeholder markupType="Placeholder"
    markupName="lower_right"
    title="lowerright"
    usingFlow="false"
    description="lower right placeholder in second row" >
</netuix:placeholder>

</netuix:flowLayout>

</netuix:markup>
</netuix:markupDefinition>

```

Example 8-7 Sample custom_layout.jsp File

```

<jsp:root version="2.0"
    xmlns:jsp="http://java.sun.com/JSP/Page"
    xmlns:c="http://java.sun.com/jsp/jstl/core"
    xmlns:skeleton="http://www.bea.com/servers/portal/tags/netuix/skeleton"
>
    <jsp:directive.page session="false" />
    <jsp:directive.page isELIgnored="false" />

    <skeleton:context type="flowlayoutpc">

        <skeleton:control name="div" presentationContext="${flowlayoutpc}"
class="wlp-bighorn-layout wlp-bighorn-layout-flow" cellspacing="0"
cellpadding="0" width="100%">
            <c:set var="ph" value="${flowlayoutpc.placeholders}" />
            <c:set var="topleft" value="${ph[0]}" />
            <c:set var="topright" value="${ph[1]}" />
            <c:set var="lowerleft" value="${ph[2]}" />
            <c:set var="lowermid" value="${ph[3]}" />
            <c:set var="lowerright" value="${ph[4]}" />

            <div style="width: 70%; float: left" >
                <skeleton:control name="div" presentationContext="${topleft}"
presentationClass="wlp-bighorn-layout-cell">
                    <skeleton:child presentationContext="${topleft}" />
                </skeleton:control>
                <skeleton:control name="div" presentationContext="${lowerleft}"
presentationStyle="width: 40%;"
                    presentationClass="wlp-bighorn-layout-cell
wlp-bighorn-layout-flow-horizontal">

```

```

        <skeleton:child presentationContext="${lowerleft}" />
    </skeleton:control>
    <skeleton:control name="div" presentationContext="${lowermid}"
presentationStyle="width: 60%;"
        presentationClass="wlp-bighorn-layout-cell
wlp-bighorn-layout-flow-horizontal">
        <skeleton:child presentationContext="${lowermid}" />
    </skeleton:control>
</div>

    <div style="width: 30%; float:left">
        <skeleton:control name="div" presentationContext="${topright}"
presentationClass="wlp-bighorn-layout-cell"
                presentationStyle="width: 100%;">
            <skeleton:child presentationContext="${topright}" />
        </skeleton:control>
        <skeleton:control name="div" presentationContext="${lowerright}"
presentationClass="wlp-bighorn-layout-cell"
                presentationStyle="width: 100%;">
            <skeleton:child presentationContext="${lowerright}" />
        </skeleton:control>
    </div>

</skeleton:control>
</skeleton:context>

</jsp:root>

```

Example 8-8 Sample custom_layout.html File

```

<table class="portalLayout" id="customPortalLayout" width="100%" height="100%">
  <tr>
    <td class="placeholderTD" valign="top" colspan="2" width="70%">
      <placeholder number="0" />
    </td>
    <td class="placeholderTD" valign="top" width="30%">
      <placeholder number="1" />
    </td>
  </tr>
  <tr>
    <td class="placeholderTD" valign="top" width="30%">
      <placeholder number="2" />
    </td>
    <td class="placeholderTD" valign="top" width="40%">
      <placeholder number="3" />
    </td>
    <td class="placeholderTD" valign="top" width="30%">
      <placeholder number="4" />
    </td>
  </tr>
</table>

```

8.15 Localizing Titles for File-Based Books, Pages, and Portlets

You can localize the title of a file-based book, page, or portlet by specifying a localized resource bundle in the .portlet, .page, or .book file. For instance, to localize the title of a page, modify the .page file as follows:

1. Specify values for the `titleKey` and `localizationBundle` attributes. Note that the `titleKey` attribute value will be substituted for the title attribute for the specified locale. The `localizationBundle` value identifies the resource bundle.

For example, assume that you have the a resource bundle `myresources/PageBundle`, where the directory that contains `myresources` is in the Java CLASSPATH for the web application:

```
<netuix:page
  definitionLabel="page2"
  ...
  title="Default Title: Will Not Display When Local Text Is Substituted"
  titleKey="page2.title.key"
  localizationBundle="myresources.PageBundle"
  ...
```

2. Create a resource bundle properties file with the locale-specific extension. For example:

`myresources/PageBundle_<locale>.properties`

where `<locale>` is the language code, for example, `PageBundle_fr.properties` for a French translation.

3. Add the correct key/value pairs to the properties file, such as `page2.title.key=This is my Localized Title`.

Follow the same procedure to localize portlets and books.

Note: This procedure is only used for localizing the title attribute of file-based (non-streaming) portal resources. To localize a portlet in a portal desktop that is managed by the Administration Console (sometimes called a “streaming portal”), see [Section 15.10.4, “Localizing a Portal Resource”](#).

Using the Dynamic Visitor Tools

This chapter discusses how to configure, use, and extend the Dynamic Visitor Tools (DVT). This chapter includes the following sections:

- [Section 9.1, "What Is the DVT?"](#)
- [Section 9.2, "Configuring the DVT"](#)
- [Section 9.3, "Working with the DVT"](#)
- [Section 9.4, "Installing the Sample Login Shell"](#)

9.1 What Is the DVT?

The Dynamic Visitor Tools ("DVT") feature includes tools that allow end users to customize the appearance, behavior, and content of Oracle Oracle WebLogic Portal applications. The DVT enables end users to:

- Add pages and portlets to your desktop.
- Drag and drop pages and portlets.
- Change the appearance of desktops, books, pages, and portlets.
- Change the menu structure of desktops and books.
- Change the layout of pages.
- Customize the desktop for all desktop users.

An administrative user in Admin Mode can make any of the above listed changes apply to all desktop users.

Note: Oracle Oracle WebLogic Portal includes two features that, when enabled, let users customize portals.

The DVT—described in this chapter—uses Oracle Oracle WebLogic Portal's Web 2.0 functionality, such as a Dynamic Interface SCripting (Disc) framework and a REpresentational State Transfer (REST) Framework. We recommend that you use the DVT for all new Oracle Oracle WebLogic Portal applications.

The other feature, Visitor Tools, does not utilize Oracle Oracle WebLogic Portal's Web 2.0 functionality. For details, see [Chapter 11, "Enabling Visitor Tools."](#)

9.2 Configuring the DVT

These instructions assume that a portal web project exists for which you want to configure the DVT. For information on creating a portal web project using the Portal Web Project Wizard, see [Section 4.6, "Portal Web Project Wizard."](#)

To configure the DVT:

1. Add the Portal Dynamic Visitor Tools facet to the portal web project. For details, see [Section 9.2.1, "Adding the Portal Dynamic Visitor Tools Facet to the Portal Web Project."](#)
2. Add a Login portlet to the desktop; the DVT requires that users be authenticated.

Tip: As a convenience, WLP provides an optionally installed login shell to provide the required login capability for DVT. For more information, see [Section 9.4, "Installing the Sample Login Shell."](#)

3. Enable the DVT. For details, see [Section 9.2.2, "Enabling the DVT."](#)
4. Test the DVT configuration. For details, see [Section 9.2.3, "Testing the DVT Configuration."](#)

9.2.1 Adding the Portal Dynamic Visitor Tools Facet to the Portal Web Project

You must add the Portal Dynamic Visitor Tools facet to the portal web project for which you want to enable the DVT:

You do not need to perform this procedure if:

- You created the portal web project using the Portal Web Project Wizard and kept the wizard's default selections, which includes adding the Portal Dynamic Visitor Tools facet to the web project.
- You already added the Portal Dynamic Visitor Tools facet to the portal web project.

To add the Portal Dynamic Visitor Tools facet:

1. In Oracle Enterprise Pack for Eclipse, right-click the desired portal web project, then select **Properties**.
2. In the portal web project's Properties dialog box, select **Project Facets**.
3. In the Project Facets tree, expand **WebLogic Portal**.
4. Select **Portal Dynamic Visitor Tools**.
5. Click **OK**.

9.2.2 Enabling the DVT

This section discusses how to enable the DVT.

Note: Only authenticated users can use the DVT. Typically, you provide a login portlet to satisfy this requirement. As a convenience, WLP provides an optionally installed login shell to provide the required login capability for DVT. For more information, see [Section 9.4, "Installing the Sample Login Shell."](#)

Note: These instructions assume that a desktop already exists for which you want to enable the DVT. For instructions on setting up a desktop in the Oracle Oracle WebLogic Portal Administration Console, see "Setting Up a Desktop in the Administration Console" in *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.

Note: You do not need to perform this procedure if you already enabled the DVT for the desktop when you created the desktop in Oracle WebLogic Portal Administration Console.

If you are a portal application developer, you enable the DVT for a file-based portal (using Oracle Enterprise Pack for Eclipse). If you are a portal application administrator, you enable the DVT for a streaming portal (using the Oracle Oracle WebLogic Portal Administration Console). This section discusses:

- [Section 9.2.2.1, "Enabling the DVT in a File-based Portal"](#)
- [Section 9.2.2.2, "Enabling the DVT for a Streaming Portal"](#)

9.2.2.1 Enabling the DVT in a File-based Portal

You enable the DVT in a file-based portal using Oracle Enterprise Pack for Eclipse. Note that the DVT only works with a streaming desktop.

Note: The DVT only works with a streaming desktop (one that has been configured in the Administration Console). By enabling the DVT in the IDE, as explained in this section, the DVT is enabled by default when you convert the `.portal` to a streaming desktop.

To enable the DVT for a file-based portal:

1. In Oracle Enterprise Pack for Eclipse, open the desired portal (`.portal` file) for which you want to enable the DVT in the Portal editor.
2. Ensure that the Properties editor is open for the portal.

If you need to open it, select **Window > Show View > Properties**.

3. Click the desktop border, as shown in [Figure 9–1, "Clicking the Desktop Border"](#).

Figure 9–1 Clicking the Desktop Border

4. In the Properties editor, set the following properties:
 - **Asynchronous Mode** to enabled.
 - **DVT Enabled** to `true` (Note that when you set this property to `true`, the **Disc Enabled** property is automatically set to `true`.)
5. Save the portal.
6. If you have not yet created a desktop, create a desktop using the Oracle WebLogic Portal Administration Console.

For details on creating a desktop, see "Creating a Desktop" in *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.

9.2.2.2 Enabling the DVT for a Streaming Portal

You enable the DVT for a streaming portal using the Oracle Oracle WebLogic Portal Administration Console.

Note: You do not need to perform this procedure if you enabled the DVT when you created a desktop using the Desktop Creation Wizard.

To enable the DVT for a streaming portal:

1. Launch the Oracle WebLogic Portal Administration Console.

To do so, in Oracle Enterprise Pack for Eclipse, select **Run > Open Portal Administration Console**, then log in.
2. On the administration console's home page, click **Portal Management**.
3. In the navigation tree, navigate to and click the name of the desktop for which you want to enable the DVT.
4. On the Details tab, click the **Advanced Properties** link to launch the Update Tree Optimization dialog box.
5. In the Enable DVT drop-down list box, choose **true**.
6. Click **Update**.

You are returned to the desktop's properties.

9.2.3 Testing the DVT Configuration

This procedure describes how to test the DVT configuration.

Note: You can only use the DVT Customizations feature in a streaming portal (one that has been created through the WLP Administration Console).

To test the DVT configuration:

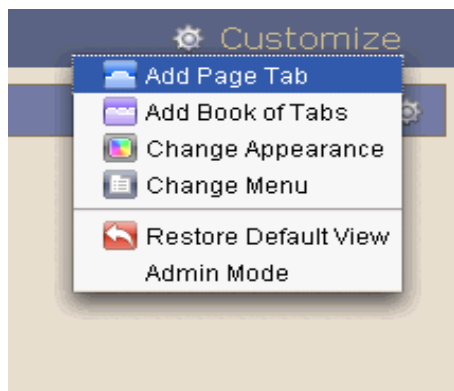
1. In the Oracle WebLogic Portal Administration Console's navigation tree, navigate to and click the name of the desktop for which you want to enable the DVT.
2. Click **View Desktop** to view the desktop in a browser.
3. Log in to the desktop using a login portlet; DVT users must be authenticated.

Tip: As a convenience, WLP provides an optionally installed login shell to provide the required login capability for DVT. For more information, see [Section 9.4, "Installing the Sample Login Shell."](#)

4. The Customize button should appear in the upper right-hand corner of the desktop.

If you click the **Customize** button, its menu should include the options shown in [Figure 9-2, "Customize Menu Options"](#). Note that the Admin Mode function is only visible for users with administrator privileges.

Figure 9-2 *Customize Menu Options*



9.3 Working with the DVT

As an end user, the DVT enables you to customize your own view of a desktop, as well as its pages, books, and portlets.

If you belong to the Portal Administrators group, you can customize the desktop for all users. For details, see [Section 9.3.6, "Customizing the Desktop for All Desktop Users."](#)

This section includes the following topics:

- [Section 9.3.1, "Accessing Customization Options"](#)
- [Section 9.3.2, "Adding a Page Tab or Book of Tabs,"](#)

- [Section 9.3.3, "Changing the Appearance of the Portal, Pages, Books, and Portlets"](#)
- [Section 9.3.5, "Restoring the Default View"](#)
- [Section 9.3.6, "Customizing the Desktop for All Desktop Users"](#)
- [Section 9.3.7, "Changing the Layout of a Page"](#)
- [Section 9.3.8, "Adding and Removing Content"](#)

9.3.1 Accessing Customization Options

The DVT customization options that are available to you depend on the user entitlements that have been granted to you.

To access the DVT's customization options for the desktop, click the **Customize** button in the upper right-hand corner of the desktop.

To customize pages, books, or portlets, click the **Customize** icon (as shown in [Figure 9–2, "Customize Menu Options"](#)) within the desired page, book, or portlet.

Figure 9–3 Customize Icon



9.3.2 Adding a Page Tab or Book of Tabs

A *page tab*—also known as a *page*—is the primary container for individual portal elements such as portlets. You add pages to *books*, which are also known as *books of tabs*. The pages contained within a book can themselves contain portlets and books, with the latter allowing for an infinite level of nesting. Nesting books provides a hierarchical organization that is very flexible, although there is a practical limit to the nesting based on the available screen real estate.

To add a page tab or book, click the **Customize** button, then choose **Add Page Tab** or **Add Book of Tabs**.

After the pages or books are added, you can do the following:

- Name the page or book. To do so, click the tab name (initially called *New Page* or *New Book*), type the new name, and press the Enter key.
- Make one page or book the default page or book, so that whenever you navigate to the desktop, that page or book always appears initially selected. To do so, click the **Customize** icon for the desired page or book, then choose **Set as Default Tab**.
- Drag and drop tabs to change the order in which they appear on the desktop.

9.3.3 Changing the Appearance of the Portal, Pages, Books, and Portlets

This section discusses:

- [Section 9.3.3.1, "Changing the Appearance of the Portal"](#)
- [Section 9.3.3.2, "Changing the Appearance of Pages, Books, and Portlets"](#)

9.3.3.1 Changing the Appearance of the Portal

You can change the appearance of the portal to suit your individual aesthetic tastes by choosing from various *Look and Feels*. A Look and Feel is a collection of a skin and skeleton that is used to determine the way that a portal is rendered and the way that it

behaves. The Look and Feel of a portal is independent of the organizational and navigational structure of a portal. For more details on Look and Feels, see [Chapter 7, "User Interface Development with Look And Feel Features."](#)

To change the Look and Feel of the portal, click the **Customize** button, then choose **Change Appearance**. The Change Appearance tab on the Edit sheet lists the Look and Feels that you can use. After you have selected a Look and Feel, click **Done** to close the Edit sheet.

Note: Out of the box, DVT only supports Bighorn-based Look and Feels. Although it is possible to write a Look and Feel injector to use a non-Bighorn L&F, extra work is required to make the Placeable Movement feature of the DVT work with this use case. For non-Bighorn L&Fs, the injector/L&F developers must make sure that the Disc calls work with their L&F. For more information, see [Section 9.3.10.1, "Creating a Look and Feel Injector."](#) See also "The WLP Disc Framework" in the *Oracle Fusion Middleware Client-Side Developer's Guide for Oracle WebLogic Portal*.

9.3.3.2 Changing the Appearance of Pages, Books, and Portlets

You can also change the appearance of pages, books, and portlets by choosing from various *themes*. A theme is similar to a Look and Feel; however, the scope of a theme is limited to only a component of a desktop, such as a page, book, or portlet. A theme can be used to change the appearance of a desktop's components without affecting the desktop itself.

To change the appearance of pages, books, or portlets, click the **Customize** icon in the page, book, or portlet that you want to edit, then choose **Change Appearance**. The Change Theme tab on the Edit sheet lists the themes that you can use. After you have selected a theme, click **Done** to close the Edit sheet.

9.3.4 Changing the Menu of the Desktop or a Book

A *menu* provides the user interface for navigating the various pages and books in a desktop. Menus frequently are designed to appear as tabs, trees, or drop-down menus to end users. Oracle Oracle WebLogic Portal is delivered with the following menu types:

- Single Level Menu: Recommended for navigating across multiple pages
- Multi Level Menu: Recommended for navigating across multiple nested books

To change the menu of the desktop or a book, click the **Customize** button (for a desktop) or Customize icon (for a book), then choose **Change Menu**. The Change Book menu on the Edit sheet lists the menus that you can use. If desired, you can search for menus by using the Search field. After you have selected a menu, click **Done** to close the Edit sheet.

9.3.5 Restoring the Default View

Your administrator determines the default desktop customizations for all users of your desktop. At any time, you can revert all of your own customizations and restore your desktop to your administrator's customization settings by clicking the **Customize** button, then choosing **Restore Default View**. For information on customizing the desktop for all desktop users, see [Section 9.3.6, "Customizing the Desktop for All Desktop Users"](#).

9.3.6 Customizing the Desktop for All Desktop Users

By default, when you use the DVT, you are customizing how the desktop appears to you only. If you are an administrator and belong to the Portal Administrators group, you can customize how the desktop appears to all users of the desktop.

To do so, click the **Customize** button, then choose **Admin Mode**. Any changes that you make are applied to all users of the desktop. To exit out of Admin Mode, choose **Admin Mode** again. Desktop users can restore their desktop views to the administrator's customization settings. For details, see [Section 9.3.5, "Restoring the Default View"](#)

9.3.7 Changing the Layout of a Page

A *layout* determines the arrangement of portlets and books within a matrix; one layout is applied to each page. Each cell of this matrix contains a placeholder, which can contain one or more portlets or books that are arranged vertically or horizontally.

To change the layout of a page, click the **Customize** icon on the desired page tab, then choose **Change Layout**. The Changing Layout tab on the Edit sheet lists the layouts that you can use. If desired, you can search for layouts by using the Search field. After you have selected a layout, click **Done** to close the Edit sheet.

9.3.8 Adding and Removing Content

You can add content (in the form of portlets) to a page to suit your individual content needs.

To add a portlet to a page, click the **Customize** icon on the desired page tab, then choose **Add Content**. The Add Content tab on the Edit sheet lists the portlets that you can add. You can also search for portlets by using the Search field. If your administrator has grouped available portlets into portlet categories, you can narrow your search by choosing a portlet category from the category drop-down menu. After you have selected a portlet, click **Done** to close the Edit sheet.

To remove a portlet, select **Remove Portlet** from the **Customize** menu.

Tip: If a page uses a layout that contains two or more columns, you can drag and drop portlets between the page's columns.

9.3.9 Making Remote Portlets Available to Your Users

A portal administrator can make WSRP (remote) portlets available to users' desktops. To make remote portlets available to users:

1. Using the Oracle WebLogic Portal Administration Console, add the desired producer to the library. You will make this producer's portlets available to your users.

For details on adding remote resources to the library, see "Adding Remote Resources to the Library" in *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*.

2. Log in to the DVT.
3. Click the **Customize** button.
4. Choose **Admin Mode**.
5. Click the **Customize** button.
6. Choose **Add Content** to launch the Edit sheet.

7. Click the **Get More Portlets** button to launch the Get More Portlets dialog box.
8. Select the WSRP portlets that you want to make available to your users.

Note: It might take some time for all of the WSRP portlets to load for the first time.

9. Click **Done** to close the Get More Portlets dialog box.
10. Click **Done** to close the Edit sheet.

9.3.10 Implementing Custom Look and Feels for the DVT

You must create and implement a Look and Feel injector for each custom Look and Feel that you want to use with the DVT. To implement a Look and Feel for the DVT, you must:

1. Create a Look and Feel injector for your custom Look and Feel. For details, see [Chapter 9.3.10.1, "Creating a Look and Feel Injector."](#)
2. Instantiate the Look and Feel injector that you created. For details, see [Chapter 9.3.10.2, "Instantiating a Look and Feel Injector."](#)

9.3.10.1 Creating a Look and Feel Injector

To create a Look and Feel injector, you can perform either of the following:

- If your custom Look and Feel has major differences from the delivered Bighorn Look and Feels, you can extend the `com.bea.wlp.dvt.injector.<LookAndFeelInjector>` class, replacing the `<LookAndFeelInjector>` class name with the class name of your custom Look and Feel.
- If your custom Look and Feel has only minor differences from the delivered Bighorn Look and Feels, you can extend and override any of the methods in the code below, replacing the `<BighornInjector>` class name with the class name of your custom Look and Feel.

[Example 9–1](#) lists the code that you edit to create a Look and Feel injector. You can save this file in the Merged Project Content folder under `<webapp_name>/Merged Project Content/dvt` following standard class-naming conventions. For example, the class `com.bea.wlp.dvt.injector.MyLAFInjector` would be stored under `<webappName>/dvt/com/bea/wlp/dvt/injector/MyLAFInjector.js`.

Example 9–1 Sample Look and Feel Injector Class

```
wlp_dvt_dojo.declare(
    "com.bea.wlp.dvt.injector.<BighornInjector>",
    [com.bea.wlp.dvt.injector.<LookAndFeelInjector>],
    {
        /**
         * Adds a customize link to the primary book
         * @param discBook The primary book from the DISC api
         */
        injectCustomizeLinkForPrimaryBook: function(discBook)
        {
        },
    },
    /**
```

```

    * Adds a Customize link to a book in a book.
    * @param diskBook The book from DISC
    */
injectCustomizeLinkForBookNavigable: function(discBook)
{
},

/**
 * Adds a Customize link to a page in a book.
 * @param diskPage The page from DISC
 */
injectCustomizeLinkForPageNavigable: function(discPage)
{
},

/**
 * Add a Customize link to a book on a page.
 * @param discBook The book from DISC.
 */
injectCustomizeLinkForBookPlaceable: function(discBook)
{
},

/**
 * Add a Customize link to a portlet on a page.
 * @param discPortlet The portlet from DISC.
 */
injectCustomizeLinkForPortletPlaceable: function(discPortlet)
{
},

/**
 * Method used to inject a new tab/navigable into a book menu.
 * @param bookItem The book that will contain the tab/navigable.
 * @param newTitle The title of the new tab navigable.
 * @param append True indicating the new tab will appear as the last
 * element in the book menu.
 */
injectNewNavigableTab: function(bookItem, newTitle, append)
{
}
}
);

```

9.3.10.2 Instantiating a Look and Feel Injector

After you have created a Look and Feel injector for your custom Look and Feel, you must instantiate it. To instantiate a Look and Feel injector:

1. In Oracle Enterprise Pack for Eclipse, click the Merged Projects tab.
2. Navigate to the `config.js` file, located in the `dvt` folder of your web project.
3. Right-click the `config.js` file, then choose **Copy to Project**.
4. Right-click the `config.js` file, then choose **Open**.
5. In the code for the `config.js` file, scroll down to the `lafInjector` function.
6. Add the class that you edited in [Chapter 9.3.10.1, "Creating a Look and Feel Injector"](#) to the `lafInjector`, using the following code as a guide:

```
afInjector: function()
```

```

{
  if(typeof lafInjectorInstance == 'undefined')
  {
    wlp_dvt_dojo.require("com.YourInjectorClass");
    lafInjectorInstance = new com.YourInjectorClass();
  }
  return lafInjectorInstance;
}

```

9.4 Installing the Sample Login Shell

WLP provides an optionally installed sample login shell that is designed to provide the DVT's required login capability. This section explains how to install the sample login shell into an existing web application.

Note: The login shell is a sample only. It is provided to developers as a convenience only. It is not supported by Oracle. Oracle recommends that you provide your own login mechanism for production applications.

9.4.1 Summary of Steps

To add the sample login shell to a portal web application, you must perform these basic steps:

1. Add the Sample Framework Components facet to your portal web project.
2. Be sure the portals's **Enable Disc** property is set to `true`.
3. For the portal desktop, change the Shell property to **Login Shell**.

These steps are explained in the following sections. [Figure 9-4](#) shows part of a portal with the sample login shell enabled. Fields for entering username and password appear in the upper-right corner of the portal.

Figure 9-4 Sample Login Shell Enabled

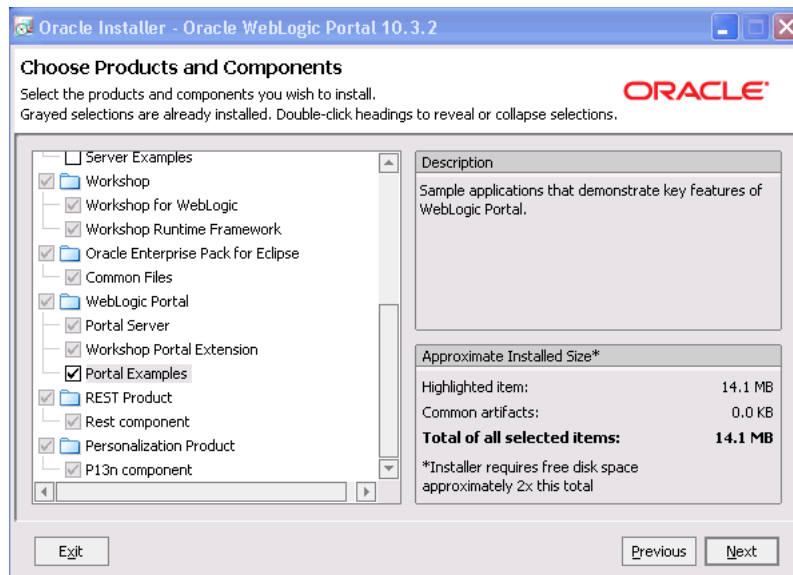


9.4.2 Installing the Portal Examples Component

To use the sample login shell, the Portal Examples component must be included in your portal installation. To add this component:

1. Start the Oracle Installer.
2. In the Choose Products and Components part of the installer wizard, select the **Portal Examples** component as shown in [Figure 9-5](#).

Note: If the Portal Examples checkbox is already selected, exit the wizard; no further action is required.

Figure 9–5 Installing the Portal Examples Component

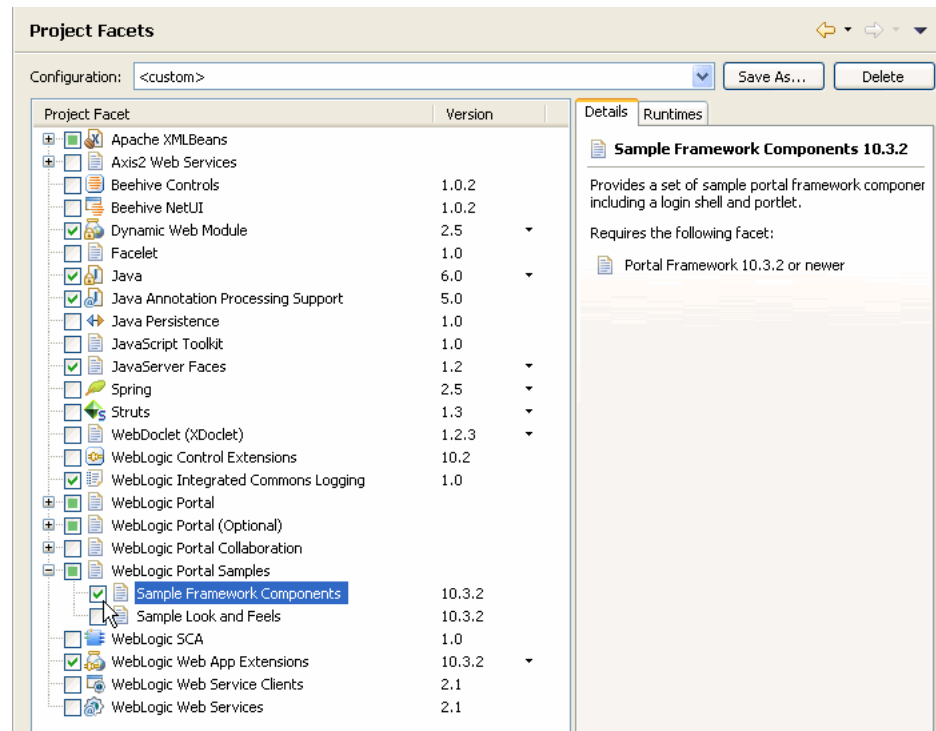
3. Complete the rest of the wizard steps to add the component to your portal installation.

9.4.3 Add the Sample Framework Components Facet

Follow the instructions in [Section 5.5, "Adding Facets to an Existing Project"](#) to add the **Sample Framework Components** facet to your portal web project. In the Project Facets dialog, open the Portal Samples node and be sure that the **Sample Framework Components** facet is selected. See [Figure 9–6](#).

After the facet is installed, redeploy your web application.

Figure 9–6 Project Facets Dialog



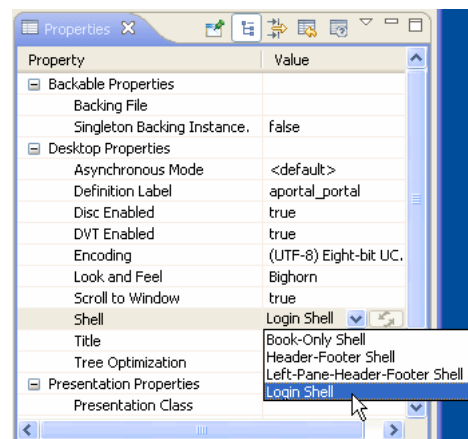
9.4.4 Adding the Sample Login Shell to a Portal Desktop

This section explains how to add the sample login shell to a desktop in Oracle Enterprise Pack for Eclipse and in the WebLogic Portal Administration Console.

To add the sample login shell to a portal desktop in Oracle Enterprise Pack for Eclipse:

1. Open the `.portal` file in the Portal Editor.
2. Click on the border of the portal in the editor to display the desktop's Properties View.
3. Under Desktop Properties, change the Shell property to **Login Shell**, as shown in Figure 9–7.

Figure 9–7 Adding the Sample Login Shell in the IDE

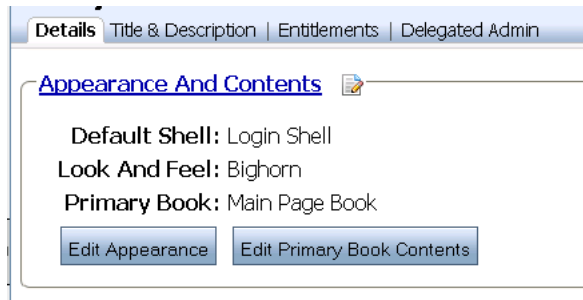


4. Be sure the Disc Enabled property is set to `true`.

To add the sample login shell to a portal desktop in the Administration Console:

1. Open the Desktop to which you want to add the sample login shell.
2. In the Appearance and Contents part of the Details tab, click **Edit Appearance**.
3. Select **Login Shell** from the Default Shell dropdown menu.
4. Click **Update**. The default shell is now set to Login Shell, as shown in [Figure 9–8](#).

Figure 9–8 *Default Shell Set to Login Shell*



5. In the Advanced Properties section, be sure the Disc Enabled property is set to `true`.

Advanced DVT Development

This chapter discusses how to localize, extend, and modify the Dynamic Visitor Tools (DVT).

Note: The information and examples in this section assume that you are familiar with both JavaScript and the Dojo toolkit. Dojo is used extensively in the DVT implementation.

This chapter includes the following sections:

- [Section 10.1, "Localizing the DVT"](#)
- [Section 10.2, "Extending the DVT with Mixins"](#)
- [Section 10.3, "Using the Server Data Store"](#)

10.1 Localizing the DVT

This section explains how to localize the out-of-the-box DVT components and how to localize any custom components that you develop (widgets, visual surfaces, alerts, and so on).

- [Section 10.1.1, "Overview"](#)
- [Section 10.1.2, "Localizing the Out-Of-The-Box DVT"](#)
- [Section 10.1.3, "Localizing Custom Widgets"](#)
- [Section 10.1.4, "Extending `_Localizable` to Customize L10N Features"](#)

10.1.1 Overview

The DVT uses resource bundles for localization. A resource bundle is a JavaScript object in JSON format that specifies properties and values, where the values are the strings to be localized. For example, the DVT bundle `Alert.js` looks like this:

```
{
  okBtnLabel: 'Ok',
  cancelBtnLabel: 'Cancel'
}
```

In this case, `OK` and `Cancel` are localizable strings. The property names (also called message keys) are used to reference these localizable values in JavaScript code. For more information, see [Section 10.1.3, "Localizing Custom Widgets."](#)

Resource bundles can also contain string templates that allow variable substitution. For example, the `pageSizeLabel` property shown below includes a variable `"${0}"`:

```
{
  selectTitle:"Change the number of items to view",
  pageSizeLabel:"Show ${0} Items"
}
```

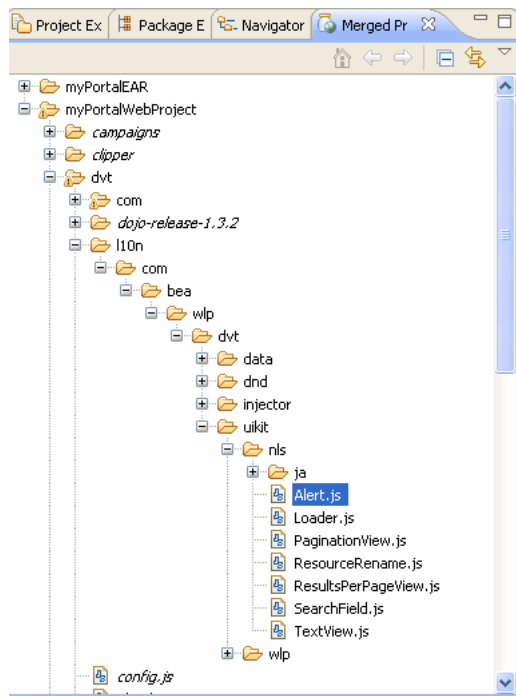
All resource bundles for the DVT are located here:

```
<web_project>/dvt/l10n/com/bea/wlp/dvt/uikit/nls
```

You create locale-specific folders under the `nls` folder. The locale-specific folder names follow a standard naming convention. They are lower case, and a hyphen separates the language code from the optional country code. For example, `en-us` is the code for United States English and `en-au` is the code for Australian English. [Figure 10–1](#) shows some of the DVT resource bundles under the `nls` folder in a web project. The `nls/ja` folder contains resource bundles localized for the Japanese language.

Tip: For more background information on the way locale-specific files are structured, see the Dojo Toolkit Documentation topic "Internationalization (i18n)."

Figure 10–1 DVT Resource Bundles



10.1.2 Localizing the Out-Of-The-Box DVT

If you wish to localize the DVT for a language that is not supported out-of-the-box, do the following:

1. Copy the `<web_project>/dvt/l10n/com/bea/wlp/dvt/uikit/nls` folder to your project. To do this, right-click the folder and select **Copy to Project**.
2. Create the appropriately named locale-specific folder under the `nls` folder.

3. Copy the resource bundles from one of the existing locale folders to the new folder.
4. Translate the resource bundles.

10.1.3 Localizing Custom Widgets

This section explains how to localize custom widgets that you write for the DVT. All classes that require localized strings must include the `_Localizable` base class. This class provides a set of localization methods that:

- Register localization modules
- Load message bundles
- Perform string substitutions

To add `_Localizable` to a class, use the `dojo.declare` statement in the class that you wish to localize. For example:

```
wlp_dvt_dojo.declare(
    "com.bea.wlp.dvt.uikit.Alert",
    [com.bea.wlp.dvt.uikit.UIKitWidget, com.bea.wlp.dvt.util._Localizable],
    {
    ....
    }
```

This statement includes `_Localizable` as a "mixin," making its methods available to the `Alert` class. For more information on mixins, see [Section 10.2, "Extending the DVT with Mixins."](#)

When using the `_Localizable` class, note the following conventions:

- The message bundle for a widget must be located under the `<web_project>/dvt/l10n` folder, in a directory structure patterned after the package of the class. For example, the message bundle for the class `com.foo.Bar.js` must be placed in: `<web_project>/dvt/l10n/com/foo/nls/Bar.js`.
- Within a widget class (or its template), reference message bundles with an alias called `messages`. For example, for the following message bundle, the expression `${messages.selectTitle}` returns the string "Change the number of results per page."

```
{
    selectTitle:"Change the number of results per page.",
    search:"Enter a '${0}' search query."
}
```

For information on customizing the message alias, see [Section 10.1.4.2, "Customizing Message Aliases."](#)

10.1.4 Extending `_Localizable` to Customize L10N Features

Extend `_Localizable` if you want to customize how L10N modules are loaded and customize the message alias described previously in [Section 10.1.3, "Localizing Custom Widgets."](#)

10.1.4.1 Customizing How L10N Modules Are Loaded

DVT localization resource bundles are located by default in `<web_project>/dvt/l10n`. You can specify a different location by specifying a value for the `l10nModules` property. You can do this either in the `_Localizable` constructor

or by setting the `l10nModules` property at the class level, before the constructor. The `_Localizable` constructor takes this form:

```
constructor: function(args, node) {
}
```

The `args` parameter is an array, and it can take two optional elements, `l10nModules` and/or `messagePropertyAliases` (described in the next section). The `l10nModules` property takes the form of an array of objects. For example:

```
args[l10nModules] = [{module: "module1", prefix: "path/to/module1"},
  {module: "module2", prefix: "path/to/module2"},
  ...]
```

This form specifies the path where the resource bundles for each specified module are located. Note that the value of `prefix` is a path relative to the web application root. You can also specify this property as a property of the widget (before the constructor) like this:

```
l10nModules: [{module: "module1", prefix: "path/to/module1"},
  {module: "module2", prefix: "path/to/module2"},
  ...]
```

Using the `l10nModules` property also helps optimize the loading of modules. If a module with a given prefix is already loaded and a request to load it against a different module name is encountered, the DVT localization framework avoids resending a request for the JavaScript bundle file.

10.1.4.2 Customizing Message Aliases

You can change the default value of the `messages` alias. The `messages` alias lets you reference resource bundle properties conveniently from within a widget, as explained in [Section 10.1.3, "Localizing Custom Widgets."](#) You have two options for customizing the message alias. First, you can simply replace the alias with a new name. This option is useful if your widget already contains a variable called `messages`. In this case, the alias refers to the existing default location of the message bundles. For example:

```
messagePropertyAliases = "myMessageAlias"
```

You can also specify an object array of this form:

```
messagePropertyAliases: [{alias: "msg1", path: "path.to.bundle1", file:"bundle1"},
  {alias: "msg2", path: "path.to.bundle2", file:"bundle2"},
  ...]
```

For a more complete example, see [Section 10.1.4.3, "Handling Parameterized Messages."](#)

The object array form lets you specify multiple aliases referring to multiple different resource bundle files. This option lets you avoid duplicating message bundle files and use existing message bundle files without creating new ones.

10.1.4.3 Handling Parameterized Messages

To use parameterized messages in a widget template, you must override the `postMixinProperties()` method of `_Localizable` and substitute placeholders with values.

For example, suppose the `com.bea.wlp.dvt.uikit.SearchField` widget only needs one localized message and you do not want to define a new message bundle file for that purpose. Instead, the widget can reuse the message bundle file defined for

`com.bea.wlp.dvt.uikit.ResultsPerPageView`. Furthermore, suppose that the message needs to be parameterized. The following code fragments illustrate how to accomplish this customization:

Here are contents of the SearchField template file

(`/dvt/com/bea/wlp/dvt/uikit/SearchField.html`). Notice that the message alias is "msg" and not the default "messages." The technique for changing the default is demonstrated in the `SearchField.js` file, shown below.

```
<div class="com_bea_wlp_dvt_uikit_searchBox">
  <input type="text" name="search" title="{msg.search}"/>
</div>
```

The `ResourcePerPageView` resource bundle at

`/dvt/l10n/com/bea/wlp/dvt/uikit/nls/ResultsPerPageView.js`.

```
{
  selectTitle:"Change the number of results per page.",
  search:"Enter a '{0}' search query."
}
```

The SearchField widget JavaScript file at

`/dvt/com/bea/wlp/dvt/uikit/SearchField.js`. Note that this is where the default message property alias is changed from `messages` to `msg`.

```
wlp_dvt_dojo.declare
(
  "com.bea.wlp.dvt.uikit.SearchField",
  [com.bea.wlp.dvt.util._Localizable, dijit._Templated],
  {...
  constructor: function(args, node)
  {
    // reset messagePropertyAliases
    args[messagePropertyAliases] =
      [{alias: "msg", path:"dvt.l10n.com.bea.wlp.dvt.uikit",
        file:"ResultsPerPageView"}];
  }...
}
```

And the `SearchField.postMixinProperties()` method:

```
postMixinProperties: function() {
  this.inherited(arguments); // Required: the parent function does a lot of the set up work
  this.msg.search = com.bea.wlp.dvt.util.L10nHelper.substitute(this.msg.search, ["contains"]);
}
```

The result of this customization is that the SearchField "reuses" a message bundle from another module. In this example, the resulting message is: "Enter a contains search query."

The `L10nHelper.substitute()` method substitutes placeholders specified in resource bundle messages with values specified in an array. This helper class is located in `<web_project>/dvt/com/bea/wlp/dvt/util`.

10.2 Extending the DVT with Mixins

You can add functionality to any DVT class by implementing and configuring mixin classes. Mixins provide a way to extend the basic functionality of the DVT without opening and modifying the JavaScript source code provided by WLP. This section includes these topics:

- [Section 10.2.1, "What are Extensions?"](#)

- [Section 10.2.2, "How Mixins are Implemented"](#)
- [Section 10.2.3, "Enabling Mixins"](#)
- [Section 10.2.4, "Mixin Examples"](#)

10.2.1 What are Extensions?

The mixin mechanism is implemented as a DVT extension. Extensions execute arbitrary JavaScript code either before or after specified DVT classes are declared. You enable and specify extensions in the `<web_project>/dvt/config.js` file. The basic form of an extension, as specified in `config.js`, is:

```
extension: {
  dvtContentIncludes: [
    {
      pkg: " " /* A package or class name*/ ,
      pre: {
        ext: " " /* Execute some JavaScript code before pkg classes are
          declared */ },
      post: {
        ext: " " /* Execute some JavaScript code after pkg classes are
          declared. */}
      }
    }
  ],
  dvtContentExcludes: [ " /* Exclude these classes from pkg. */ " ]
},
```

The extension object specifies which packages or classes to apply the extension to (`dvtContentIncludes`) and which to exclude (`dvtContentExcludes`). For example, you can choose to apply an extension to all the classes in a given module, but exclude one or more of them. Therefore, the extension code only applies to the included classes.

The `ext` property is a string consisting of JavaScript code. This code only has access to global objects and objects defined within the scope of the code. For example, code specified in the `pre` block can only access global variables. Code running in the `post` block can access to the same variables that the `pre` block code can access, plus the newly initialized object specified with the `pkg` property.

Both the `pre` and `post` code blocks also can access a global object `com.bea.wlp.dvt.util._ext`. This object is populated with a copy of all of the properties in the `pre` and `post` block objects and the following properties:

- `module` – In the case of the `pre` block, the name of the module that is about to be initialized. In the case of the `post` block, the name of the module just initialized.
- `moduleObj` – The initialized module object. This property only applies to the `post` block.

Example 10–1 displays an alert with the name of the module that was just loaded. The alert appears after each DVT class is declared, except the `com.bea.wlp.dvt.util.Util` class.

Example 10–1 DVT Extension Example

```
extension: {
  enabled: true,
  dvtContentIncludes: [
    {
```

```

    pkg:"com.bea.wlp.dvt",
    post: {
        ext:"alert(com.bea.wlp.dvt.util._ext.post.module);"
    }
}],
dvtContentExcludes: ["com.bea.wlp.dvt.util.Util"]
}

```

As mentioned previously, this extension mechanism is used by the DVT to implement the mixin feature. The next section discusses this implementation in more detail.

10.2.2 How Mixins are Implemented

Mixins are implemented as an extension. The mixin extension is defined by default in the `<web_project>/dvt/config.js` file. [Example 10-2](#) shows the mixin extension implementation. This implementation makes a request for a `<modulename>Mixin` module and extends the current module with code in `<modulename>Mixin`. Note that the mixin extension applies to all DVT modules after they are declared, except `com.bea.wlp.dvt.Util`, which is excluded.

Tip: The `dojo.extend()` method is used to perform the extension. For more information, refer to Dojo toolkit documentation on this method.

Example 10-2 The Mixin Extension

```

extension: {
    // true or false to enable or disable the extension mechanism
    enabled: true,

    dvtContentIncludes: [
        {
            pkg:"com.bea.wlp.dvt",
            post: {
                ext:"try{ "+
                    "wlp_dvt_dojo.require(com.bea.wlp.dvt.util._ext.module+\\"Mixin\\", true); "+
                    "var mixinObj =
                    wlp_dvt_dojo.getObject(com.bea.wlp.dvt.util._ext.module+\\"Mixin\\"); "+
                    "if(mixinObj) { "+
                    "if(com.bea.wlp.dvt.util._ext.post &&
                    com.bea.wlp.dvt.util._ext.post.keepOldProps) { "+
                    "var thisModule =
                    wlp_dvt_dojo.getObject(com.bea.wlp.dvt.util._ext.module); "+
                    "for( prop in mixinObj) { "+
                    "if(thisModule.prototype[prop]) { "+
                    "if(!thisModule.prototype.getExtender) { "+
                    "thisModule.prototype.getExtender = function() { "+
                    "if(!this._wlpInherited) { this._wlpInherited = {}; };
                    return this._wlpInherited; "+
                    "}; "+
                    " } "+
                    " if(!thisModule.prototype._wlpInherited) { "+
                    " thisModule.prototype._wlpInherited = {}; } "+
                    "thisModule.prototype._wlpInherited[prop] =
                    thisModule.prototype[prop]; "+
                    "}}; "+
                    "thisModule = wlp_dvt_dojo.extend(thisModule, mixinObj); "+
                    "}catch(e){console.error(e);}",
                keepOldProps: true
            }
        }
    ]
}

```

```

        }
    },
    ],
    dvtContentExcludes: ["com.bea.wlp.dvt.util.Util"]
},

```

Place your mixin modules (for example, `<modulename>Mixin`) in the web application in the same directory as the module you wish to extend. See [Section 10.2.4, "Mixin Examples"](#) for more information.

The Mixin extension also defines a property `keepOldProps` on the post object. If this property is set to true (the default), properties in the module being extended that might be overwritten as a result of the extension process are preserved. You can access these preserved properties using `this.getExtendee().<propertyName>`.

In summary, if Mixins are enabled, the DVT will request a `<modulename>Mixin` class when loading the `<modulename>` class, and extend `<modulename>` class with the code in the Mixin class. For example, if a class `com.bea.wlp.dvt.uikit.UIKitWidgetMixin` exists, it will be requested when `com.bea.wlp.dvt.uikit.UIKitWidget` is loaded.

10.2.3 Enabling Mixins

To enable the mixin feature, you must first enable the extension feature. By default, the extension mechanism is disabled.

1. In Oracle Enterprise Pack for Eclipse, open the Merged Projects view.
2. Navigate to `<web_project>/dvt`.
3. Right-click the file `config.js` and select **Copy to Project**.
4. Open `config.js` in the editor.
5. Locate the extension object and set the `enabled` property to `true`.

10.2.4 Mixin Examples

[Example 10-3](#) illustrates a mixin class, `PortletItemMixin`, that adds `"_MP"` to every portlet item's title by overriding the `PortletItem._getItemArray()` method.

Note: Before you can use mixins, you must enable the extension feature. See [Section 10.2.3, "Enabling Mixins."](#)

You can test this mixin example by creating this file with the code in [Example 10-3](#):

```
<web_app>/WebContent/dvt/com/bea/wlp/dvt/data/item/PortletItemMixin.js
```

Note: In practice, WLP only supports reading data from the server, not writing. For instance, WLP supports `dojo.data.api.Read`, but not `dojo.data.api.Write`. [Example 10-3](#) illustrates how data that from the server's perspective is read-only can be changed on the client before display.

Example 10–3 Example Mixin Class

```
wlp_dvt_dojo.setObject("com.bea.wlp.dvt.data.item.PortletItemMixin", {
  _getItemArray: function(rawItemArray) {
    if(wlp_dvt_dojo.isArray(rawItemArray)) {
      var i;
      var itemArray = [];
      for(i=0;i<rawItemArray.length;i++) {
        itemArray[i] = new com.bea.wlp.dvt.data.item.PortletItem(rawItemArray[i]);
        itemArray[i].title[0] = itemArray[i].title[0] + "_MP";
      }
      return itemArray;
    } else {
      throw new Error("_getItemArray expects an array of raw items.");
    }
  }
});
```

[Example 10–4](#) illustrates a mixin class that prints a console warning and calls the `hitchDvtToLaf()` method in `com.bea.wlp.dvt.injector.BighornInjector`. Note the use of `this.getExtendeer()` to access overwritten properties of the extended module. You can access the extended module in the extension `ext` property using `com.bea.wlp.dvt.util._ext.post.moduleObj`, as explained in [Section 10.2.2, "How Mixins are Implemented."](#)

Example 10–4 Example Mixin Class

```
wlp_dvt_dojo.setObject("com.bea.wlp.dvt.injector.BighornInjectorMixin", {
  hitchDvtToLaf: function() {
    console.warn("In BighornInjectorMixin")
    this.getExtendeer().hitchDvtToLaf.call(this);
  }
});
```

10.3 Using the Server Data Store

The DVT includes an API for locating and reading data from a data source. This API conforms to the `dojo.data.api.Read` and `dojo.data.api.Identity` APIs. A data source can be any source of raw data. For example, a data source could be a file, such as a CSV file, a database, or a web service. This section includes these topics:

- [Section 10.3.1, "Server Data Store Features"](#)
- [Section 10.3.2, "Using Server Data Store: A Basic Example"](#)
- [Section 10.3.3, "The Server Data Store Constructor"](#)
- [Section 10.3.4, "Request Object Parameters"](#)
- [Section 10.3.5, "Server Data Store Examples"](#)

10.3.1 Server Data Store Features

This section lists the basic features of the DVT Server Data Store:

- Fetches data from any server that supports HTTP.
- Operates in any web container in which Dojo is installed.
- Fetches data in any data format. You can add support for JSON or other data formats using pluggable data format handlers.

- Fetches data with any structure through pluggable data type handlers. You can add data type support either at creation or runtime through a registration API. New data types must conform to the `com.bea.wlp.dvt.data.item.Item` API. Default support is provided for common WLP types, like portlets, remote portlets, books, pages, desktops, layouts, look and feels, menus, shells, and themes.
- Supports pagination and sorting whether on the server or on the client.
- Supports search and filtering.
- Supports customization either through creation in JavaScript code or through HTML using the Dojo parser.
- Can be used with other Dojo UI widgets to display data.

10.3.2 Using Server Data Store: A Basic Example

This section presents a basic example that demonstrates how to instantiate and use a `ServerDataStore` object. The code in [Example 10–5](#) creates an instance of `ServerDataStore` with a URL parameter specifying the location from which to retrieve the data. For more information on the constructor, see [Section 10.3.3, "The Server Data Store Constructor."](#)

The `fetch()` method takes a "request" object that encapsulates the function's parameters. (See [Section 10.3.4, "Request Object Parameters"](#) for more information.) First, the `query` parameter specifies the webapp that contains the data. The `queryOptions` parameter specifies parameters that filter the query. In this case, `queryOptions` specifies filtering for the title and description attributes of the data. The filtering occurs on the server, because client side filtering is turned off by default. Filtering can only be performed on one parameter per request. In this example, filtering will only be performed on the title attribute. The `count` parameter sets the page size of the returned data to 2. The `onComplete` parameter is a function that is called when all data items on the page are loaded. In this case, `onComplete` displays the portlet title and its identity on the page.

Example 10–5 Server Data Store Example in JavaScript

```
var serverDataStore = new com.bea.wlp.dvt.data.stores.ServerDataStore({
    url: "http://localhost:7001/portal_1/bea/wlp/api/portlet/list"
});
serverDataStore.fetch({
    query: {webapp: "portal_1"},
    queryOptions: {title: "*C*", description: "*c*", ignoreCase: true},
    count: 2,
    onComplete: function(/*Item array*/items, /*Object*/request) {
        var dataDiv = "<div id=\"dataDivPortlet\">";
        //console.log("In test.jsp onComplete items.length " + items.length);
        dataDiv += "<p><b>Portlets</b></p>";
        for(var i=0;i<items.length;i++) {
            dataDiv += serverDataStore.getValue(items[i], "title") +
                "<span style=\"font-size:.8em;color:red\">
                (Identity: " + serverDataStore.getIdentity(items[i]) + "</span>";
        }
        dataDiv += "</div>";
        wlp_dvt_dojo.byId('storePortletData').innerHTML = dataDiv;
    }
});
```


10.3.3 The Server Data Store Constructor

This section describes properties of an object that you can pass to the `ServerDataStore` constructor to customize the server data store's behavior.

- **url** – (string) Specifies the server URL from which to retrieve the data.
- **clientSidePaging** – (boolean) Denotes whether to page data on the server or on the client. If `false`, every call to the `next` and `previous` functions causes a request to be sent to the server URL, configured with the appropriate page number and page size values. If `true`, the data is fetched only once from the server, and calls to the `next` and `previous` functions page over the data set that resides in memory on the client.
- **itemType** – (object) Optional object that specifies the data type. This specified type overrides any built-in types. `ServerDataStore` tries to create items of this specified type. The type must support methods defined in `com.bea.wlp.dvt.data.item.Item`. Declare the type using `dojo.declare` with a constructor function.
- **dataFormatHandler** – (function) Optional function that handles a given data format with the specified item type of that format. Defaults to a JSON data handler. This function must always return a JSON representation of the data, whatever the input format is.
- **comparatorMap** – For details on this optional parameter, see documentation for `dojo.data.util.sorter`. This parameter only works on the client side. If `clientSidePaging` is set to `false`, sorting occurs only on the current page of data.

10.3.4 Request Object Parameters

The `ServerDataStore.fetch()` method takes a "request" object that includes the following required and optional parameters:

- **query** – Specifies attributes that qualify a fetch request. This parameter can contain the following attributes:
 - **webapp** – (string) The web application from which to retrieve the data.
 - **locale** – (string) Any string that is supported by a registered `dataFormatHandler`. Defaults to JSON format.
- **queryOptions** – Optional parameter that specifies options that modify the query. Currently, this parameter only supports filtering parameters. If you use the WLP REST API to construct the URL end point for the data store, and server-side filtering is enabled, this parameter takes the following options:
 - **title** – (string)
 - **description** (string)
 - **ignoreCase** (boolean)

If both the title and description are specified, title takes precedence. This is because filtering is currently supported for one attribute per request.

If client-side filtering is enabled (setting `clientSideFiltering` to `true` in the `ServerDataStore` constructor), `queryOptions` can be used to filter any property that the data items contain.

- **onBegin** – Specifies a callback function(`size`, `request`). If an `onBegin` function is provided, the callback is only called once, before the first `onItem` callback is called. The functions parameters are the total number of items identified and the Request object. If the total number is unknown, the size is `-1`. The size is not

necessarily the size of the collection of items returned from the query, because the request might only return a subset of the total set of items with the use of the start and count parameters.

- **onItem** – Specifies a callback function(item, request). If specified, the onItem callback function is called as each item in the result is received. The parameters include the item itself and the Request object.
- **onComplete** – Specifies a callback function(items, request). If provided, the onComplete callback function is called once, after the last onItem callback is called. Note that if the onItem callback is not present, then onComplete is passed an array containing all items that matched the query and the Request object. If the onItem callback is present, then onComplete is called as: function(null, request).
- **onError** – Specifies a callback function(errorData, request). This function is called if an error occurs during the query execution. The onError callback function takes two arguments, an error object and a Request object.
- **scope** – If a scope object is provided, all callback functions (onItem, onComplete, onError, and so on) are invoked in the context of the scope object. In the body of the callback function, the value of the "this" keyword is the scope object. If no scope object is provided, the callback functions are called in the context of the dojo.global(). For example:

```
onItem.call(scope, item, request)
```

or

```
onItem.call(dojo.global(), item, request)
```

- **start** – (integer) Specifies a number of items in the data store to skip over. If the count parameter is also specified, the data store pages across queries by only returning subsets of the hits for each query.
- **count** – (integer) Specifies the number of items to be returned from the data store. This parameter overrides the value of the pageSize parameter.
- **sort** – Specifies how to sort the items before they are returned. This parameter specifies an array of JavaScript objects that must conform to the following format:

```
{  
  attribute: attribute || attribute-name-string,  
  descending: true|false; // Optional. Default is false.  
}
```

Note: When comparing attributes, if an item contains no value for the attribute (undefined), then the default ascending sort logic pushes it to the bottom of the list. In the descending order case, such items must appear at the top of the list. The sort parameter can also be a sort function. In this case, the sort function is called. The sort function accepts requestArgs and a list of items, and it returns a sorted list based on some criteria. The function is executed in the context of the data store object.

10.3.5 Server Data Store Examples

[Example 10-6](#) illustrates how to customize the data type that the data store handles. In this example, the itemType attribute is specified in the ServerDataStore constructor. The code for the tests.MyPortletItem class is shown in [Example 10-7](#).

Example 10–6 Server Data Store Example with itemType Specified

```

var serverDataStorePortletExt = new com.bea.wlp.dvt.data.stores.ServerDataStore({
    url: "http://localhost:7001/portal_1/bea/wlp/api/portlet/list",
    itemType: "tests.MyPortletItem"
});

serverDataStorePortletExt.fetch({query: {webapp: "portal_1"}, count: 5,
    onComplete: function(/*Item array*/items, /*Object*/request) {
        var dataDiv = "<div id=\"dataDivPortletExt\">";
        dataDiv += "<p><b>PortletsExt</b></p>";
        for(var i=0;i<items.length;i++) {
            dataDiv += serverDataStorePortletExt.getValue(items[i], "title") + "<br>";
        }
        dataDiv += "</div>";
        wlp_dvt_dojo.byId('storePortletDataExt').innerHTML = dataDiv;
    }
});

```

Example 10–7 MyPortletItem Class

```

wlp_dvt_dojo.provide("tests.MyPortletItem");
wlp_dvt_dojo.require("com.bea.wlp.dvt.data.item.PortletItem");

wlp_dvt_dojo.declare("tests.MyPortletItem", com.bea.wlp.dvt.data.item.PortletItem, {
    _getItemArray: function(/*array of raw items*/rawItemArray) {
        // summary:
        // Given an array of raw items, creates typed objects
        // This method is item type specific
        if(wlp_dvt_dojo.isArray(rawItemArray)) {
            // create typed PortletItem objects
            var i;
            var itemArray = [];
            for(i=0;i<rawItemArray.length;i++) {
                itemArray[i] = new tests.MyPortletItem(rawItemArray[i]);
                itemArray[i].title[0] = itemArray[i].title + "_MP";
            }
            return itemArray;
        } else {
            throw new Error("_getItemArray expects an array of raw items.");
        }
    }
});

```

The code in [Example 10–7](#) extends the `PortletItem` class. By doing so, the class conforms to the `com.bea.wlp.dvt.data.item.Item` API. This class simply adds the string `"_MP"` to the end of the title of each portlet.

Instead of changing the data type that the data store expects, you can add a data type to the built-in list of data types that the data store can access by using the function:

```
registerTypes: function(/*array* types)
```

The `types` argument is an array of fully qualified type names that must conform to the `com.bea.wlp.dvt.data.item.Item` API.

[Example 10–8](#) illustrates how to use a mixin with the pluggable data format handler feature of the data store. This example sets up a data store that consumes data in XML format. This data store consumes look and feel data items that are retrieved in XML. This code sets up a data store with a `dataFormat` handler that handles XML data.

Example 10–8 Using a Mixin with a Data Format Handler

```

var serverDataStore = new com.bea.wlp.dvt.data.stores.ServerDataStore({
  url: "http://localhost:7001/portal_1/bea/wlp/api/lookandfeel/list",
  dataFormatHandler: function(data, format) {
    if(!data) {
      return null;
    }

    if(/xml/i.test(format)) {
      var json = com.bea.wlp.dvt.util.xmlobjectifier().xmlToJSON(data);
      return json;
    }

    console.error(this.substitute(this.messages.unsupportedDataFormat, ["xml", format]));
    return null;
  }
});

```

The mixin used in [Example 10–8](#) sets up a look and feel data item that can handle XML data. [Example 10–9](#) lists the code for the LAFItemMixin class. The ability to handle XML is provided by overriding the `isSupported()` and `getRawItemArray()` functions.

Example 10–9

```

wlp_dvt_dojo.setObject("com.bea.wlp.dvt.data.item.LAFItemMixin", {
  isSupported : function(/*Object*/data, format) {
    if(format == "xml") {
      if(data && data.lookandfeels) {
        if(data.lookandfeels.length > 0 &&
          data.lookandfeels[0].lookandfeel_details &&
          data.lookandfeels[0].lookandfeel_details.length > 0) {
          return {isSupported: true, isEmptyData: false};
        } else {
          return {isSupported: true, isEmptyData: true};
        }
      } else {
        return {isSupported: false, isEmptyData: true};
      }
    } else {
      return {isSupported: false, isEmptyData: true};
    }
  },
  _getRawItemArray : function(/*Object*/data, format) {

    // This method is item type specific
    // Each item type knows the structure of data it handles
    // and after parsing out any top level objects, returns the
    // raw array of items
    if(!data) {
      throw Error(messages.invalidDataItem);
    }
    if(/xml/i.test(format)) {
      return null;
    }
    var arr = data.lookandfeels[0].lookandfeel_details;
    // message data to remove unwanted attributes
    var returnArray = [];
    for(var i=0;i<arr.length;i++) {
      returnArray[i] = { label: arr[i].markup_name[0].Text,
        title: arr[i].title[0].Text, description: arr[i].description[0].Text,

```

```
        created_date: arr[i].created_date[0].Text, modified_date: arr[i].modified_date[0].Text
    };
}
return returnArray;
});
```

Enabling Visitor Tools

Visitor Tools allow individual portal users to customize the makeup and appearance of their portal desktop to create a more personalized portal experience. This chapter explains how to enable Visitor Tools.

Note: Oracle Oracle WebLogic Portal includes two features that, when enabled, let your users customize portals.

The Visitor Tools feature -- described in this chapter -- does not utilize Oracle Oracle WebLogic Portal's Web 2.0 functionality, such as Dynamic Interface Scripting (Disc) framework and a REpresentational State Transfer (REST) Framework.

The Dynamic Visitor Tools ("DVT") feature utilizes of Oracle Oracle WebLogic Portal's Web 2.0 functionality. We recommend that you use the DVT for all new Oracle Oracle WebLogic Portal applications. For details, see [Chapter 9, "Using the Dynamic Visitor Tools."](#)

Note: Visitor Tools require that the Apache Beehive facets are installed in the web application. For information on installing Apache Beehive facets, see "Apache Beehive and Apache Struts Supported Configurations" in the *Oracle Fusion Middleware Portal Development Guide for Oracle WebLogic Portal*.

This chapter includes these topics:

- [Section 11.1, "What Are Visitor Tools?"](#)
- [Section 11.2, "Enabling Visitor Tools"](#)

11.1 What Are Visitor Tools?

When enabled, Visitor Tools add features to portal desktops that allow portal visitors to modify the content and appearance of their desktops, books, and pages.

Changes made by a user through Visitor Tools are saved in the database and persist each time the user logs in to the portal. Visitor Tools provide a small subset of features that are available in the Portal Administration Console, such as changing the portal look & feel, adding and removing portlets, books, and pages, and others features.

Visitor Tools provide a Customize menu that portal visitors can use to access the customize their portal desktop.

11.2 Enabling Visitor Tools

Enabling Visitor Tools is a two-step process. First, you need to verify in Oracle Enterprise Pack for Eclipse that the proper facet is installed in the portal web project that contains the portal you wish to enable. Second, you need to create a properly configured desktop in the WebLogic Portal Administration Console based on the enabled `.portal` file.

This section includes these topics:

- [Section 11.2.1, "Verifying the Portal Visitor Tools Facet"](#)
- [Section 11.2.2, "Enabling Visitor Tools for a Desktop"](#)

11.2.1 Verifying the Portal Visitor Tools Facet

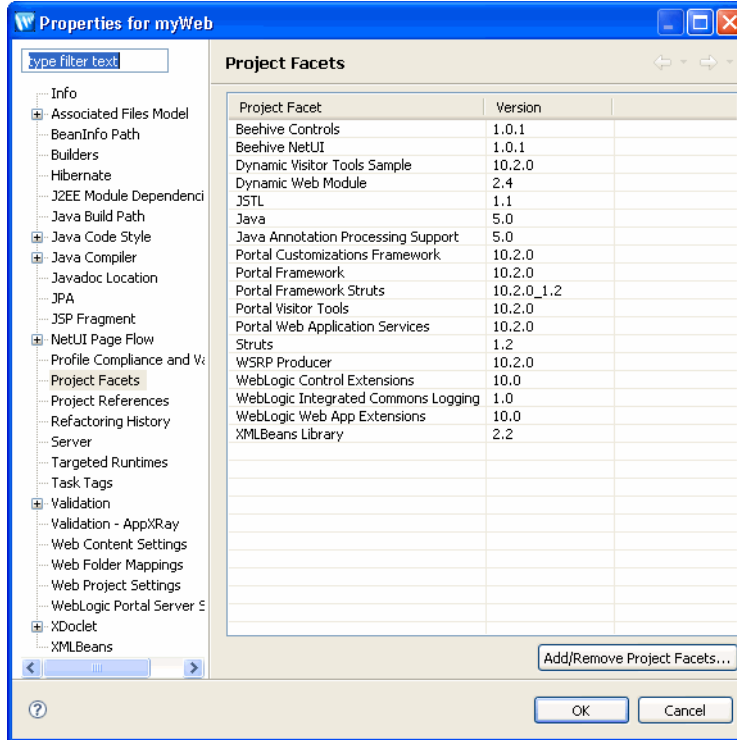
The deployed portal web project that contains the portal you wish to enable for Visitor Tools must include the Portal Visitor Tools facet. Although this facet is installed by default, this section explains how to verify that the facet is installed and how to add it if necessary.

1. Verify that the Visitor Tools project facet is installed in your portal web project.

To do this, right-click the portal web project, and select **Properties**. The Properties dialog appears (see [Figure 11–1](#)).

2. Choose **Project Facets** from the tree on the left side of the dialog and look for the library called **Portal Visitor Tools**.

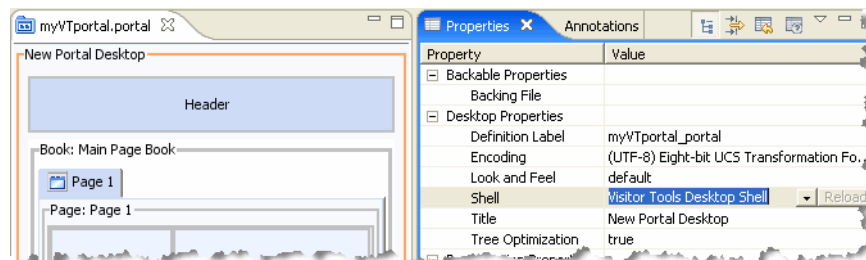
Figure 11–1 Project Facet List, Including Visitor Tools



If the facet is not in the list, add it by following the instructions in [Section 5.5, "Adding Facets to an Existing Project."](#)

- Optionally, you can enable the Visitor Tools Desktop Shell in Oracle Enterprise Pack for Eclipse. To do this, select the desktop and in the properties editor, select Visitor Tools Desktop Shell, as shown in [Figure 11–2](#). This step is optional, because you can also enable this shell in the Administration Console.

Figure 11–2 Select Desktop and Edit Shell Property



11.2.2 Enabling Visitor Tools for a Desktop

To take advantage of Visitor Tools, you must create a streaming portal desktop. This means that you must use the WebLogic Portal Administration Console to create a desktop and explicitly enable Visitor Tools for that desktop. For more information about streaming portals, refer to [Section 3.6, "File-Based Portals and Streaming Portals."](#)

Note: To use Visitor Tools, the portal desktop must be created from a template `.portal` file in a Portal Web Project that includes the Portal Visitor Tools facet. See [Section 11.2.1, "Verifying the Portal Visitor Tools Facet."](#)

Note: Visitor Tools do not appear on a user's desktop unless the user is authenticated; therefore, to use Visitor Tools, a portal must include some form of user authentication (for example, a login portlet). For more information about authentication, see the *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal*.

This section explains how to configure a streaming portal desktop that includes Visitor Tools. After the desktop is configured, users of the desktop can view and interact with the Visitor Tools.

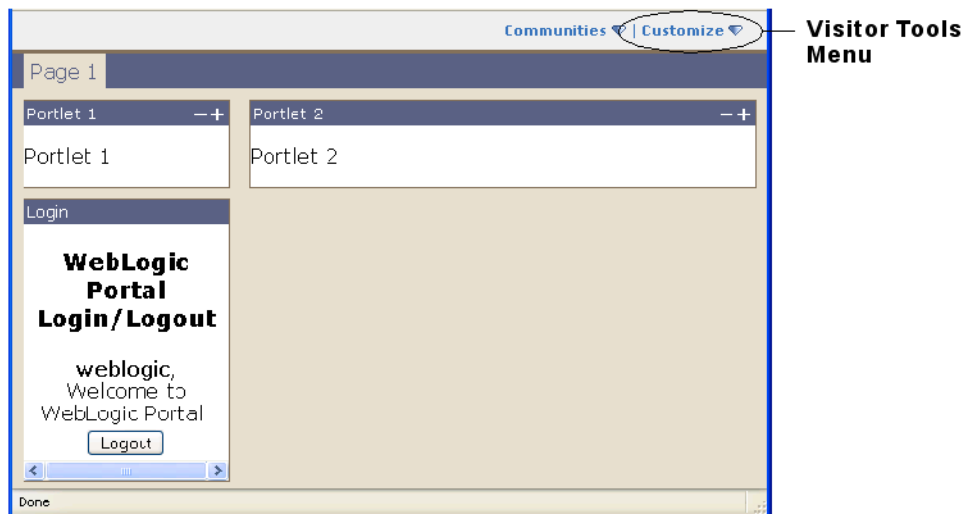
- Open the Administration Console. Typically, you do this in Oracle Enterprise Pack for Eclipse by selecting **Run > Open Portal Administration Console**.
- Log in to the Administration Console.
- Create a new desktop using the `.portal` file created previously as the basis for the new desktop, and select Visitor Tools Desktop Shell as the Default Shell for the desktop.

Note: For detailed instructions on creating a desktop, refer to [Section 15.12.1, "Creating a Desktop."](#)

To confirm that visitor tools are enabled:

1. From the Administration Console Portal Resources tree, select the new desktop, go to the Details tab, and click **View Desktop**.
2. When the desktop displays, log in and access the Visitor Tools using the Visitor Tools Customize menu, as shown in [Figure 11-3](#).

Figure 11-3 Visitor Tools Menu Enabled



Creating Portals for Multiple Device Types

Many types of web-enabled mobile devices can access your portals. Each type has unique requirements for the content that it can display.

With the multichannel framework provided in WebLogic Portal, you can extend your portals to include support for different mobile devices. This flexible framework lets you create a single portal that serves content to multiple web-capable devices seamlessly and simultaneously. You can also serve different content to different browsers, such as Mozilla Firefox, Netscape, and Internet Explorer.

When a device accesses a portal, the portal detects the device type and automatically serves the content you created for it within the assigned Look And Feel.

This chapter contains the following sections:

- [Section 12.1, "Enabling Multichannel Features in a Portal Web Application"](#)
- [Section 12.2, "Roadmap for Multichannel Processing"](#)
- [Section 12.3, "Developing Portals for Use in a Multichannel Environment"](#)

12.1 Enabling Multichannel Features in a Portal Web Application

When a device (whether a PC or a handheld) accesses a portal, it sends information about itself to the portal in the HTTP header, including the type of browser being used and the type of device. This combination of information defines a *client*, which is equivalent to the model of a device.

You define a client in the WebLogic Portal classifications configuration file using a *user agent* element. You can group several clients into a *classification*. For example, there are many models (client types) of Palm handheld devices, but they all fall under the classification of "Palm."

To enable the multichannel framework in your portal web project, you create an XML configuration file that maps clients to classifications. You must name the file `client-classifications.xml` and place it in the `WEB-INF` directory. You can create the XML file from within Oracle Enterprise Pack for Eclipse by selecting **File > New > Other > XML** and following the steps in the wizard.

For each client entry that maps to a classification, you can include either an explicit user agent string that maps exactly to what a device sends, or you can enter a regular expression that encompasses multiple user agent strings.

[Example 12-1](#) shows an example of a client classification mapping in `client-classifications.xml` using explicit mappings (with the `<useragent>` tag) and a regular expression mapping (with the `<useragent-regex>` tag).

Example 12–1 Example of a Client Classification Mapping in the client-classifications.xml File

```
<classification name="pocketpc" description="For the PocketPC">
  <useragent value="Mozilla/2.0 (compatible; MSIE 3.02; Windows CE; 240x320)"/>
  <useragent value="Mozilla/2.0 (compatible; MSIE 3.02; Windows CE; PPC;
240x320)"/>
  <useragent-regex value=".*PDA; Windows CE.*NetFront/3.*" priority="1"/>
</classification>
```

You can use an explicit `<useragent>` value for only one classification. If you use more than one `<useragent-regex>` tag to map with regular expressions, it is possible that a device accessing a portal could map to more than one classification. To determine which classification the device is mapped to, use the priority attribute, as shown in [Example 12–1](#). The value 1 is the highest priority. Enter any whole number for the priority value.

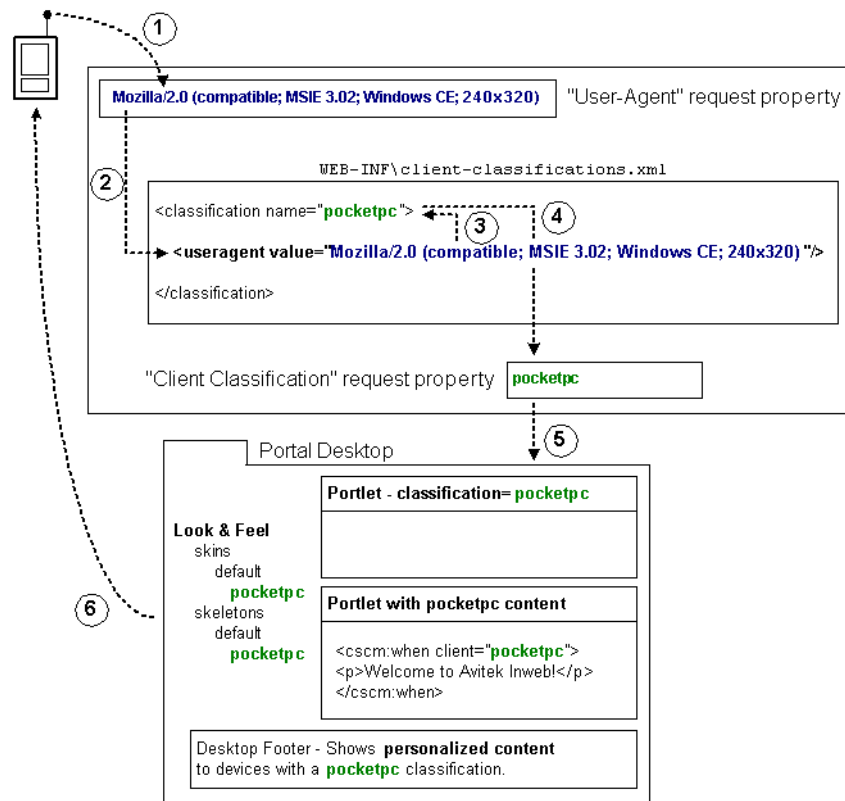
Note: For portlets that are assigned client classifications, the value you enter for the description element is displayed in the WebLogic Portal Administration Console to show the classifications to which the portlet is assigned. Make sure you create descriptions that are easily understood by portal administrators.

Based on the mappings you define in the `client-classifications.xml` file, the user agent value in the `<useragent>` property is mapped to the classification name you provide. The classification name in [Example 12–1](#) is `pocketpc`.

12.2 Roadmap for Multichannel Processing

[Figure 12–1](#) shows the sequence of multichannel framework processing that occurs when a device accesses a portal.

Figure 12-1 Multichannel Framework Processing Sequence



When a device accesses a portal-enabled server with a URL, the device sends a user agent string in the HTTP header to identify the client type. Because of the mappings you defined in the `client-classification.xml` file, the user agent string stored in the `<useragent>` property is mapped to the classification name you provided. As shown in Figure 12-1, the name is `pocketpc`.

The user agent request property is automatically included with any portal application that you create in Oracle Enterprise Pack for Eclipse. You can view this property by opening the following file in your Oracle Enterprise Pack for Eclipse workspace:

```
Portal_Web_Project\Data_Dir\src\request\DefaultRequestPropertySet.req
```

The portal uses that client classification name stored in the `DefaultRequestPropertySet.req` file throughout the portal framework to identify the content and presentation tailored to the device.

Based on the mapping you set up to match user agent strings in the HTTP request to classification names, the portal sends device-specific content and presentation to the different devices that access the portal.

12.3 Developing Portals for Use in a Multichannel Environment

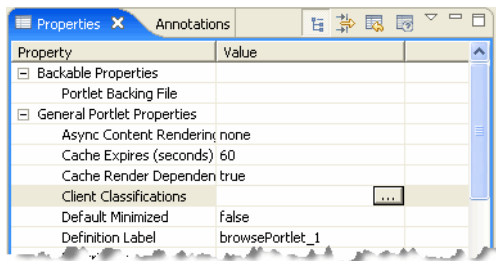
The following sections describe how to use the portal framework to create device-specific content and presentation.

12.3.1 Manage Portlet Client Classifications

When you create a portlet, you can assign the portlet to be used by different devices (client classifications). With the portlet open in the editor, go to the Properties view and perform the following steps:

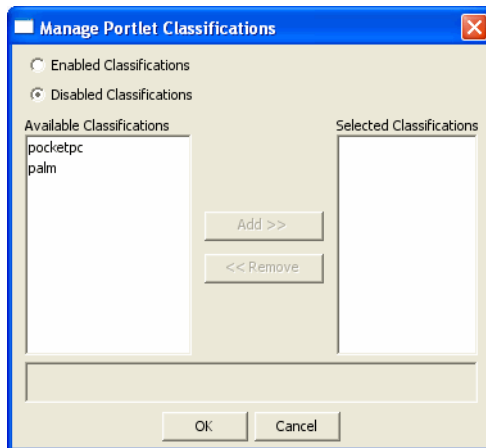
1. Click the ellipsis button in the **Client Classifications** field, as shown in [Figure 12-2](#).

Figure 12-2 Portlet Properties View Showing the Client Classifications Property



The Manage Portlet Classifications dialog displays. [Figure 12-3](#) shows an example:

Figure 12-3 Example of the Manage Portlet Classifications Dialog



Note: The client-classifications.xml file must already exist in the project's WEB-INF directory in order for this dialog to display.

2. In the Manage Portlet Classifications dialog, you select either to enable or to disable a subset of your client classifications; any classifications that you do not identify will automatically fall into the opposite category. Decide whether you want to *enable* a subset of your classifications and leave the remainder disabled, or *disable* a subset of classifications and leave the rest enabled.

The instructions for this step assume that you want to disable a subset of classifications and leave the rest enabled.

- a. Select the **Disabled Classifications** radio button to disable the portlet for any classifications.
- b. Use the **Add** button to move desired classifications into the **Selected Classifications** column.

By default, a classification is enabled unless you disable it.

- c. When you are finished, click **OK** to save your settings.

12.3.2 Use the Client Attribute in JSP Tags

WebLogic Portal includes JSP tags for creating device-specific inline content in JSPs. Only the content that meets the device criteria defined by the JSP tag is delivered to the device.

The relevant JSP tags have a required `client` attribute for mapping the JSP content to classifications. For the `client` value in the JSP tag, you must use the exact value that you used for the name in the `client-classifications.xml` file.

[Example 12-2](#) shows some possible uses of the client tag.

Example 12-2 Example JSP File Showing Possible Uses of the Client Tag

```
<%@ taglib uri="http://www.bea.com/servers/portal/tags/client/cscm" prefix="client" %>
<%@ taglib uri="http://www.bea.com/servers/portal/tags/netuix/render" prefix="render" %>
This is a sample of manipulating content using the client-classification tag library.
<p/>
<client:default>
  
</client:default>
```

Different versions of the same image will be selected based on the client classification. For the `"default"` client, a large image will appear. For the `"palm"` and `"pocketpc"`, a smaller version of the image will be used. For the `"nokia"` classification, a greyscale image will be used (purely as an example).

```
<p/>
<client:when client="palm,pocketpc"><p/></client:when>
<client:when client="nokia"><p/></client:when>
Image placement is also altered slightly for the different classifications.
<client:when-not client="palm,nokia">
<p/>
This additional content is also included if the client is not a "nokia" or
"palm" classification.
<p/></client:when-not>
```

12.3.3 Develop Appropriate Look And Feels

The Look And Feels (skins and skeletons) provided with WebLogic Portal include support for a few mobile devices (Nokia, Palm, and Pocket PC).

You can develop your own skins and skeletons to support different devices. When a Look And Feel is selected for a desktop, the portal framework reads the client classification property in the `DefaultRequestPropertySet.req` file and uses the Look And Feel logic to find skin and skeleton directories matching the name of the client classification.

Any portal web project that you create includes a default set of multichannel Look And Feels located in skin and skeleton subdirectories (`\framework\skins\default` and `\framework\skeletons\default`).

For instructions on creating skins and skeletons for Look And Feels, refer to [Chapter 7, "User Interface Development with Look And Feel Features."](#)

12.3.4 Interaction Management Development

Using the client classification name stored in the `DefaultRequestPropertySet.req` file, you can build and trigger personalization and campaigns for devices based on that property value.

For information on developing personalization and campaigns, refer to the *Oracle Fusion Middleware Interaction Management Guide for Oracle WebLogic Portal*.

Designing Portals for Optimal Performance

The process of optimizing your portal for the best possible performance spans all phases of development. You should continually monitor performance and make appropriate adjustments.

This chapter describes performance optimizations that you can incorporate as you develop your portal.

For information about fine-tuning your portal application after it has been deployed, please refer to the *Oracle Fusion Middleware Performance Tuning Guide for Oracle WebLogic Portal*. For information about capacity planning, see the *Oracle Fusion Middleware Capacity Planning Guide for Oracle WebLogic Portal*.

Note: The *Oracle Fusion Middleware Performance Tuning Guide for Oracle WebLogic Portal* and the *Oracle Fusion Middleware Capacity Planning Guide for Oracle WebLogic Portal* are typically available online three months after the release of a particular version of WebLogic Portal.

This chapter contains the following sections:

- [Section 13.1, "Asynchronous Desktop Rendering"](#)
- [Section 13.2, "Control Tree Design"](#)
- [Section 13.3, "Using Multiple Desktops"](#)
- [Section 13.4, "Optimizing the Control Tree"](#)
- [Section 13.5, "Other Ways to Improve Performance"](#)

13.1 Asynchronous Desktop Rendering

Asynchronous rendering improves overall portal performance by allowing the contents of portlets to render independently of one another.

WebLogic Portal supports two methods of asynchronous rendering: portlet-specific and desktop. With portlet-specific asynchronous rendering, you can choose which portlets will render asynchronously. With asynchronous desktop rendering, *all* portlets within a portal desktop render asynchronously.

This section discusses asynchronous desktop rendering primarily. For detailed information on portlet-specific asynchronous rendering, see the chapter "Optimizing Portlet Performance" in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

This section includes these topics:

- [Section 13.1.1, "Choosing the Method of Asynchronous Rendering"](#)
- [Section 13.1.2, "Configuring Asynchronous Desktop Rendering"](#)
- [Section 13.1.3, "Programmatically Disabling Asynchronous Desktop Rendering"](#)

13.1.1 Choosing the Method of Asynchronous Rendering

Both portlet-specific and desktop asynchronous rendering improve overall portal performance. Because only the portlets that have changed are updated (refreshed), users experience quicker overall response times. In addition to improving portal response times, asynchronous rendering decreases server load.

Consider choosing asynchronous desktop rendering if:

- You want to use interportlet communication in your asynchronously rendered desktop. Interportlet communication is not supported for portlet-specific asynchronous rendering.
- You need to have programmatic access to the full portal control tree. For example, with asynchronous desktop rendering enabled, portlets can take advantage of backing context objects such as `PageBackingContext`. These objects cannot be used by portlets configured for portlet-specific asynchronous rendering.

Consider choosing portlet-specific asynchronous rendering if:

- You only need to enable asynchronous rendering on a single portlet. For example, if a specific portlet requires a long processing time, you might not want to hold up the entire portal.

13.1.2 Configuring Asynchronous Desktop Rendering

You can configure asynchronous desktop rendering in Oracle Enterprise Pack for Eclipse and in the WebLogic Portal Administration Console. In both cases, you can choose one of three options:

- **Enable** – Enables asynchronous desktop rendering for the entire portal desktop. This mode disables any portlet-specific asynchronous rendering settings that may exist in the desktop.
- **Disable** – Disables asynchronous rendering for the entire portal desktop. This mode disables asynchronous rendering for all portlets, including ones that have portlet-specific asynchronous rendering enabled.
- **Compatibility Mode** – Enables portlet-specific asynchronous rendering to function, but disables asynchronous desktop rendering.

Asynchronous desktop rendering in Oracle Enterprise Pack for Eclipse is set with the portal property called `Asynchronous Mode`. See [Section 8.2.1, "Editing Portal Properties"](#) for details.

In the Administration Console, you can set asynchronous desktop rendering for specific desktops in the Advanced Properties section of the Desktop Details window. See [Section 15.12.2, "Modifying Desktop Properties"](#) for details.

13.1.3 Programmatically Disabling Asynchronous Desktop Rendering

In some cases, you might want to give portal users the ability to turn off asynchronous desktop rendering for their personal view. The primary use case is for creating such a feature is for accessibility compliance (Section 508 and WAI) – some screen readers do

not work properly with Ajax, the web development technique upon which asynchronous rendering relies.

To control asynchronous desktop rendering on a per-request basis, attach a backing file to the desktop in the `.portal` file and call the `DesktopBackingContext.setAsyncMode(DesktopBackingContext.AsyncModeType.asyncMode)`. This method must be called in the `Init()` method of the backing file. For information on working with the `DesktopBackingContext` class and this method, refer to the Javadoc (Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal). For information on backing files, see the [Section 3.10, "Backing Files."](#)

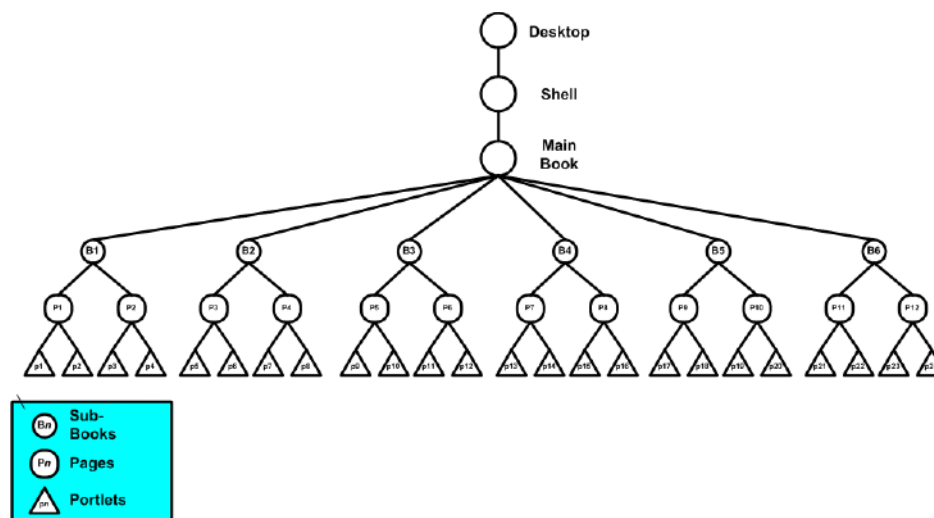
13.2 Control Tree Design

One of the most important variables that affects portal performance is portal framework controls. The more portal framework controls (pages, portlets, buttons, and so on) you have, the larger your control tree.

13.2.1 How the Control Tree Works

When a portal is instantiated, it generates a taxonomy, or hierarchy of portal resources, such as desktops, books, pages, and portlets. Each resource is represented as a node on the control tree, as shown in [Figure 13–1](#).

Figure 13–1 Simple Portal Schematic Example



This example depicts a single portal with a main book containing six sub-books, which in turn contain two pages each, and each page contains two portlets each, for a minimum of 42 controls in the portal; the inclusion of buttons, windows, menus, and layouts increases the number of controls on the portal significantly.

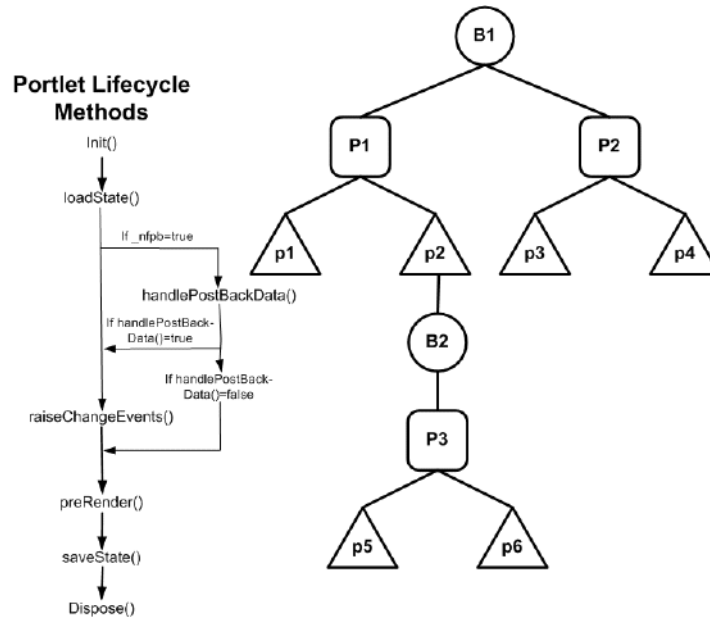
Note: This example is significantly oversimplified; enterprise portals might include thousands of controls.

13.2.2 How the Control Tree Affects Performance

Once the control tree is built and all the instance variables are set on the controls, the tree must run through the life cycle for each control before the portal can be fully-rendered. The life cycle methods are called in depth-first order. That is, all the

`init()` methods for each control are called, followed by the `loadState()` method for each control, and so on in an order determined by the position of each control in the portal's taxonomy. For example, the control tree illustrated in Figure 13-2 depicts the taxonomy a simple portal comprised of a book (B1) containing two pages (P1 and P2), which each contain two portlets (p1-p4; note that p2 also contains its own subordinate book, page, and portlet hierarchy).

Figure 13-2 Control Tree with Life Cycle Methods



When this portal is rendered, the `init()` method (and `handlePostBackData()` if `_nfpb=true`) is called first, for each control, in this order: B1, P1, p1, p2, B2, P3, p5, p6, P2, p3, and finally p4. Next, the `loadState()` method would be called in the same order, and so on for all life cycle methods through `saveState()`.

Note: Control life cycle methods `preRender()`, `render()`, and `dispose()` are called only on visible controls.

Running each control through its life cycle requires some overhead processing time, which, when you consider that a portal might have thousands of controls, can affect performance. Thus, you can see that larger the portal's control tree the greater the performance hit.

13.3 Using Multiple Desktops

The simplest way to limit the size of the control tree without limiting the flexibility of the portal is to split the portal into multiple desktops. In portal taxonomy, a desktop is nothing more than a portal embedded into another portal. It maintains the ability to leverage all of the features inherent in any portal and, within itself, can contain additional desktops.

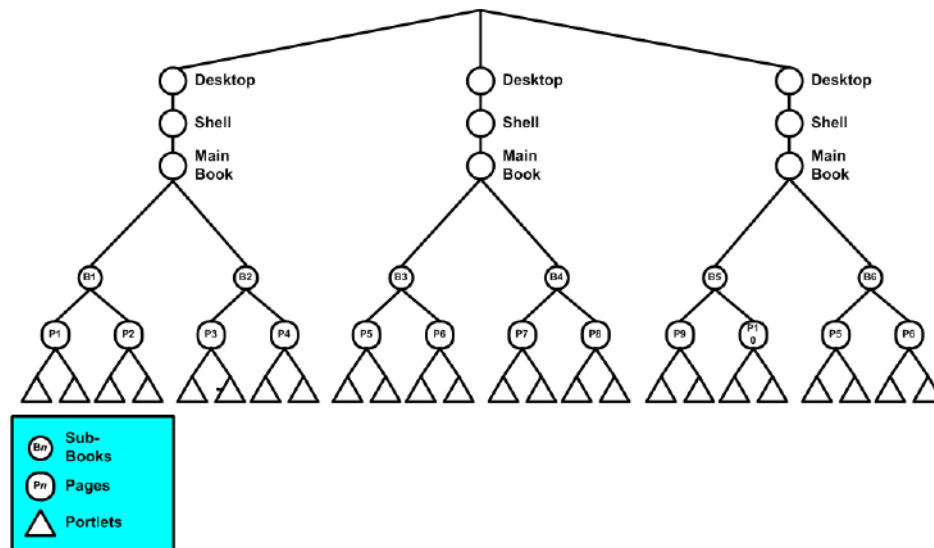
13.3.1 Why This is a Good Idea

When you split a complex portal into multiple desktops, you spread the controls among those desktops. Since the control tree is scoped to the individual portal and since a desktop behaves much like a portal, each desktop has its own tree and the controls on that tree are built only when that desktop is opened. Thus, by splitting a complex portal with a large control tree into multiple desktops, you reduce the number of controls on the tree to just that number necessary for the active desktop. As you might guess, this reduces the amount of time required to render the portal as a single desktop and increase portal performance.

When a portal is rendered, about 15% of the processing time is dedicated to constructing the control tree, 70% to running the life cycle methods, and 15% in garbage collection (clearing dead objects from the heap, thus releasing that space for new objects). While construction and garbage collection are always performed, running the life cycle methods is necessary only for visible controls (that is, those on the exposed desktop). This results in considerable overhead savings and improved system performance.

For example, the sample control tree depicted in [Figure 13-1](#) shows a single portal with 42 controls. Were we to split this portal up into multiple desktops, as in [Figure 13-3](#), while we would increase the number of control trees in the entire portal, each tree would be nearly two thirds smaller, and thus be processed in roughly two-thirds the time, significantly reducing the time required to render the portal.

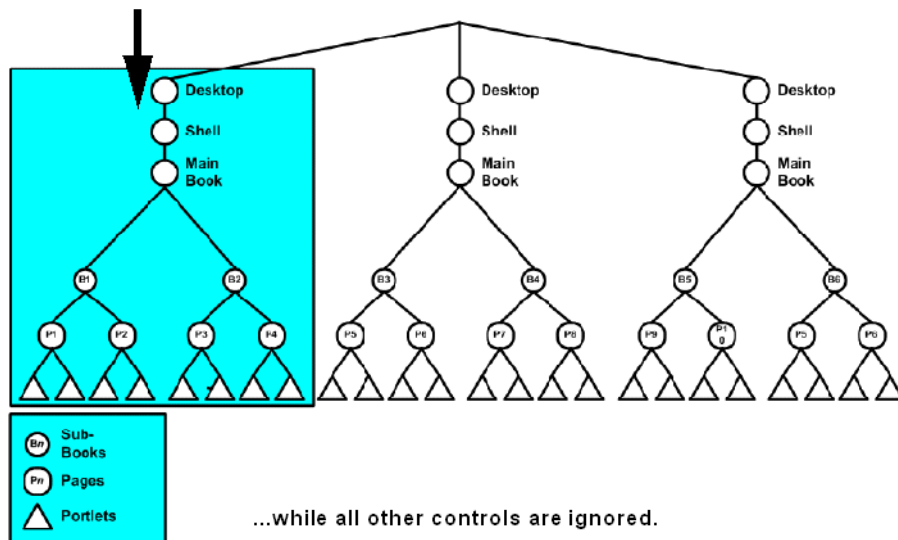
Figure 13-3 Simple Portal Split into Multiple Desktops



[Figure 13-4](#) shows how the example in [Figure 13-3](#) might be rendered once opened.

Figure 13–4 How Multiple Desktops Reduce Control Tree Size

When this desktop is opened, a control tree is constructed using only the controls on that desktop...



13.3.2 Design Decisions for Using Multiple Desktops

As these examples demonstrate, splitting a complex portal into multiple desktops can be very rewarding in terms of improved performance; however, not all portals benefit from the extra effort required to split them into multiple desktops. Before implementing a portal using multiple desktops, you need to consider some important design decisions. For example:

- **How many controls does your portal use?** If the portal is small (about ten pages or less) or uses a limited number of controls, the extra effort necessary to create multiple desktops might not be necessary.
- **Can your portal be logically divided into multiple desktops?** While splitting a complex portal into multiple desktops might save rendering time, arbitrarily assigning portlets to those desktops, with no thought to their interrelationships, can be dangerous. Visitors might have a negative experience with the application if related information is not easily located, particularly if it is on a desktop separate from where it might logically go.
- **What sort of administrative overhead is required once the multiple desktops are deployed into production?** For example, if you have 20 different potential desktops, a big consideration is how common they will be. If they are more alike than different, then using fewer desktops is better because there will be fewer administrative tasks to perform.
- **Are there customization concerns?** Each desktop must be customized separately, which can add significant additional effort for portal developers and administrators. However, note that portal administrators can make changes in the library that will affect all desktops in the portal.
- **Can you afford to lose some functionality in your portal?** For example, if your application relies on interportlet communication, either through page flows or backing files, you might be better off not splitting up the portal, as listeners and handlers on one desktop cannot communicate with their counterparts on other

desktops. For portlets to communicate with each other, they must be on the same desktop; your portal design must take this requirement into consideration.

Note: Page Flows are a feature of Apache Beehive, which is an optional framework that you can integrate with WLP. See [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

For more information on creating desktops, please refer to [Section 15.12, "Desktops."](#)

13.4 Optimizing the Control Tree

Tree optimization, as the name implies, means that control tree rendering is done in a way that creates the least amount of system overhead while providing the user with as complete a set of portal controls as that user needs to successfully use the portal instance.

Note: Asynchronous rendering can be used with control tree optimization. For more information about asynchronous portlet rendering, refer to the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

13.4.1 Enabling Control Tree Optimization

You enable control tree optimization by setting the `treeOptimizationEnabled` flag in the `.portal` file to true, as shown in [Example 13-1](#).

Example 13-1 Enabling Tree Optimization in .portal

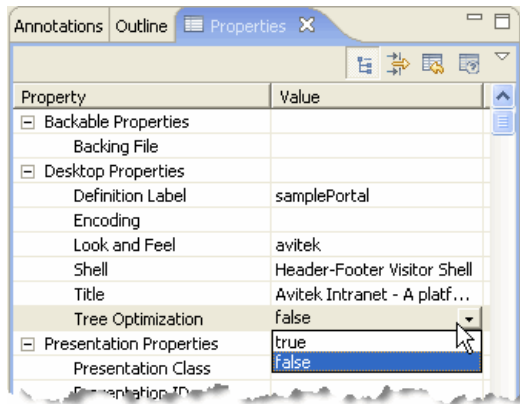
```
<desktop> element:
<netuix:desktop definitionLabel="defaultDesktopLabel"
  markupName="desktop" treeOptimizationEnabled="true"
  markupType="Desktop" title="SimplePortal"><netuix:lookAndFeel
  definitionLabel="defaultLookAndFeel">
</netuix:desktop/>
```

Note: If `treeOptimizationEnabled=` is not included in the `.portal` file, the portal defaults to `treeOptimizationEnabled=false`.

When this flag set to true, the portal framework generates a partial control tree instead of the full control tree, basing this tree on just the controls that are visible and active. Thus, with fewer controls needing to be rendered, processing time and expense can be significantly reduced.

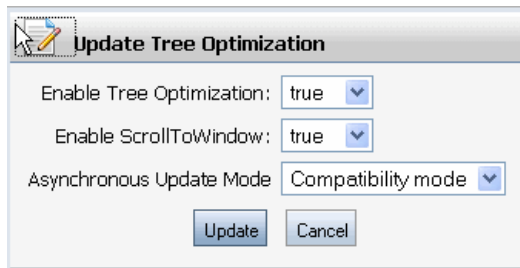
For portals, you can enable this flag by setting Tree Optimization to true in the Oracle Enterprise Pack for Eclipse Properties view, as shown in [Figure 13-5](#).

Figure 13–5 Enabling Tree Optimization in Oracle Enterprise Pack for Eclipse



- For desktops, you can set the flag from the Administration Console, as shown in [Figure 13–6](#).

Figure 13–6 Enabling Tree Optimization from the Administration Portal



Note: For new desktops, treeOptimizationEnabled="true" is the default value.

13.4.1.1 Setting the Current Page

Before the flag can actually work, the file `beehive-url-template-config.xml` (in `Portal_Web_Project/webAppName/WEB-INF`) must have `{url:currentPage}` set in the `<url-template>` element, as shown in [Example 13–2](#).

Note: When you create a new project in Oracle Enterprise Pack for Eclipse, `currentPage` is added automatically; however, if you are migrating from an earlier version of WebLogic Portal, you must manually update `beehive-url-template-config.xml`.

Example 13–2 `beehive-url-template-config.xml` URL Templates Component

```

<!-- URL templates -->
  <url-template>
    <name>default</name>
  <value>{url:scheme}://{url:domain}:{url:port}/{url:path}?{url:queryString}{url:currentPage}</value>
  </url-template>
  <url-template>
    <name>default-complete</name>
  <value>{url:scheme}://{url:domain}:{url:port}/{url:prefix}/{url:path}?{url:querySt

```



```

ring}{url:currentPage}</value>
  </url-template>
  <url-template>
    <name>jpf-default</name>
    <value>http://{url:domain}:{url:port}/{url:path}?{url:queryString}{url:currentPage}</value>
  </url-template>
  <url-template>
    <name>jpf-action</name>
    <value>http://{url:domain}:{url:port}/{url:path}?{url:queryString}{url:currentPage}</value>
  </url-template>
  <url-template>
    <name>jpf-secure-action</name>
    <value>https://{url:domain}:{url:securePort}/{url:path}?{url:queryString}{url:currentPage}</value>
  </url-template>
  <url-template>
    <name>jpf-resource</name>
    <value>http://{url:domain}:{url:port}/{url:path}?{url:queryString}{url:currentPage}</value>
  </url-template>
  <url-template>
    <name>jpf-secure-resource</name>
    <value>https://{url:domain}:{url:securePort}/{url:path}?{url:queryString}{url:currentPage}</value>
  </url-template>

  <url-template-ref-group>
  <name>default-url-templates</name>
  <url-template-ref>
  <key>action</key>
  <template-name>jpf-action</template-name>
  </url-template-ref>
  <url-template-ref>
  <key>secure-action</key>
  <template-name>jpf-secure-action</template-name>
  </url-template-ref>
  <url-template-ref>
  <key>resource</key>
  <template-name>jpf-resource</template-name>
  </url-template-ref>
  <url-template-ref>
  <key>secure-resource</key>
  <template-name>jpf-secure-resource</template-name>
  </url-template-ref>
  </url-template-ref-group>

```

13.4.2 How Tree Optimization Works

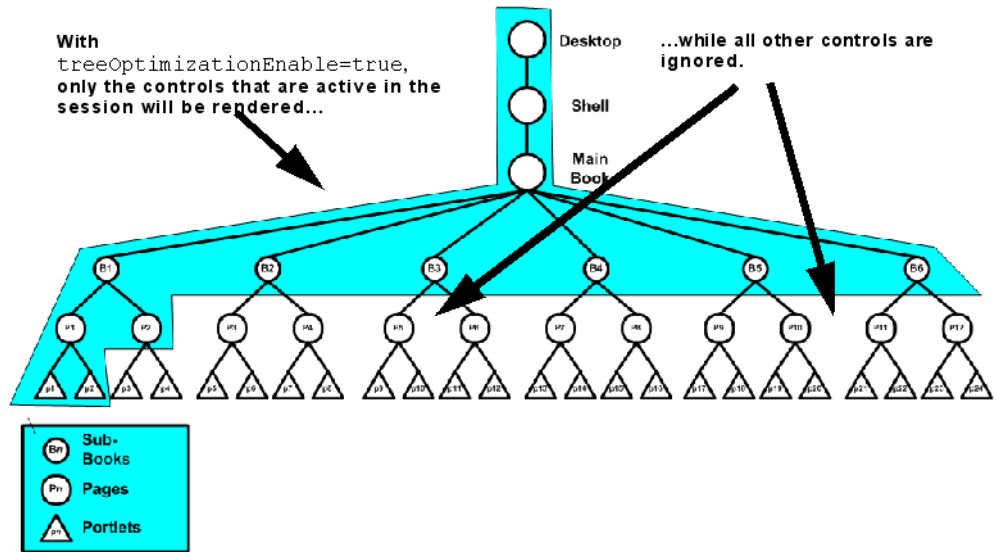
When the portal servlet receives a request (that is, a mouse-click) it reads the cache to determine if a control tree factory exists. If one doesn't, it calls `controlTreeFactoryBuilder`, passing it the XML from the `.portal` file. This class returns a control tree factory to the servlet, which passes the request to the `CreateUIControlTree` class.

Assuming `_pageLabel` and `treeOptimizationEnabled="true"`, `CreateUIControlTreeFactory` calls the `PartialUIControlTreeCreator()`

method, which returns a control tree comprised of just the control identified by the page label and the set of active page and book labels; this is a *partial* control tree.

For example, if tree optimizations were enabled for the portal depicted in Figure 13–4, when you submit a request (that is, a mouse click), only the active controls would be rendered, as illustrated in Figure 13–7.

Figure 13–7 How Tree Optimization Reduces Control Tree Size



The set of active page and book labels for that session stored during the `saveState()` life cycle method execution tell `PartialUITreeCreator()` which controls to build. Only these controls will be built; all others in the portal are ignored. As you can see, a significant amount of processing overhead is eliminated when the control tree is optimized—since far fewer controls need to be built—resulting in greatly improved performance.

13.4.3 Multi Level Menus and Control Tree Optimization

Single Level Menus provide significantly better performance in very large portals than Multi Level Menus. Although every environment is different, an example of a very large portal might include one that contains 40 books, with each book having 10 pages, and each page having 10 portlets, for a total of 4000 portlets; a typical user load might be 2000 concurrent users.

With Single Level Menus enabled in an example environment, the response time of the system is at least twice as fast when compared with portals having Multi Level Menus. The reason for this is that the Multi Level Menu must traverse the control tree to be able to build the menu, regardless of whether control tree optimization is turned on. There is still an advantage to using control tree optimization with a multi level menu, but system performance is not a primary reason to do so.

13.4.4 Limitations to Using Tree Optimization

If you are creating complex portals that require a large number of controls, tree optimization is the easiest way to ensure optimal portal performance. Controls that aren't active in the current portal instance aren't built, saving considerable time and overhead. Nonetheless, you need to be aware that tree optimization slightly changes a

portal's behavior and some portal implementations will not have substantial benefit; for example:

- When optimization is disabled, the backing file lifecycle methods `init()` and `handlePostBackData()` are called for both visible and non-visible controls; when tree optimization is enabled these lifecycle methods are called only for visible controls.
- If your portal uses backing files on any of their controls, some backing context APIs are limited in their functionality.

On `DesktopBackingContext`, `BookBackingContext`, and `PageBackingContext`, the following methods return null if they are trying to access a page, book, or portlet that is not in the partial tree

```

- public BookBackingContext
  getBookBackingContextRecursive(String definitionLabel)

- public PageBackingContext
  getPageBackingContextRecursive(String definitionLabel)

- public PortletBackingContext
  getPortletBackingContextRecursive(String instanceLabel)

- public PortletBackingContext[]
  getPortletsBackingContextRecursive(String definitionLabel)

```

You might experience the same behavior—or lack thereof—on `DesktopPresentationContext`, `BookPresentationContext`, and `PagePresentationContext` with the presentation versions of these methods:

```

- public BookPresentationContext
  getBookPresentationContextRecursive(String
  definitionLabel)

- public PagePresentationContext
  getPagePresentationContextRecursive(String
  definitionLabel)

- public PortletPresentationContext
  getPortletPresentationContextRecursive(String
  instanceLabel)

- public PortletPresentationContext[]
  getPortletsPresentationContextRecursive(String
  definitionLabel)

```

- If your portal uses multi-level menus you need to decide if the benefit of multi-level menus outweigh any performance hit.

If the menu is on an active book, every control accessible from that menu must be created before the portal is completely rendered, thus more overhead and a greater performance hit. On the other hand, because a multi-level menu results in the creation of a skeletal control tree, it can reduce the number of request cycles required to navigate to your desired destination, reducing the total overhead required to accomplish a navigation.

Overall, single-level menus provide significantly better performance in very large portals than multi-level menus. Although every environment is different, an example of a very large portal might include one that contains 40 books, with each book having 10 pages, and each page having 10 portlets, for a total of 4000 portlets; with a typical user load of 2000 concurrent users. With single-level menus

enabled in an example environment, the response time of the system is at least twice as fast when compared with the same portal using multi-level menus.

- If your portal uses Programmatic Page Change Events called from a backing file and the page to which the change is being directed is not within the partial control tree, it does not exist in the instance and the page change will not occur.

You can work around this problem by doing one of the following (this is the preferred order):

1. Use a link to perform the page change.
 2. Use the new declarative interportlet communications model.
 3. Implement a redirect from within the backing file.
 4. Set `_nfto="false"` in the invoking link. This causes the full control tree to be created for that single request.
 5. Turn off tree optimization altogether on the portal.
- If your portal uses "cookie" or "url" state locations, the partial control tree *will not* work.
 - If your portal uses non-visible portlets, the `onDeactivation` portlet events for non-visible portlets might not work with portal tree optimization turned on.

When the "tree optimization" flag in a `.portal` file is turned on, not all non-visible portlets for a given request are processed. (A non-visible portlet is one that lives on a page that is not displayed for the given request.) This can be a problem if you are trying to catch an `onDeactivation` event for a portlet—once the portlet has been deactivated, it is no longer visible, and so the system doesn't process it to fire its deactivation event. The recommended workaround is to set tree optimization to false for the portal in question. However, there is a trick you can play if you need the tree optimization. For each portlet that you want to catch deactivation events for, define a dummy event handler (for example, create a custom event handler with `event = "[some nonsense string]"` and set the property "Only If Displayed" to false. This forces the system to process the portlet whether visible or not.

Mindful of these conditions, *never* set `treeOptimizationEnabled` to `true` without first doing a complete regression test on the portal. If any of the above-listed problems occur, you might want to rethink your portal design or disable tree optimization completely.

13.4.5 Disabling Tree Optimization

As discussed above, although control tree optimization can benefit almost any portal, behavioral limitations might require that you disable it. When you disable optimization, the portal creates a full control tree upon every request. Be aware that this could significantly impede the performance of very large portal. You need to decide whether the anticipated performance hit is offset by the improvement in functionality.

To disable tree optimization, do one of the following:

- Set `treeOptimizationEnabled="false"` in the `.portal` file or on the desktop.

Include `nfto="false"` in the request parameter of just that instance for which you want to disable tree optimization. The parameter needs to be added to URL programmatically as the URLs are generated using framework classes `GenericURL` and `PostBackURL`; for more information on these classes, see the Oracle WebLogic Portal *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*.

The following code shows one way to adding this parameter:

```
PostbackURL url = PostbackURL.createPostbackURL(request, response);
url.addParameter(GenericURL.TRE_OPTIMIZATION_PARAM, "false");
```

- Use one of the tags in the render tag libraries.
- Delete the `_pageLabel` parameter from the request.

13.5 Other Ways to Improve Performance

In addition to managing the taxonomy of your portal through effective use of the control tree, Oracle WebLogic Portal offers other ways to improve performance. These solutions can all be used in concert with multiple desktops and control tree optimization, ensuring superior portal performance. This section describes the most effective performance-enhancing solutions available with Oracle WebLogic Portal.

13.5.1 Use Entitlements Judiciously

Entitlements determine who can access the resources in a portal application and what they can do with those resources. This access is based on the role assigned to an application visitor, allowing for flexible management of the resources. For example, if you have an Employee Review portlet, you can assign the "Managers" visitor entitlement role you created to that portlet, letting only logged in users who belong in that role view the portlet.

Users visiting an application are assigned roles based on an expression that can include their name, the group that they are in, the time of day, or characteristics from their profile. For example, the "gold member" role could be assigned to a user because they are part of the frequent flyer program and have flown more than 50,000 miles in the previous year. This role is dynamically assigned to the user when they log into the site.

13.5.1.1 How Entitlements Affect Performance

To ensure optimal portal performance, use entitlements judiciously. Too many entitlements can significantly impact performance. This happens because the entitlement engine is called during the render phase of an operation and is required to check system overhead and rules. Because this checking represents additional system overhead, if it is required too often on a portal, performance degrades. In addition, the entitlements engine is also responsible for managing administrative tasks, which increases that overhead, again causing degrading performance.

By default, entitlements are stored in the database as opposed to LDAP. Nonetheless, always be aware that too many entitlements can impede performance.

13.5.1.2 Recommendations for Using Entitlements

Here are some simple recommendation for using entitlements judiciously:

- **Avoid the temptation to create a role for every node on an organizational chart.** In large organizations, granting entitlements would then become a serious burden on the system. If you want to focus the user experience to a more granular level than that provided by the role assigned a user, consider employing the personalization capabilities available with Oracle WebLogic Portal.
- **Disable entitlements if a portal is not using any security policies.** If a portal is using security policies enable it and set the value for the `<control-resource-cache-size=nn>` attribute to equal the number of

desktops + number of books + number of pages + number of portlets + number of buttons (max, min, help, edit) used in a portal. Use the default value if you are concerned about available memory.

- **Limit your entitlement request to only one resource at a time.** Bundling a larger number of resources (portlets, pages, books) with one entitlement request can cause an unwanted performance hit.
- **If your portal uses more than 5000 entitlements, customize the cache settings for WebLogic Entitlements Engine.** For details, see the *Performance Tuning Guide*, which will be available in a future documentation release.

13.5.2 Limit User Customizations

Oracle recommends that you allow portal visitors to modify only one page or a small set of pages, and require that administrators control the remainder of pages.

When users customize a page, they obtain their own instance of that page. All other pages that have not been customized point back to the original library instance. When an administrator makes a change to a page, that change must iterate for each user who customized the page. If many users customized that page, propagating the change might take a long time because of the required database processing.

13.5.3 Optimize Page Flow Session Footprint

Note: Page Flows are a feature of Apache Beehive, which is an optional framework that you can integrate with WLP. See [Section 5.1, "Apache Beehive and Apache Struts Supported Configurations."](#)

If your portal uses page flows portlets in a replicated clustering environment, you might experience a performance issue because the request attributes you add to these portlets might be persisted to the session as a component of a page flow portlet's state. As more request attributes are added, the session grows, often to sizes that can severely restrict performance.

Page Flow portlets are hosted within the Portal framework by the Scoped Servlet environment. This environment effectively acts as a servlet container, but its behavior causes the request attributes to be scoped to the session within a container class used to persist page flow state. This can be particularly unwelcome in clustered environments, when large amounts of data—including these page flow portlet request attributes—might be replicated across the cluster.

WebLogic Portal provides the Request Attribute Persistence (`requestAttrPersistence`) property for page flow portlets. This property is included in the `.portlet` file and can be set using the Properties view in Oracle Enterprise Pack for Eclipse.

The Request Attribute Persistence property has these values:

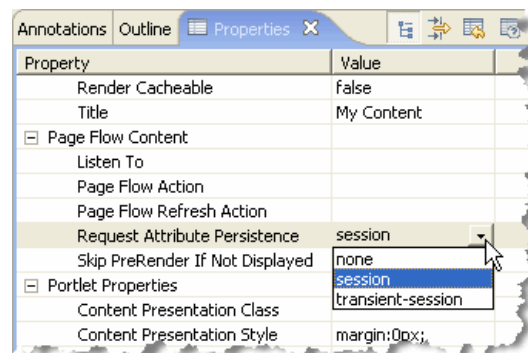
- **session:** this is the existing behavior (this is the default). All existing page flow portlets should not require changes by default.
- **transient-session:** places a non-serializable wrapper class around a persisted page flow state object into the session. These portlets work just as the existing portlets, except in failover cases, where the persisted request attributes disappear on the failed-over-to server. In these cases you must write the forward JSPs to

gracefully handle this contingency by, at minimum, not expecting any particular request attribute to be populated and, ideally, by having a mechanism to either repopulate the request attributes automatically or present the user with a link to re-run the last action to repopulate the request attributes. For non-failover cases, request attributes are persisted, providing a performance advantage for non-postback portlets identical to default session persistence portlets. While session memory is still consumed in this case, there will be no additional cluster replication costs for the persisted request attributes.

- **none:** performs no persistence operation. Since these portlets never have request attributes available on refresh requests, you must write the forward JSPs to assume the request attributes will not be available. This option is helpful when you want to remove completely the framework-induced session memory loading for persisted request attributes.

To set the request attribute persistence attribute for a page flow portlet, open the Request Attribute Persistence drop-down under the Page Flow Content group in the Properties view and select the desired value, as shown in [Figure 13–8](#).

Figure 13–8 Selecting Request Attribute Persistence Attribute



13.5.4 Use File-Based Portals for Simple Applications

Portals come in two flavors: file-based and streaming. As the name implies, a file-based portal—also called a "light portal"—obtains all of its resources from the user's file system. Streaming portals, on the other hand, derive their resources from one or more databases.

A key difference between the two implementations is in the method you use to create and manage multiple portlet instances. Using a streamed portal, managed using the WebLogic Portal Administration Console, you can manage a single instance of a portlet while reusing it in many places; you can also easily create a large number of portlet instances and configure each one differently. Using a file-based portal you need to create individual source portlets within `.portal` files.

Streaming portals also provide you with the management capabilities of the Administration Console. For example, if you want to disable a portlet, you can do this task easily from the Administration Console; otherwise, you must directly access the production servers to change `.portal` files. The Administration Console also provides management functionality for book and page contents, and the ability to user visitor entitlements and delegated administration on different instances of resources.

13.5.4.1 Why Use a File-based Portal?

For simple, static portals, deriving resources from the file system can result in improved performance and bring these benefits:

- Source code control is easily manageable.
- Propagation to other environments is easy.
- They are easy to create in Oracle Enterprise Pack for Eclipse.

13.5.4.2 Limitations to Using File-based Portals

While file-based portals might show some performance improvement over streaming portals, their functionality is limited; for example, because no database is involved, you cannot take advantage of things such as user customization or entitlements. Other features that are missing from a file-based portal include:

- Delegated Administration
- Visitor Tools
- Preferences at the portal instance level and at the definition level.

Moreover, in the majority of cases, the performance improvement gained by using a file-based portal is not so significant as to outweigh these limitations.

13.5.5 Create a Production Domain in Development

While this tip doesn't directly improve performance at runtime, it nonetheless allows you to see how your application will perform before you propagate it to production. By creating a production domain in development, you can simulate and then evaluate how the portal will perform in production. You can then make the necessary adjustments before actually deploying the portal. If problems occur or performance is not optimal, you can rectify these situations before the end user ever sees them.

To create a production domain, you must update the startup script settings by setting the `WLS_PRODUCTION_MODE=` flag to `true` and setting to `false` these flags:

- `iterativeDevFlag`
- `debugFlag`
- `testConsoleFlag`
- `logErrorsToConsoleFlag`
- `pontbaseFlag`
- `verboseLoggingFlag`

Additionally, you must set default values for the threadcount and the `JDBCConnectionPool` sizes. If you are threading portlets (that is, using `forkable=true`) ensure that you configure a `portalRenderQueue` and `portalPreRenderQueue` in your `config.xml` file so that the forked portlets use their own thread pools and not the WebLogic thread pool. The following code sample describes how to set the thread count appropriately:

```
<ExecuteQueue Name="default" ThreadCount="15"/>
<ExecuteQueue Name="portalRenderQueue" ThreadCount="5"/>
```

13.5.6 Optimize Portlet Performance

You can optimize the performance of the portlets in your portal in several ways, including the following:

- Editing performance-related portlet properties to optimize performance
- Caching portlets
- Using remote portlets
- Pre-rendering and rendering portlets in parallel
- Rendering portlet content asynchronously
- Using backing files

You can find more detail on each of these alternatives in the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal*.

13.5.7 Use Oracle WebCenter Portal's Analytics to Track Usage

Oracle WebCenter Portal's Analytics provides a selection of reports with useful statistics on usage patterns in Oracle WebLogic Portal. For details on using these reports and creating custom reports, see *Oracle Fusion Middleware Oracle WebCenter Analytics Administrator's Guide for Oracle WebLogic Portal*.

Obtaining Debug Information

This chapter explains how to obtain debug information from public WLP classes and add debugging calls to your own code. This chapter includes the following sections:

- [Section 14.1, "Introduction"](#)
- [Section 14.2, "Configuring and Enabling Debug"](#)
- [Section 14.3, "Public WLP Class Debug Reference"](#)

For details on how to use Oracle Enterprise Pack for Eclipse to debug your web application project, see "Deploying or Debugging the Application" in *Oracle Fusion Middleware Quick Start Guide for Oracle WebLogic Portal*.

14.1 Introduction

The class `com.bea.p13n.util.debug.Debug` is used throughout WLP classes to print information that can be useful in debugging. You can use the `Debug` class in your own code. By default, debugging is turned off. For information on turning debug output on and off, see [Section 14.2.2, "Turning Debug Output On and Off."](#)

14.2 Configuring and Enabling Debug

The `com.bea.p13n.util.debug.Debug` class provides methods for printing and information messages from WLP code. This section explains how to use `Debug` in your own code and to turn `Debug` output on and off. This section includes these topics:

- [Section 14.2.1, "Using Debug in Your WLP Code"](#)
- [Section 14.2.2, "Turning Debug Output On and Off"](#)
- [Section 14.2.3, "Package-Level Debugging"](#)
- [Section 14.2.4, "Directing Output to a File"](#)
- [Section 14.2.5, "Reloading Debug Properties"](#)
- [Section 14.2.6, "Example debug.properties File"](#)

14.2.1 Using Debug in Your WLP Code

Use the `com.bea.p13n.util.debug.Debug` class to add debugging information calls to your WLP code. The `Debug` class lets you:

- Turn debugging on and off without recompiling code.
- Enable debugging output for a single class or entire package.

- Discover where debugging messages are coming from.

[Example 14–1](#) illustrates the basic pattern for using Debug in your classes. For detailed information on Debug methods, refer to the Javadoc (Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal).

Example 14–1 Using Debug in a Class

```
package com.bea.example;
import com.bea.pl3n.util.debug.Debug;
class MyClass
{
    // Instance of debug object for debugging (if turned on)
    // Using this pattern makes it easy to know the debug "switch"
    // for any class
    private static final Debug debug = Debug.getInstance( MyClass.class );

    MyClass()
    {
        // debug class creation event
        debug.here()
    }
    void myMethod()
    {
        // output a debugging message along with class, method & line number
        debug.out("This is some message");

        // output a debugging message followed by object value
        // use this rather than ("message" + val) to avoid
        // expression evaluation (string concatenation) when debug is off
        debug.out("The value is:", val);

        // Avoid expression evaluations by using debug.ON or debug.isOn()
        if (debug.ON)
        {
            Object thing = doSomeCalculations();
            debug.out( "The thing " + thing + " is the calculation result." );
        }
    }
}
```

The output includes class, method, line number, and variable information. When debugging is turned on, the debug output for the above example looks something like this.

```
*** com.bea.example.MyClass. (MyClass.java:<13>) ***
[com.bea.example.MyClass.myMmethod():18] This is some message
[com.bea.example.MyClass.myMmethod():23] The value is 42
[com.bea.example.MyClass.myMmethod():29] The thing kryten is the calculation
result.
```

By default, output is sent to `System.err`. For information on directing the output to a file, see [Section 14.2.4, "Directing Output to a File."](#)

14.2.2 Turning Debug Output On and Off

Debug messages are turned off by default. To switch debugging on, create a file named `debug.properties` in the directory where your domain's startup scripts reside. For an example `debug.properties` file, see [Section 14.2.6, "Example debug.properties File."](#)

Alternately, you can set the Java system property `debug.properties` to the name of your debug properties file. For example:

```
java -Ddebug.properties=/home/me/mydebug.properties ...
com.bea.example.MyClass: on
```

Tip: Technically, you can set the debug property to any value except `false`, `off`, `no` or `0` (these are values that can be used to turn logging off). For clarity and consistency, Oracle suggests that you use the values `on` and `off` in the `debug.properties` file.

14.2.3 Package-Level Debugging

To turn on debugging for all of the classes in a package, set the debug property `usePackageNames` to `on`. Then, you can turn on debugging for an entire package (and its child packages). For example, to turn on debugging for all classes in the `com.bea.example.*` package, add the following to `debug.properties`:

```
# turn on debugging by package names
usePackageNames: on

# turn on debugging for everything under com.bea.example package
# Note that you do not use wildcards, just mention the package
com.bea.example: on
```

Using package names enables you to have finer control because more specific names take precedence over less specific names. For example, if you want to turn on debugging for the entire `com.bea.example.*` package except for `MyClass` and the `com.bea.example.internal` package (with the exception of one class), add the following to `debug.properties`:

```
# turn on package names for debugging
usePackageNames: on

# turn on debugging for everything under com.bea.example package
com.bea.example: on

# turn off debugging for MyClass
com.bea.example.MyClass: off

# turn off debugging in the entire internal package
com.bea.example.internal: off

# Except turn debugging back on for internal.DebugThisClass
com.bea.example.internal.DebugThisClass: on
```

For an example `debug.properties` file, see [Section 14.2.6, "Example debug.properties File."](#)

14.2.4 Directing Output to a File

By default, Debug output is sent to `System.err`. To redirect debug output to a file, set the debug property `out.file` to the name of an output file. The debug output will be appended to the end of that file unless you also set `out.file.append=off`, in which case the file is deleted first. For example:

```
# append output to mydebug.log file rather than System.err
out.file = mydebug.log
```

```
# send this debugging to mydebug.log
com.bea.example.DebugMeToFile: on
```

If you want to direct output by using system properties instead of the `debug.properties` file, you can do so by adding a `debug` prefix to the property name. For example:

```
java -Ddebug.out.file=mydebug.log -Ddebug.com.bea.example.MyClass=on ...
```

14.2.5 Reloading Debug Properties

For performance reasons, Debug is by default not reloadable. The debug properties settings are in effect for the life of the JVM. To change the debugging configuration (for example, to change which classes or packages are turned on or off), you normally have to restart the JVM with different debug properties.

You can change the default reloading behavior with the debug property `reloadable` set to `on` in `debug.properties` or with `-Ddebug.reloadable=on` on the Java command line. If `reloadable` is set when the JVM is initially started, then debugging properties that are loaded from `debug.properties` (or system properties) can be changed at runtime without restarting the JVM. The `reloadable` property itself can not be changed at runtime; it must be set at JVM startup to take effect.

To change debug properties at runtime, edit the `debug.properties` file and call `Debug.reload()` from a JSP page or other runtime component.

Note that `reloadable` debug can be convenient for development, but even when it is not outputting any messages it does come at some cost, and thus should not be used in production or other performance-sensitive systems, such as load or performance tests.

14.2.6 Example debug.properties File

You enable output of WLP class debug information by either creating a `debug.properties` file or by using a system variable, as described in [Section 14.2, "Configuring and Enabling Debug."](#)

Following is an example of a `debug.properties` file, including enabled Level 1 and Level 2 debugging for WLP Virtual Content Repository classes.

```
# Example properties file for WebLogicPortal debug output

# Place this file in the directory where you start the server
# (the domain directory) or set -Ddebug.properties=debugFileName.
# The presence of this file turns debug on overall, and the
# properties in here control what debug is output.

# Most properties are booleans, and convention is to use "on" or "off" for the
values

# Debug can be reloadable - use debug.jsp to change things at runtime
# The default is off.
reloadable: off

# append output to mydebug.log file rather than System.err
#out.file = D:/debugOutput
#out.file.append= off

# Turn on debug for entire packages (recursively) rather than only naming
# desired classes. This is normally desired as it allows for debugging
```

```

# whole sets of things, without having to name individual classes
# The default is off.
usePackageNames: off

# Example debug configurations

# Debugging for an individual class
#com.bea.netuix.servlets.manager.PortalServlet: on

com.bea.content.federated.internal.CapabilityManagerImpl: on
com.bea.content.federated.internal.NodeManagerImpl: on
com.bea.content.federated.internal.SearchManagerImpl: on
com.bea.content.federated.internal.TypeManagerImpl: on
com.bea.content.federated.internal.VersionManagerImpl: on
com.bea.content.federated.internal.VirtualRepositoryManagerImpl: on
com.bea.content.federated.internal.WorkflowManagerImpl: on
com.bea.content.federated.internal.delegate.NodeLogic: on
com.bea.content.federated.internal.delegate.ObjectClassLogic: on
com.bea.content.federated.internal.delegate.RepositoryLogic: on
com.bea.content.federated.internal.delegate.SearchLogic: on
com.bea.content.federated.internal.delegate.VersionLogic: on
com.bea.content.federated.internal.delegate.WorkflowLogic: on

spi.com.bea.content.federated.internal.filter.logging.NOPSLoggingFilter: on
spi.com.bea.content.federated.internal.filter.logging.OCOPSLoggingFilter: on
spi.com.bea.content.federated.internal.filter.logging.RCOPSLoggingFilter: on
spi.com.bea.content.federated.internal.filter.logging.SOPSLoggingFilter: on
spi.com.bea.content.federated.internal.filter.logging.WOPSLoggingFilter: on

# Debug an entire package
#com.bea.qa.apps.controls: on

# This setup turns on debug for the entire com.bea.netuix.servlets package,
# but excludes com.bea.netuix.servlets.l10n (and its subpackages).
#com.bea.netuix.servlets: on
#com.bea.netuix.servlets.l10n: off

```

14.3 Public WLP Class Debug Reference

Many of the public WLP classes use Debug methods to produce information that might be helpful when debugging an application. You enable WLP class debug information by editing a `debug.properties` file (or by using a System variable), as described in [Section 14.2, "Configuring and Enabling Debug."](#)

This section lists the public WLP classes that use Debug methods to output informational messages. The classes are grouped by feature/functional area.

This section contains the following sections:

- [Section 14.3.1, "WLP Framework Classes with Debug Support"](#)
- [Section 14.3.2, "WLP Core Services Classes with Debug Support"](#)
- [Section 14.3.3, "WLP Virtual Content Repository Classes with Debug Support"](#)
- [Section 14.3.5, "WLP Administration Console Classes with Debug Support"](#)

14.3.1 WLP Framework Classes with Debug Support

The following table lists the WLP Framework classes that support debugging and their associated features.

Note: The WLP classes listed in the table below include only debug Level 1 output.

Table 14–1 WLP Framework Classes That Support Debug

| Feature | Class |
|-------------------------------------|--|
| WSRP - Transport | com.bea.wsrp.bind.markup |
| WSRP - URL Rewriting | <ul style="list-style-type: none"> ■ com.bea.wsrp.producer.adapter ■ com.bea.wsrp.producer.adapter.context |
| Portlet Containers - Beehive | <ul style="list-style-type: none"> ■ com.bea.portlet.adapter.scopedcontent ■ com.bea.netuix.servlets.controls.content.PageFlowContent |
| Portlet Containers - Struts | <ul style="list-style-type: none"> ■ com.bea.struts.adapter ■ com.bea.netuix.servlets.controls.content.StrutsContent |
| Portlet Containers - JSF | <ul style="list-style-type: none"> ■ com.bea.portlet.adapter.faces ■ com.bea.netuix.servlets.controls.content.FacesContent |
| Portlet Containers - JSP | com.bea.netuix.servlets.controls.content.JspContent |
| Portlet Containers - Clipper | <ul style="list-style-type: none"> ■ com.bea.netuix.servlets.controls.content.JspContent ■ com.bea.netuix.clipper.ClipperBacking ■ com.bea.netuix.clipper.Clipper |
| Portlet Containers - Browser | Note: There is no debug for the Portlet Containers - Browser feature. However, the control is rendered using a <code>DirectFeature</code> with the name <code>ASYNC_CONTENT_FEATURE = "portleturicontent"</code> . You can add debug statements to <code>framework/features/portleturicontent.jspx</code> to troubleshoot this feature. |
| Portlet Containers - Java (168/286) | com.bea.portlet.container |
| Framework - Caching | <ul style="list-style-type: none"> ■ com.bea.netuix.nf.ControlTreeWalker ■ com.bea.netuix.nf.container.jsp.BufferedJspContext |
| Framework - Threading | <ul style="list-style-type: none"> ■ com.bea.netuix.nf.ControlTreeWalker ■ com.bea.netuix.nf.container.jsp.BufferedJspContext ■ com.bea.netuix.nf.concurrency |
| Framework - LAF | <ul style="list-style-type: none"> ■ com.bea.netuix.servlets.controls.application.laf ■ com.bea.netuix.servlets.controls.application.laf.ConfigurationTools ■ com.bea.netuix.servlets.controls.application.laf.StructureTools ■ com.bea.netuix.servlets.controls.application.laf.DependenciesConfiguration ■ com.bea.netuix.servlets.controls.application.laf.SkeletonConfiguration |
| Framework - Customization | <p>com.bea.netuix.application</p> <p>Note: Supporting database query properties files are under <code>netuix/copysrc/com.bea.netuix.application.manager.persistence.jdbc.sql</code>.</p> |

Table 14–1 (Cont.) WLP Framework Classes That Support Debug

| Feature | Class |
|-------------------------------------|---|
| Framework - Async | <ul style="list-style-type: none"> <li data-bbox="537 260 630 287">■ ajax <ul style="list-style-type: none"> <li data-bbox="586 300 1214 327">Enable the ajax debug using the following code: <code>ajax: on</code> <li data-bbox="586 340 867 367">The ajax debug is used by: <ul style="list-style-type: none"> <li data-bbox="586 380 911 407">– <code>com.bea.netuix.nf.UIContext</code> <li data-bbox="586 420 1146 447">– <code>com.bea.netuix.nf.container.jsp.BufferedJspContext</code> <li data-bbox="586 459 1214 487">– <code>com.bea.netuix.nf.container.jsp.ServletOutputStreamImpl</code> <li data-bbox="586 499 1130 527">– <code>com.bea.netuix.servlets.controls.window.Window</code> <li data-bbox="537 539 1101 567">■ <code>com.bea.netuix.servlets.controls.ajax.AjaxHelper</code> <li data-bbox="537 579 716 606">■ ajaxRequest <ul style="list-style-type: none"> <li data-bbox="586 619 1398 646">Enable the ajaxRequest debug using the following code: <code>ajaxRequest: on</code> <li data-bbox="586 659 1398 686">The ajaxRequest debug is used by <code>com.bea.netuix.servlets.manager.UIServlet</code> <p data-bbox="537 699 1455 831">Note: Because debug output is highly verbose, you should use the <code>ajax</code> and <code>ajaxRequest</code> debug switches judiciously, enabling these switches only when told to do so by the users who will be interpreting the debug output. To gain a better understanding of the debug output, we recommend that you view the debug output along with the source code for the debug statements.</p> |
| Framework - Control Tree, Lifecycle | <ul style="list-style-type: none"> <li data-bbox="537 852 1235 879">■ <code>com.bea.netuix.servlets.manager.UIServlet.dumpControlTree</code> <li data-bbox="537 892 1122 919">■ <code>com.bea.netuix.servlets.manager.UIServletInternal</code> <ul style="list-style-type: none"> <li data-bbox="586 932 1455 1115">Note: The <code>com.bea.netuix.servlets.manager.UIServlet.dumpControlTree</code> switch is used in <code>com.bea.netuix.servlets.manager.UIServletInternal</code>, which does not have its own debug. Because debug output is highly verbose, you should use this switch judiciously, enabling this switch only when told to do so by the users who will be interpreting the debug output. To gain a better understanding of the debug output, we recommend that you view the debug output along with the source code of the debug statements. <li data-bbox="537 1127 1073 1155">■ <code>com.bea.netuix.servlets.manager.PortalServlet</code> <li data-bbox="537 1167 1114 1194">■ <code>com.bea.netuix.servlets.manager.SingleFileServlet</code> <li data-bbox="537 1207 1036 1234">■ <code>com.bea.netuix.servlets.manager.UIServlet</code> <li data-bbox="537 1247 873 1274">■ <code>com.bea.netuix.nf.Lifecycle</code> <li data-bbox="537 1287 984 1314">■ <code>com.bea.netuix.nf.ControlTreeWalker</code> <li data-bbox="537 1327 954 1354">■ <code>com.bea.netuix.nf.ControlLifecycle</code> <li data-bbox="537 1367 1146 1394">■ <code>com.bea.netuix.state</code> (and the classes in this package) <li data-bbox="537 1407 1105 1434">■ <code>com.bea.netuix.nf.state.StateManagementFactory</code> <li data-bbox="537 1446 954 1474">■ <code>com.bea.netuix.nf.ControlLifecycle</code> <ul style="list-style-type: none"> <li data-bbox="586 1486 1455 1539">The class <code>com.bea.netuix.nf.ControlLifecycle</code> uses the following debug switches to dump the control tree during a given render phase: <ul style="list-style-type: none"> <li data-bbox="586 1551 829 1579">– <code>ControlLifecycle.init</code> <li data-bbox="586 1591 889 1619">– <code>ControlLifecycle.loadState</code> <li data-bbox="586 1631 889 1659">– <code>ControlLifecycle.saveState</code> <li data-bbox="586 1671 902 1698">– <code>ControlLifecycle.preRender</code> <li data-bbox="586 1711 862 1738">– <code>ControlLifecycle.render</code> <li data-bbox="586 1751 899 1778">– <code>CControlLifecycle.resource</code> <li data-bbox="586 1791 873 1818">– <code>ControlLifecycle.dispose</code> |

Table 14–1 (Cont.) WLP Framework Classes That Support Debug

| Feature | Class |
|-------------------------|--|
| Framework - File Poller | <ul style="list-style-type: none"> ■ com.bea.netuix.servlets.util.IFilesystemChangeDetector ■ com.bea.netuix.servlets.services.P13nFilesystemChangeDetector ■ com.bea.netuix.servlets.services.SimpleFilesystemChangeDetector |
| Framework - Timing | netuix.timing |
| Framework - Events | <ul style="list-style-type: none"> ■ com.bea.netuix.events.internal ■ com.bea.netuix.events.manager.EventManager ■ com.bea.netuix.events.manager.PortletBasedSubscription |
| Framework - Preferences | <ul style="list-style-type: none"> ■ com.bea.portlet.prefs ■ com.bea.portlet.prefs.spi |

The following table lists WLP Framework features and the command line environmental JVM switches that you can use to debug them. Note that the WSRP security debugging feature uses a Oracle WebLogic Server pattern of accessing debug information with system properties.

Table 14–2 WLP Framework Command Line Environmental Switches That Support Debug

| Feature | Command Line Switch |
|-----------------|---|
| WSRP - Security | <ul style="list-style-type: none"> ■ -Dweblogic.debug.DebugSecuritySAMLcredMap=true ■ -Dweblogic.debug.DebugSecuritySAMLAtn=true ■ -Dweblogic.debug.DebugSecuritySAMLlib=true ■ -Dweblogic.log.StdoutSeverity=Debug ■ -Dweblogic.xml.crypto.dsig.verbose=true ■ -Dweblogic.wsee.verbose=* ■ -Dweblogic.debug.DebugSecurityCredMap=true ■ -Dweblogic.xml.crypto.wss.verbose=true |

14.3.2 WLP Core Services Classes with Debug Support

The following table lists the WLP Core Services classes that support debugging, along with their associated features and debug levels.

Note: For WLP Core Services classes, Level 2 output includes additional information that is not included in Level 1 output. To view all debugging information, you must enable both Level 1 and Level 2 debugging.

Table 14–3 WLP Core Services Classes That Support Debug

| Feature | Level 1 | Level 2 |
|------------------|---|---|
| Cache | <ul style="list-style-type: none"> com.bea.p13n.cache.CacheFactory com.bea.p13n.cache.CacheManager | <ul style="list-style-type: none"> com.bea.p13n.cache.CacheImpl com.bea.p13n.cache.CacheImpl.AsynchronousReloadRequest |
| Entitlements | <ul style="list-style-type: none"> com.bea.p13n.entitlements.management.RolePolicyManager <p>For the com.bea.p13n.entitlements.management.RolePolicyManager class, you can use the PolicyPredLocation to enable more detailed debug output. For example: PolicyPredLocation.com.bea.p13n.entitlements.management.RolePolicyManager.com.bea.p13n.entitlements.management.RolePolicyManager</p> <ul style="list-style-type: none"> com.bea.p13n.delegation.management.DelegationPolicyManager com.bea.p13n.entitlements.management.SecurityPolicyManager com.bea.p13n.delegation.management.DelegationRoleManager | <ul style="list-style-type: none"> com.bea.p13n.entitlements.Authorization <p>For the com.bea.p13n.entitlements.Authorization class, you can use the following prefixes to choose the type of debug output:</p> <ul style="list-style-type: none"> – Unprotected – Protected – PolicyTaxonomy – AnonDebug <p>For example: Unprotected.com.bea.p13n.entitlements.Authorization</p> <ul style="list-style-type: none"> com.bea.p13n.delegation.DelegationService com.bea.p13n.entitlements.management.internal.RDBMSRolePolicyManager <p>You can use the following prefixes to choose the type of debug output:</p> <ul style="list-style-type: none"> – PolicyPredLocation – PolicyCreateLocation <ul style="list-style-type: none"> com.bea.p13n.entitlements.management.internal.RDBMSSecurityPolicyManager <p>You can use the following prefixes to choose the type of debug output:</p> <ul style="list-style-type: none"> – PolicyPredLocation – PolicyCreateLocation |
| Rules Expression | N/A | <ul style="list-style-type: none"> com.bea.p13n.expression.internal.EvaluatorImpl com.bea.p13n.expression.internal.ExecutorImpl |
| Job Manager | <ul style="list-style-type: none"> com.bea.p13n.jobmanager.internal.JobManagerImpl com.bea.p13n.jobmanager.internal.JobContextImpl | N/A |
| Quiescence | com.bea.p13n.management.quiescence.QuiescenceManagementServiceImpl | <ul style="list-style-type: none"> com.bea.p13n.management.quiescence.QuiescenceRuntimeServiceImpl com.bea.p13n.management.quiescence.QuiescenceStateImpl |
| Rules | N/A | <ul style="list-style-type: none"> com.bea.p13n.rules.internal.ActionImpl com.bea.p13n.rules.internal.RuleImpl |
| Credential Vault | N/A | N/A |
| SSO | com.bea.p13n.security.sso.services.AuthServletFilter | com.bea.p13n.security.sso.services.UsernameTokenService |
| Util JDBC | com.bea.p13n.util.jdbc.SequencerFactory | com.bea.p13n.util.jdbc.internal.JdbcSequencer |

Table 14–3 (Cont.) WLP Core Services Classes That Support Debug

| Feature | Level 1 | Level 2 |
|-----------------------------|--|--|
| Tracked Anonymous | com.bea.p13n.usermgmt.profile.internal.TrackedAnonymousLocator | <ul style="list-style-type: none"> ■ com.bea.p13n.usermgmt.profile.internal.AnonymousProfileWrapperImpl ■ com.bea.p13n.usermgmt.profile.internal.TrackedAnonymousBean |
| PropertySetManager | <ul style="list-style-type: none"> ■ com.bea.p13n.property.internal.PropertySetManagerImpl ■ com.bea.p13n.property.internal.PropertySetPersistenceManager | <ul style="list-style-type: none"> ■ com.bea.p13n.property.internal.PropertySetRepositoryRegistry ■ com.bea.p13n.property.internal.PropertySetRepositoryImpl |
| Entity Property Manager | com.bea.p13n.property.internal.EntityPropertyManagerImpl | com.bea.p13n.property.internal.EntityPropertyCacheImpl |
| Property Set Web Service | com.bea.p13n.property.webservice.internal.PropertySetWebServiceImpl | N/A |
| Rules Manager | com.bea.p13n.rules.manager.internal.RulesManagerImpl | com.bea.p13n.rules.manager.internal.RuleSetPersistenceManager |
| Realm Configuration | com.bea.p13n.usermgmt.config.internal.RealmConfigurationImpl | N/A |
| User Profile Manager | com.bea.p13n.usermgmt.profile.internal.ProfileManagerImpl | N/A |
| Group Profile Manager | com.bea.p13n.usermgmt.profile.internal.GroupProfileManagerImpl | N/A |
| Mixed Profile Manager | com.bea.p13n.usermgmt.profile.internal.MixedProfileManagerImpl | N/A |
| Custom Profile Manager | com.bea.p13n.usermgmt.profile.internal.CustomProfileManagerImpl | N/A |
| Event Service | <ul style="list-style-type: none"> ■ com.bea.p13n.events.internal.EventServiceBean ■ com.bea.p13n.events.internal.EventHandler | <ul style="list-style-type: none"> ■ com.bea.p13n.events.Event ■ com.bea.p13n.events.internal.EventServiceListenerConfig |
| Internal Data Refresh Proxy | <ul style="list-style-type: none"> ■ com.bea.p13n.management.data.repository.internal.ejbproxy.RefreshProxyImpl ■ com.bea.p13n.management.data.repository.internal.ejbproxy.EjbProxyDataRepository | <ul style="list-style-type: none"> ■ com.bea.p13n.management.data.repository.internal.RefreshFromClientSynchronizer ■ com.bea.p13n.management.data.repository.internal.RefreshFromServerSynchronizer |
| Analytics | <ul style="list-style-type: none"> ■ com.bea.analytics.AnalyticsFilter ■ com.bea.analytics.AnalyticsListener | com.bea.analytics.AnalyticsP13nEventListener |

14.3.3 WLP Virtual Content Repository Classes with Debug Support

The following table lists the WLP Virtual Content Repository classes that support debugging and their associated features.

Note: For WLP Virtual Content Repository classes, Level 2 output includes all of the information included in Level 1, but at a more verbose level. Additionally, Level 2 includes information that is not included in Level 1 output.

Table 14–4 WLP Virtual Content Repository Classes That Support Debug

| Feature or Component | Level 1 | Level 2 |
|--------------------------------------|---|---|
| Repository Capabilities | com.bea.content.federated.internal.CapabilityManagerImpl | N/A |
| Node Activities | com.bea.content.federated.internal.NodeManagerImpl | N/A |
| Search Activities | com.bea.content.federated.internal.SearchManagerImpl | N/A |
| Type Management Activities | com.bea.content.federated.internal.TypeManagerImpl | N/A |
| Versioning Activities | com.bea.content.federated.internal.VersionManagerImpl | N/A |
| Repository Management Activities | com.bea.content.federated.internal.VirtualRepositoryManagerImpl | N/A |
| Workflow Activities | com.bea.content.federated.internal.WorkflowManagerImpl | N/A |
| Node activities | com.bea.content.federated.internal.delete.NodeLogic | N/A |
| Type Management Activities | com.bea.content.federated.internal.delete.ObjectClassLogic | N/A |
| Repository Management Activities | com.bea.content.federated.internal.delete.RepositoryLogic | N/A |
| Search activities | com.bea.content.federated.internal.delete.SearchLogic | N/A |
| Versioning Activities | com.bea.content.federated.internal.delete.VersionLogic | N/A |
| Workflow Activities | com.bea.content.federated.internal.delete.WorkflowLogic | N/A |
| SPI Node Operations | N/A | spi.com.bea.content.federated.internal.filter.logging.NO PSLoggingFilter |
| SPI Type Operations | N/A | spi.com.bea.content.federated.internal.filter.logging.OC OPSLoggingFilter |
| SPI Repository Management Operations | N/A | spi.com.bea.content.federated.internal.filter.logging.RC OPSLoggingFilter |
| SPI Search Operations | N/A | spi.com.bea.content.federated.internal.filter.logging.SOP SLoggingFilter |
| SPI Workflow Operations | N/A | spi.com.bea.content.federated.internal.filter.logging.WO PSLoggingFilter |

14.3.4 WLP Oracle WebCenter Content Classes with Debug Support

The following table lists the Oracle WebCenter Content related classes that support debugging and their associated features.

Table 14–5 WLP WebCenter Content Related Classes That Support Debug

| Feature or Component | Level 3 |
|---|--|
| Shows WebCenter Content calls, including timing information | request.com.oracle.content.spi.ucm.UCMBridge |
| Shows stack traces when calls are made to WebCenter Content (would typically be used in conjunction with the other one) | requesttrace.com.oracle.content.spi.ucm.UCMBridge |
| Debug timing | timing.com.bea.content.federated.internal.filter.logging.* |

14.3.5 WLP Administration Console Classes with Debug Support

The following table lists the WLP Administration Console classes that support debugging, along with their associated features and debug levels.

Table 14–6 WLP Administration Console Classes That Support Debug

| Feature | Level 1 | Level 2 |
|---|---|---|
| General Navigation, Menus, and Componentization | <ul style="list-style-type: none"> ■ com.bea.jsptools.common.EditorBookBacking ■ com.bea.jsptools.common.ToolsFrameworkUtilities ■ com.bea.jsptools.common.ToolsMenuTag ■ com.bea.jsptools.patterns.list.PagedResultServiceTag ■ com.bea.jsptools.patterns.tree.TreeBuilder ■ com.bea.jsptools.patterns.xmlhttp.PagedResultSearchHandler ■ com.bea.jsptools.patterns.xmlhttp.SessionAttributeHandler ■ com.bea.jsptools.util.GenerateResourceLinkTag ■ com.bea.jsptools.util.ToolsResourceLink | <ul style="list-style-type: none"> ■ com.bea.jsptools.common.PatDesktopBacking ■ com.bea.jsptools.content.helpers.SharedActions ■ com.bea.jsptools.laf.SkinImageService ■ com.bea.jsptools.patterns.item.ItemService ■ com.bea.jsptools.patterns.xmlhttp.TextBoxValidationHandler ■ com.bea.jsptools.util.PagedResultUtility ■ com.bea.portal.tools.patterns.ajax.servlet.XMLHttpRequestServlet ■ com.bea.portal.tools.resource.ResourceIDBuilderCache ■ global.internal.PageFlowHelper ■ util.tree.TreeController |
| Help | N/A | <ul style="list-style-type: none"> ■ com.bea.jsptools.patterns.help.HelpLinkTag ■ com.bea.jsptools.patterns.help.HelpService ■ com.bea.jsptools.patterns.help.HelpTag |
| Portal Management | com.bea.jsptools.portal.helpers.PortletHelper | <ul style="list-style-type: none"> ■ com.bea.jsptools.common.PagePositionHelper ■ com.bea.jsptools.portal.helpers.DotPortal ■ com.bea.visitortools.MenuContext ■ portalTools.definitions.portletProducers.wizard.AddProducerWizardController ■ portalTools.instances.communities.wizzy.AddCommunityWizardController ■ portalTools.instances.desktops.wizzy.AddDesktopWizardController ■ portalTools.instances.portlets.preferences.PreferencesController ■ portalTools.instances.templates.desktops.browse.BrowseTemplatesDesktopController |

Table 14–6 (Cont.) WLP Administration Console Classes That Support Debug

| Feature | Level 1 | Level 2 |
|--------------------------|---|--|
| Content Management | N/A | com.bea.jsptools.content.ContentTreeBuilder |
| Role Editor | N/A | roleTools.expressions.RoleExpressionsController |
| Delegated Administration | <ul style="list-style-type: none"> ■ com.bea.jsptools.deladmin.IsAccessAllowedTag ■ com.bea.jsptools.deladmin.SharedDataActions | <ul style="list-style-type: none"> ■ com.bea.portal.tools.portal.util.SecurityPolicyCleanupHelper ■ daTools.common.DAController ■ daTools.details.DaRoleDetailsController ■ daTools.popupsAndButtons.DaPopupButtonController |
| Entitlements | <ul style="list-style-type: none"> ■ com.bea.jsptools.vent.EntitlementService ■ com.bea.jsptools.vent.helpers.VentSharedActions ■ com.bea.portal.tools.entitlements.controls.DelegatedRolePolicyManagerControlFacadeImpl | ventTools.policies.VentBrowsePoliciesController |

Table 14–6 (Cont.) WLP Administration Console Classes That Support Debug

| Feature | Level 1 | Level 2 |
|------------------------|---|--|
| User/Group Management | <ul style="list-style-type: none"> ■ com.bea.jsptools.usermgmt.AtnProviderListTag ■ com.bea.jsptools.usermgmt.GroupDescriptionTag ■ com.bea.jsptools.usermgmt.UserDescriptionTag ■ com.bea.jsptools.usermgmt.helpers.GroupHelper ■ com.bea.jsptools.usermgmt.helpers.SharedActions | <ul style="list-style-type: none"> ■ com.bea.jsptools.usermgmt.UGMTreeBacking ■ com.bea.jsptools.usermgmt.validation.NRNWGroupNameValidator ■ com.bea.jsptools.usermgmt.validation.NRNWUserNameValidator ■ ugmTools.nrnwTree.NrnwTreeController |
| Service Administration | com.bea.jsptools.serviceadmin.wsrp.importTool.ImportProcessor | <ul style="list-style-type: none"> ■ serverTools.serviceAdmin.ads.AdServiceBaseFlowController ■ serverTools.serviceAdmin.maintenanceMode.MaintenanceModeDetailsFlow.MaintenanceModeDetailsFlowController |
| Visitor Tools | <ul style="list-style-type: none"> ■ com.bea.visitortools.helpers.CreateCommunityHelper ■ com.bea.visitortools.invitation.AbstractInviterInvoker | <ul style="list-style-type: none"> ■ com.bea.visitortools.VisitorStateBean ■ com.bea.visitortools.backing.VisitorDesktopBacking ■ com.bea.visitortools.forms.CreateVisitorCommunityForm ■ com.bea.visitortools.helpers.BaseHelper ■ com.bea.visitortools.helpers.ColorsHelper ■ com.bea.visitortools.helpers.ManageCommunityHelper ■ com.bea.visitortools.tags.GeneratePlaceableViewDataTag ■ com.bea.visitortools.tags.IsAccessAllowedTag ■ visitorTools.communities.manage.ManageController ■ visitorTools.communities.manage.members.MembersController ■ visitorTools.communities.manage.properties.PropertiesController ■ visitorTools.contents.ContentsController ■ visitorTools.pages.PagesController |

Part III

Staging

Oracle recommends that you deploy your portal to a staging environment where it can be assembled and tested before going live. In the staging environment, you use the WebLogic Portal Administration Console to assemble and configure desktops. You also test your portal in a staging environment before propagating it to a live production system. In the testing aspect of the staging phase, there is tight iteration between staging and development until the application is ready to be released.

Part III contains the following chapters:

- [Chapter 15, "Managing Portal Desktops"](#)
- [Chapter 16, "Deploying Portals to Production"](#)

Managing Portal Desktops

You perform the tasks described in this chapter to prepare your portal application for public consumption.

From an administrative standpoint, a portal is a container that defines a portal application. When you create a new portal in the administration portal, you are really creating an empty portal to hold different versions of the portal (desktops) that can be targeted to specific users. A portal can contain one or more desktops, or views, of a portal. It is the desktops to which you add the portal resources and navigation such as books, pages, and portlets that make a dynamic portal.

After you assemble the desktops, you can test the application as a whole, and then deploy it to the production environment when it is ready for public access. For detailed instructions on how to progress through the stages of portal development and deployment, refer to the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

The primary tool used in this chapter is the WebLogic Portal Administration Console.

This chapter contains the following sections:

- [Section 15.1, "Administration Console Overview"](#)
- [Section 15.2, "Administration Console Library of Resources"](#)
- [Section 15.3, "Starting and Logging In to the Administration Console"](#)
- [Section 15.4, "Overview of Library Administration"](#)
- [Section 15.5, "Overview of Portal Administration"](#)
- [Section 15.6, "Portal Management"](#)
- [Section 15.7, "Overview of the Library"](#)
- [Section 15.8, "Desktop Templates"](#)
- [Section 15.9, "Communities"](#)
- [Section 15.10, "Portal Resources"](#)
- [Section 15.11, "Portals"](#)
- [Section 15.12, "Desktops"](#)
- [Section 15.13, "Books"](#)
- [Section 15.14, "Pages"](#)
- [Section 15.15, "Portlets"](#)
- [Section 15.16, "Portlet Preferences"](#)

- [Section 15.17, "Portlet Categories"](#)
- [Section 15.18, "Look And Feels"](#)
- [Section 15.19, "Shells"](#)
- [Section 15.20, "Themes"](#)
- [Section 15.21, "Menus \(Navigation\)"](#)
- [Section 15.22, "Layouts"](#)

15.1 Administration Console Overview

The WebLogic Portal Administration Console is the tool that portal administrators use to not only control the behavior, content, and appearance of portals, but to perform many traditional system administration activities such as user management and security management.

The WebLogic Portal Administration Console is organized according to the following categories of tasks:

- **Portal Management** – Portals, desktops, books, pages, portlets, and other portal resources.

This guide and the *Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal* provide details about Portal Management tasks.

- **User, Groups, & Roles** – User and group management, security provider configuration, Delegated Administration, and Visitor Entitlements.

The *Oracle Fusion Middleware User Management Guide for Oracle WebLogic Portal* and *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal* provides detailed information about the tasks in this category.

- **Configuration Settings** – Server settings for Cache Management, Server Maintenance Mode, Personalization, Security, Unified User Profiles, and WSRP.

This guide, *Oracle Fusion Middleware Security Guide for Oracle WebLogic Portal*, *Oracle Fusion Middleware Federated Portals Guide for Oracle WebLogic Portal*, *Oracle Fusion Middleware Interaction Management Guide for Oracle WebLogic Portal*, and *Oracle Fusion Middleware User Management Guide for Oracle WebLogic Portal* provide detailed information about the tasks in this category.

- **Interaction Management** – Campaigns, placeholders, user segments, and content selectors.

The *Oracle Fusion Middleware Interaction Management Guide for Oracle WebLogic Portal* provides detailed information about the tasks in this category.

- **Content Management** – Content and repositories.

- The *Oracle Fusion Middleware Content Management Guide for Oracle WebLogic Portal* provides detailed information about the tasks in this category.

15.2 Administration Console Library of Resources

When you create a new desktop using the Administration Console, you can use an existing portal template. Using a template means that you take the portal resources for your desktop directly from a `.portal` file that was created in Oracle Enterprise Pack for Eclipse. (The `.portal` file is also called the primary instance.) When you create a desktop, the portal assets are removed from the `.portal` file, placed in a database, and surfaced in both the Library and desktop trees of the Administration Console.

Taking the assets from a new desktop instance and placing them in the Library is called disassembling.

At this point, the assets (books, pages, and so on) in the Library (Library instances) are hierarchically related to their corresponding desktop instances. A change to a Library resource, such as a name change, is automatically inherited by the corresponding desktop asset. On the other hand, a change to the desktop asset is not reflected back up the hierarchy.

Note: Changes made to assets are never "reverse inherited" up the hierarchy. A change to a desktop asset is never inherited by its corresponding Library instance. Likewise, a change to a Visitor instance is never inherited by a desktop or Library instance.

New books and pages that you create in a desktop are not disassembled—they are considered to be private to that desktop.

Plan your implementation to make the best use of this Oracle WebLogic Portal functionality. Refer to the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal* for more details about disassembling and decoupling of resources in the Administration Console.

15.3 Starting and Logging In to the Administration Console

This section explains how to open and log in to the administration console.

15.3.1 Opening the Administration Console

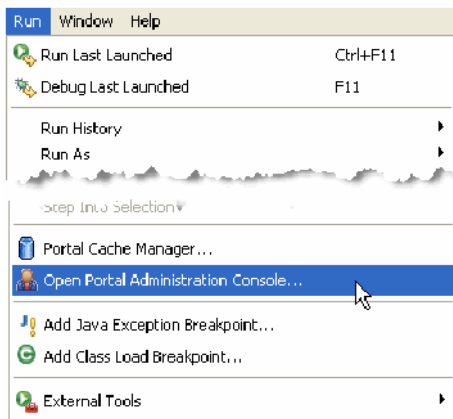
Before you can begin using the WebLogic Portal Administration Console, the server must be running. Depending on the state of your Oracle Enterprise Pack for Eclipse workbench, you might need to start the server before opening the Administration Console.

Follow these steps:

1. Start Oracle Enterprise Pack for Eclipse and open a workspace:
2. In the Servers view, click the server to select it.
3. Click Start in the Servers view toolbar.

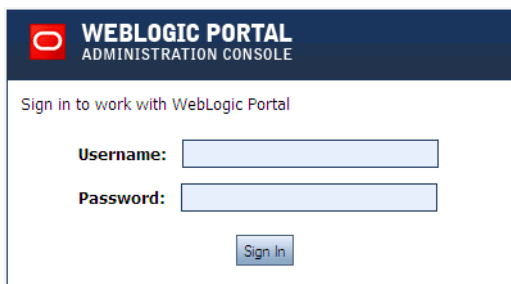
Wait while Oracle Enterprise Pack for Eclipse starts the server. This process might take some time, depending on the speed of your system. When the process completes, the Status column in the Servers view displays Started and the square **Stop the Server** button becomes active.

4. In the Package Explorer view, select the `.portal` file for the portal you want to manage with the Administration Console.
5. From the main menu, select **Run > Open Portal Administration Console**, as shown in the example in [Figure 15-1](#).

Figure 15–1 Menu Selection for Run > Open Portal Administration Console

The Administration Console window opens in a new tab in the workbench editor view, with the login dialog displayed, as [Figure 15–2](#) shows.

Note: If you set up your Oracle Enterprise Pack for Eclipse preferences to open external browsers instead of the internal browser, a separate window opens to display the Administration Console login dialog.

Figure 15–2 WebLogic Portal Administration Console Login Dialog

15.3.2 Logging In to the Administration Console

The Administration Console login dialog requires a WebLogic Server system administrator or a WebLogic Portal administrator user name and password. WebLogic Server system administrators have full security privileges for the entire domain and can log in to and use the WebLogic Server Administration Console tools. WebLogic Portal administrators have full security privileges for a Portal Web Project, which can include multiple portals.

To log in to the WebLogic Portal Administration Console:

1. Type the appropriate user name and password into the dialog and click **Sign In**.

Note: Any valid Administration Console user must be a member of the PortalSystemAdministrators group, which is created by default with the domain. A WebLogic Server System Administrator creates these users with either the WebLogic Server Administration Console or the WLP Administration Console.

The main menu of the Administration Console displays.

2. To get a better view of the console and its functions, click **Maximize** in the editor view toolbar. Your display should look like the example in [Figure 15–3](#).

Note: If you set up your Oracle Enterprise Pack for Eclipse preferences to open external browsers instead of the internal browser, you do not need to perform this step.

Figure 15–3 Administration Console Main Page, Maximized



15.4 Overview of Library Administration

In some cases, changes to a definition in the library can be propagated to deployed portal resources. The portal library is the repository for portal components, including the following:

- Shells
- Themes
- Menus
- Books
- Pages
- Layouts
- Look And Feels
- Portlets
- Portlet Categories
- Portlet Producers

As the Library Administrator, you can modify the definitions in the Resource library. These modifications are global in scope and carry with them a higher degree of

administration responsibility. When you create new portal instances of portal resources and put them in the Portal Library, they have the following characteristics:

- Your resource show up in the Portal Library so that portal administrators can create instances of them to use as templates.
- Your resource can be localized.
- Your resource can be entitled at the enterprise application level. This means that when these resources are entitled, they are entitled for every instance.
- Visitors can add these resources to their personal views of a portal using the Visitor Tools because they can choose them from the Library.
- If an administrator or visitor deletes this resource from a portal, the resource can easily be retrieved from the Library.

15.5 Overview of Portal Administration

Portal administrators work with portal resources to assemble portals and entitle parts of the portal to end users and other administrators. A portal represents a Web site that can be one of many within an Enterprise Application. Each portal can support multiple desktops using shared components. The administration of the portals, desktops, and components can be delegated to the distinct administrators who have the correct Delegated Administration privileges.

You can assemble your portal using portal resources that exist in the Portal Library, or in some cases you can create your own resources. If you create portal resources outside of the Portal library, you are creating "one-off" versions that have the following restrictions:

- Your resource do not show up in the Portal Library
- Your resource cannot have entitlements that are scoped to the enterprise applications. You can entitle your resource to your Desktop level.
- Visitors are not able to add these resources to their personal views of a portal using the Visitor Tools because they are not available in the Library.
- If you delete this resource, it is permanently deleted since no version of it exists in the Library.

15.6 Portal Management

Portal administrators work with portal resources to assemble portals and entitle parts of the portal to end users and other administrators. A portal represents a web site that can be one of many within an enterprise application. Each portal can support multiple desktops using shared components. You can delegate the administration of the portals, desktops, and components to administrators who have the appropriate Delegated Administration privileges.

15.7 Overview of the Library

The portal library is the repository for portal components. The definitions in the library are used as templates for portal administrators to create and assemble portals and desktops for end users. In order to have access to the library, you must have delegated administration rights to its resources.

15.8 Desktop Templates

A desktop template is a pre-defined set of portal resources that you can use to quickly build a desktop.

15.8.1 Creating a Desktop Template

You can create a desktop template in either of these ways: select available resources in the Library and provide additional desktop properties, or select an existing `.portal` file on which to base the template.

To create a desktop template:

1. In the Portal Resources tree, select Portals and navigate to the portal for which you want to create the desktop.
2. Navigate to **Templates > Desktop Templates**.
3. In the Browse tab, click **Create Desktop Template**. The Create Desktop Template wizard displays.
4. Complete the first page of the wizard by selecting how you want to create a desktop template:
 - Select resources in the Library: You can choose the primary book, shell, and Look And Feel for your desktop from available resources and provide additional desktop properties.
 - Select a `.portal` file: You can select from a list of `.portal` files in the current web application, and provide additional desktop properties.
5. Click **Next**. The information you need to enter on the remaining pages of the wizard vary according to the selection you made in the first page. Use the following table as a guide.

| Action | Description |
|------------------------------------|--|
| Select resources in the Library | <p>You can either search for an existing book or create a new one. To use an existing book, you can search for a primary book by entering a search string and clicking Search, or display all books by clicking Show All. If you choose to create a new book, enter a Book Name (required), and a Description and Menu option if desired.</p> <p>Enter additional template properties, including Title, Description, and Desktop Template Resources. If you want to add this template to the Library, select the check box.</p> <p>Click Create Template, or review the summary of properties by clicking Review Properties and then click Create Template.</p> <p>Click Finish.</p> |
| Select a <code>.portal</code> file | <p>Either search for a <code>.portal</code> file by entering a search string and clicking Search, or display all <code>.portal</code> files by clicking Show All.</p> <p>Select a <code>.portal</code> file in the list.</p> <p>Click Next.</p> <p>Enter the desired desktop properties, including Title, Description, and Desktop Template Resources. If you want to add this template to the Library, select the check box.</p> <p>Click Create Template, or review the summary of properties by clicking Review Properties and then click Create Template.</p> <p>Click Finish.</p> |

15.8.2 Modifying Desktop Template Properties

You can modify some desktop template properties from the Details tab. You can also edit the title, description, and locale information from the Title & Description tab, as described below.

To modify desktop template properties, perform these steps:

1. In the Portal Resources tree, expand the Library node or the Portals node and select a desktop template.
2. If you are starting this task from the Library node, click Edit this Template.
3. From the Details tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|---|--|
| Title and Description: Change title and description of the template in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |
| Title and Description: Add a localized title for the portlet | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Edit Appearance | <p>Click Edit Appearance; the Update Desktop dialog displays.</p> <p>In the Default Shell drop-down menu, select a shell.</p> <p>In the Look and Feel drop-down menu, select a Look And Feel.</p> <p>In the Primary Book drop-down menu, select a book as the primary book for the template.</p> <p>Click Update.</p> |
| Edit Primary Book Contents | <p>Click Edit Primary Book Contents; the Browse Contents tab displays.</p> <p>Click Add Contents.</p> <p>Follow the instructions in Managing Book Content.</p> |
| Advanced Properties | <p>Click Advanced Properties.</p> <p>In the Enable Tree Optimization drop-down menu, select True or False.</p> <p>To disable ScrollToWindow, select False. (This feature is enabled by default.) When this feature is enabled, on each request to the desktop, the browser window will scroll down to the portlet that caused the request to the server. For example, if your portlet is low on the browser page (where you have to use the browser scroll bar to see the portlet), and you submit a form in the portlet, when the resulting page renders, the browser automatically scrolls to that portlet.</p> <p>To indicate which Asynchronous Mode to use, select Enabled, Disabled, or compatibility mode.</p> |

15.9 Communities

Communities are WebLogic Portal desktops that let users with common goals and interests work together in—and manage—their own web-based portal environment. Whether for specific events, work groups, partners, or for any other groups that need

to share information, communities provide a dedicated, secure, self-managed place to collaborate.

For more information, refer to the *Oracle Fusion Middleware Communities Guide for Oracle WebLogic Portal*.

15.10 Portal Resources

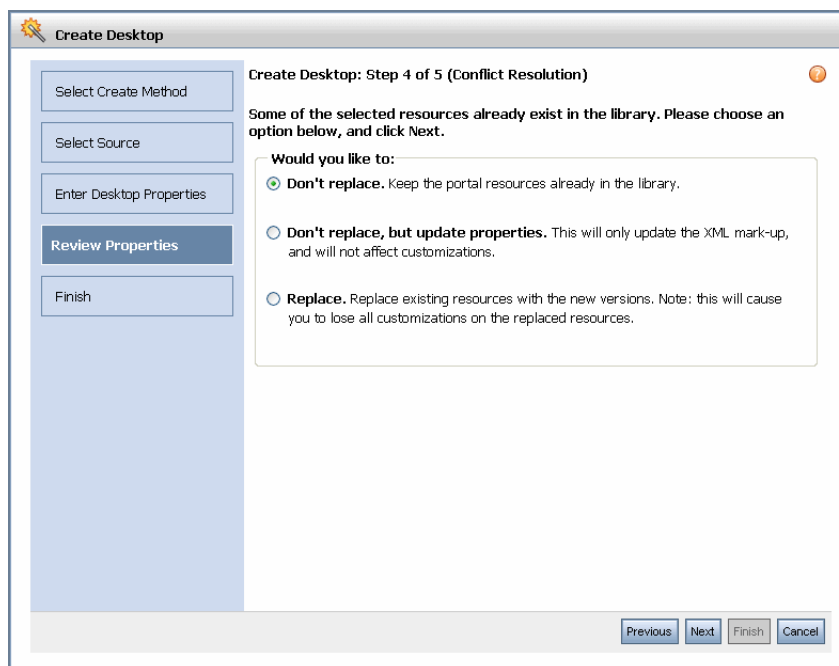
A portal is a web application that provides a unified user interface to aggregated content and integrated applications. When you "create a portal" using the tools in the WebLogic Portal Administration Console, you are essentially creating a "container" for desktops, which represent customized views of the portal. To the desktops you add other portal resources such as books, pages, and portlets. You can then entitle these desktops and resources for specific users.

15.10.1 Updating Portal Resources

When you create a desktop using a template (.portal file) in WebLogic Portal Administration Console, each resource of that desktop (such as books, pages, and portlets) has a Definition Label that serves as a unique ID for that component in the database.

If you create a new desktop using a template that contains portal resources with Definition Labels that are identical to resources already stored in the database, a dialog similar to the following displays:

Figure 15–4 Conflict Resolution Dialog



Use the following information for guidance in updating portal resources when you receive this warning:

Table 15–1 Updating Portal Resources - Conflict Resolution Options

| Option | Description |
|--------------------------------------|---|
| Don't replace | Ignores the resources in the template and leaves the database version of the resources intact, including any user customizations that have been made. |
| Don't replace, but update properties | Uses the template to replace the database version of all conflicting resources and adds new, non-conflicting resources to the database. |
| Replace | Keeps user customizations but allows replacement of resource XML markup; for example, a change in a portlet's modes or a change in a portlet's Content URI. |

If you want to replace specific portal resources, use Oracle Enterprise Pack for Eclipse to create a "dummy" `.portal` file containing the portal resources that you want to update (portal components with the Definition Labels you want to update in the database), use the Administration Console to create a new desktop using that template, and select the appropriate "Replace" option in the dialog that appears.

15.10.2 Viewing Resources for a Portal Web Application (Update WebApp)

To change the "active" portal web application so that you can work with a different web application's resources, perform these steps:

1. Above the Portal Resources tree, click **Update WebApp**. The Update Current WebApp dialog displays.
2. Use a search string to find web applications, or click **Show All** to display all web applications.
3. Select a web application and click **Save**.

15.10.3 Deleting a Portal Resource

As a portal resource librarian, you can delete certain portal resources from the library, or remove them from a desktop (which does not delete them from the library).

Resources that can be deleted include: pages, books, portlets (only those created using the Administration Console), and portlet categories.

To delete a portal resource:

1. In the Portal Resources tree, select the type of resource that you want to delete. A list of elements in that category is displayed.
2. To delete an element from the library, select the check box for any elements that you want to delete, and click **Delete**. The items are deleted and removed from the list.

If you try to delete an element from the library that is being used within a desktop, a warning dialog displays. You can choose either to delete the element and any referencing instances, or cancel the deletion task.

3. To delete an element from a desktop, select the check box for any elements that you want to delete, and click **Remove**. The items are removed from the list.

15.10.4 Localizing a Portal Resource

You use the WebLogic Portal Administration Console to localize individual portal resources so that they render in different languages. When you assign a language to a portal resource, you assign the preferred language to the name of that resource.

Resources localized in the portal library will be propagated through the portals in which they are used.

If the end user's browser supports the selected language, the portal resource is rendered in that language. If the end user's browser does not support that language, the system works through a list of available languages until it finds one that is supported in both your portal and the end user's browser.

Perform these steps:

1. In the Portal Resources tree, expand the Library node to find the resource that you want to localize; for example:
 - Theme
 - Book
 - Page
 - Layout
 - Look And Feel
 - Portlet
2. Select the **Title & Description** tab for the resource.
3. Click **Add Localized Title**.
4. Complete the data entry fields for the Language, Title, and other fields as applicable.
5. Click **Create**.

Note: For information about localization standards, see <http://java.sun.com/j2se/1.3/110n-notes.html>.

15.11 Portals

From an end user perspective, a portal is a web site with pages that are organized by tabs or some other form of navigation. Each page contains a nesting of sub-pages, and one or more portlets—individual windows that display anything from static HTML content to complex web services. A page can contain multiple portlets, giving users access to different information and tools in a single place. Users can also customize their view of a portal by adding their own pages, adding portlets of their choosing, and changing the Look And Feel of the interface.

Technically, a portal is a container of resources and functionality that can be made available to end users. These portal views, which are called desktops in Oracle WebLogic Portal, provide the uniform resource location (URL) that users access. A portal presents diverse content and applications to users through a consistent, unified web-based interface. Portal administrators and users can customize portals, and content can be presented based on user preferences or rule-based personalization. Each portal is associated with a web application that contains all of the resources required to run portals on the web.

15.11.1 Creating a Portal

When you create a new portal, you are creating an empty portal "container" into which you can add as many desktops (versions of the portal) as you need. You can then

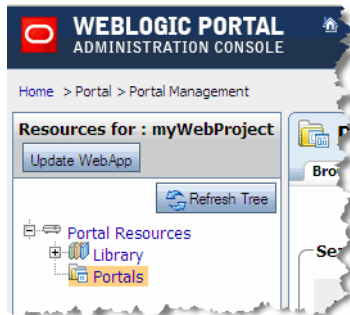
entitle specific users with access to the desktops. Each portal is associated with a web application that contains all of the resources required to run the portal on the web.

To create a portal, follow these steps:

1. Click the **Portal Management** menu shortcut on the Administration Console home page.

The Portal Management page displays; the Portal Resources tree displays in the left pane of the page, as shown in [Figure 15-5](#).

Figure 15-5 Portal Resources Tree in the Administration Console



Notice that the display is based on the portal that you selected before you opened the Administration Console. If you expand the **Library > Portlets** portion of the tree, you can see any portlets that exist for that portal.

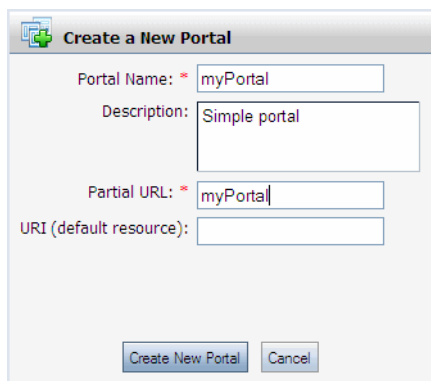
2. Click **Portals** in the tree.

The Portals page displays, with the Browse Portals tab active. If no portals exist yet, the table containing portals is empty.

3. Click **Create New Portal**.

The Create a New Portal dialog displays, [Figure 15-6](#) shows an example.

Figure 15-6 Create a New Portal Dialog in Administration Console



4. Enter values for the portal properties.

5. Click **Create New Portal**.

When the Portals page displays again, the Browse Portals table includes the portal you created, and the Portal Resources tree includes the new portal.

6. You can click the portal name in the Browse Portals table to view the details for this portal.

The Portals page displays, with the Browse Desktops tab active. Because no desktops exist yet, the table containing desktops is empty.

You can now add desktops to your portal.

15.11.2 Modifying Portal Properties

You can modify some portal properties from the Details tab. You can also edit the title, description, and locale information from the Title & Description tab, as described below.

To modify portal properties:

1. In the Portal Resources tree, expand the Portals node and select a portal.
2. From the Details tab, select the type of property that you want to change. Use the table below as a guide.

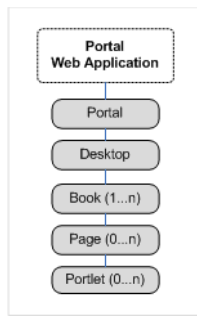
Table 15–2 *Modifying Portal Properties in the Administration Console*

| Option | Description |
|--|--|
| Change title and description of the portal in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |
| Add a localized title for the portal | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Portal Location | <p>Click Portal Location; the Update URI dialog displays.</p> <p>Enter the URI for the portal.</p> <p>Click Update.</p> <p>You can view the portal if desired by clicking View Portal.</p> |

15.12 Desktops

A desktop is a view of the portal that a visitor accesses. A portal is effectively a container for its desktops. A desktop contains all the portlets, content, and Look And Feel elements necessary to create individual user views of a portal.

A hierarchy summary is shown in the following figure:

Figure 15–7 Desktop Hierarchy Summary

You can create one or more desktops for a portal, and tailor each desktop for a target audience.

Note: Book and page resources are often created by developers in Oracle Enterprise Pack for Eclipse. In order to make these resources visible in the library, you must create a desktop in the WebLogic Portal Administration Console using the portal created in Oracle Enterprise Pack for Eclipse as the template. For example, if a developer creates book and page resources in a portal called TestPortal in Oracle Enterprise Pack for Eclipse, you must create a new desktop and select TestPortal as your template for the desktop.

15.12.1 Creating a Desktop

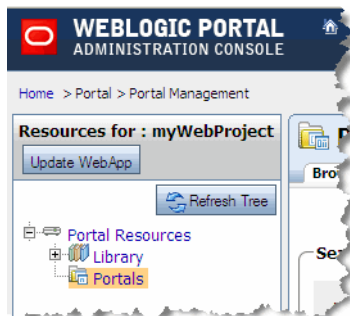
You can create desktops in one of these ways: use a desktop template, select existing resources from the Library, or base the desktop on an existing `.portal` file.

Before you create a desktop, you must already have created a portal to contain it.

To create a desktop:

1. Click the **Portal Management** menu shortcut on the Administration Console home page.

The Portal Management page displays; the Portal Resources tree displays in the left pane of the page, as shown in [Figure 15–8](#).

Figure 15–8 Portal Resources Tree in the Administration Console

Notice that the display is based on the portal that you selected before you opened the Administration Console. If you expand the **Library > Portlets** portion of the tree, you can see any portlets that exist for that portal.

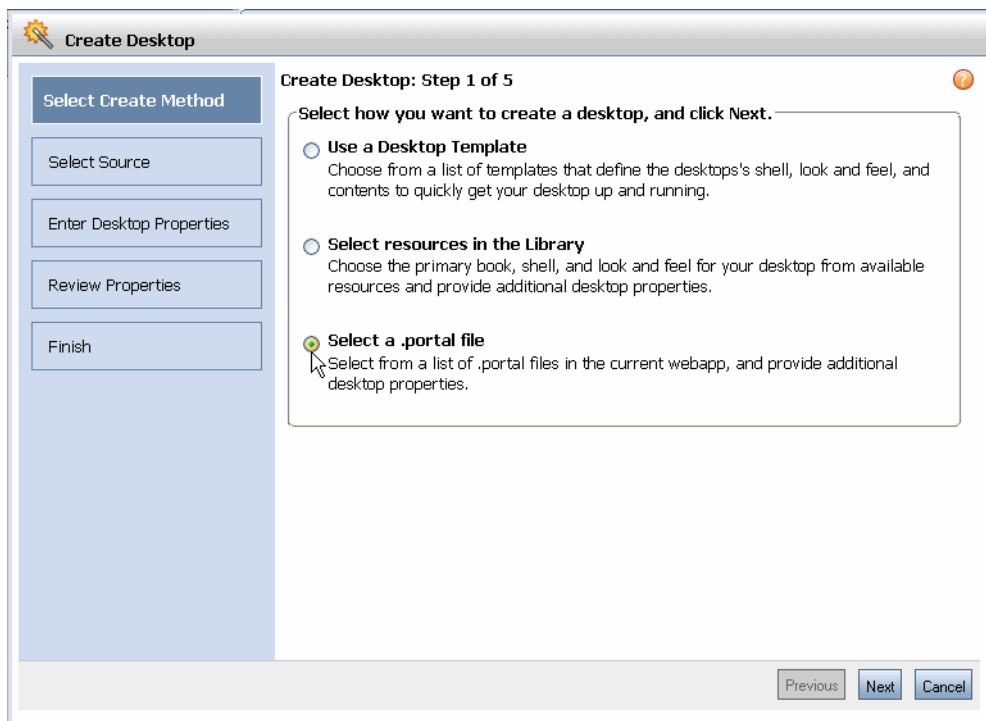
2. Navigate to the portal for which you want to create a desktop.

The Portals page displays, with the Browse Portals tab active. If no portals exist yet, the table containing portals is empty.

3. In the Browse Desktops tab, click **Create New Desktop**.

The Create Desktop wizard displays, as shown in [Figure 15–9](#).

Figure 15–9 Create Desktop Wizard in Administration Console



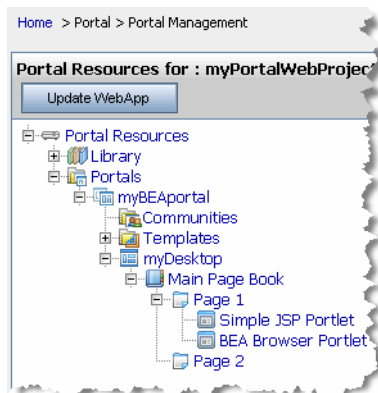
4. Complete the first page of the wizard by choosing the method of creating the desktop:
 - **Use a Desktop Template:** You can choose from a list of templates that define the desktops's shell, Look And Feel, and contents to quickly get your desktop up and running.
 - **Select resources in the Library:** You can choose the primary book, shell, and Look And Feel for your desktop from available resources and provide
 - **Select a .portal file:** You can select from a list of .portal files in the current web application, and provide additional desktop properties.
5. Enter values for the desktop in the appropriate wizard pages, using [Table 15–3](#) as your guide:

Table 15–3 Create Desktop Wizard Field Descriptions

| Field or Selection | Value/Description |
|---------------------------------|--|
| Use a Desktop Template | <p>Either search for a template by entering a search string and clicking Search, or display all templates by clicking Show All.</p> <p>Select a template in the list.</p> <p>Click Next.</p> <p>Enter additional desktop properties, including Title, Description, Partial URL, and Desktop Resources.</p> <p>Click Create Desktop, or click Review Properties to review the summary of properties and click Create Desktop. The desktop is created.</p> <p>Click Finish.</p> |
| Select Resources in the Library | <p>You can either search for an existing book or create a new one. To use an existing book, you can search for a primary book by entering a search string and clicking Search, or display all books by clicking Show All. If you choose to create a new book, enter a Book Name (required), and a Description and Menu option if desired.</p> <p>Enter additional template properties, including Title, Description, Partial URL, and Desktop Resources.</p> <p>Click Create Desktop, or click Review Properties to review the summary of properties and click Create Desktop. The desktop is created.</p> <p>Click Finish.</p> |
| Select a portal file | <p>Either search for a .portal file by entering a search string and clicking Search, or display all .portal files by clicking Show All.</p> <p>Select a file in the list.</p> <p>Click Next.</p> <p>Enter the desired desktop properties, including Title, Description, Partial URL, and Desktop Resources.</p> <p>Click Create Desktop, or click Review Properties to review the summary of properties and click Create Desktop.</p> <p>If some of the selected resources already exist in the library, a Conflict Resolution page displays. Select an option to indicate the file replacement method that you want to use; for more information, refer to Updating Portal Resources.</p> <p>Click Finish.</p> |

The Browse Desktops table includes the desktop you created, and the Portal Resources tree includes the new desktop, similar to the example shown in [Figure 15–10](#).

Figure 15–10 New Desktop in Portal Resources Tree



15.12.1.1 Disassembling to the Library

When you create a new desktop using the WebLogic Portal Administration Console, you can use an existing portal template. Using a template means that you will be taking the portal resources for your desktop directly from a `.portal` file that was created in Oracle Enterprise Pack for Eclipse. (The `.portal` file is also called the primary instance.) When you create a desktop, the portal assets are removed from the `.portal` file, placed in a database, and surfaced in both the Library and desktop trees of the Administration Console. Taking the assets from a new desktop instance and placing them in the Library is called disassembling.

At this point, the assets (books, pages, and so on) in the Library (Library instances) are hierarchically related to their corresponding desktop instances. A change to a Library resource, such as a name change, is automatically inherited by the corresponding desktop asset. On the other hand, a change to the desktop asset is not reflected back up the hierarchy.

Note: Changes made to assets are never "reverse inherited" up the hierarchy. A change to a desktop asset is never inherited by its corresponding Library instance. Likewise, a change to a Visitor instance is never inherited by a desktop or Library instance.

New books and pages that you create in a desktop are not disassembled—they are considered to be private to that desktop.

15.12.1.2 Decoupling of Property Settings

If an administrator or a visitor (using Visitor Tools) changes the book properties of a book or the page properties of a page in a desktop, those property settings become decoupled from the settings in the parent book or page in the Library. Page properties include layout and theme, while book properties include menus and layout. These properties can be modified in the Administration Console. When a portal is propagated, any assets that are decoupled in the source application will remain decoupled in the destination.

15.12.2 Modifying Desktop Properties

To modify the properties of a desktop, perform these steps:

1. In the Portal Resources tree, select **Portals** and navigate to a desktop.
2. In the Details tab, you can choose to edit properties in each section. Use the following table as a guide.

| Property | Procedure |
|--|---|
| Title and Description: Change title and description of the portlet in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |

| Property | Procedure |
|--|--|
| Title and Description: Add a localized title for the portlet | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Shell, Look And Feel, Primary Book | <p>Click Appearance And Contents; the Update Desktop dialog displays.</p> <p>From the Default Shell drop-down menu, select a shell.</p> <p>From the Look And Feel drop-down menu, select a Look And Feel.</p> <p>From the Default Primary Book drop-down menu, select a book. The primary book is the main visual and navigational infrastructure for a particular desktop view of a portal.</p> <p>Click Update.</p> |
| Advanced Properties | <p>Click Advanced Properties to set the following properties:</p> <p>In the Enable Tree Optimization drop-down menu, select True or False. Changing this value might change the behavior of the portal and should not be performed without first doing a complete test.</p> <p>To disable ScrollToWindow, select False. (This feature is enabled by default.) When this feature is enabled, on each request to the desktop, the browser window will scroll down to the portlet that caused the request to the server. For example, if your portlet is low on the browser page (where you have to use the browser scroll bar to see the portlet), and you submit a form in the portlet, when the resulting page renders, the browser automatically scrolls to that portlet.</p> <p>To indicate which Asynchronous Mode to use, select Portlet, Desktop, or None.</p> <p>Portlet – Enables asynchronous desktop rendering for the entire portal desktop. This mode disables any portlet-specific asynchronous rendering settings that may exist in the desktop.</p> <p>Desktop – Disables asynchronous rendering for the entire portal desktop. This mode disables asynchronous rendering for all portlets, including ones that have portlet-specific asynchronous rendering enabled.</p> <p>None – Enables portlet-specific asynchronous rendering to function, but disables asynchronous desktop rendering.</p> <p>For more information, see Section 13.1, "Asynchronous Desktop Rendering."</p> <p>Set Enable DISC to true to enable the Disc framework. Disc provides a client-side, JavaScript, object-oriented programming framework for handling events, making asynchronous portlet updates, and for accessing portal context objects. See the <i>Oracle Fusion Middleware Client-Side Developer's Guide for Oracle WebLogic Portal</i> for information on Disc.</p> <p>Set Enable DVT to true to enable placeable movement (drag and drop) for the desktop. For more information, see Section 8.13, "Enabling Placeable Movement."</p> |

- To verify your changes in a browser, click **View Desktop**.

15.13 Books

A book is a portal component that provides high-level content organization and navigation. Books contain pages or other books, providing a mechanism for hierarchical nesting of pages and content.

15.13.1 Creating a Book

If you have Library Administration privileges, you can create a new book in the portal Library that can be used as a component in multiple portals. If you have Portal Administrator privileges, you can create books to use in customized portals, but these books are not reusable (and are not listed in the portal Library).

To create a book in the portal Library, perform these steps:

1. In the Portal Resources tree, expand the Library folder and select Books. The Browse Books tab displays.
2. Click **Create New Book**. The Create New Book dialog displays.
3. Enter a title, description, menu, and theme for the book.

Note: The Multi Level Menu is a pull-down menu, and the Single Level Menu is a tabbed menu.

4. Click **Create Book**.

To create a book on an individual desktop, perform these steps:

1. In the Portal Resources tree, expand the Portals node and select the book or page where you want to create a book.
2. Click the appropriate tab depending on whether you are working on a page or a book, as follows:
 - For pages, click the **Edit Contents** tab.
 - For books, click the **Browse Contents** tab.
3. Click **Add New Book**. The Create New Book dialog displays.
4. Enter a title, description, menu, and theme for the book.
5. Click **Create**.

The book is added for the desktop but will not be added to the Library.

15.13.2 Managing Book Content

The contents of a book include pages and books. You can view the books and pages that are already on your book, and add and remove pages and books to construct your book.

15.13.2.1 Adding Portal Elements to a Book

Library: To add a content to a book, perform these steps:

1. In the Portal Resource tree, expand the Library node and navigate to a book. The Details tab displays.
2. Click **Add & Sort Contents**. The Add Books and Pages dialog displays.
3. Display the books or pages that you want to choose from, using the Search area if needed.
4. Choose the elements that you want to add by selecting the desired check boxes, and click **Add**.
5. When finished, click **Save**.

Desktop: To add a content to a book, perform these steps:

1. In the Portal Resource tree, expand the Portals node and navigate to a book. The Details tab displays.
2. Click **Browse Contents**. In the Browse Book Contents section, you can choose to add existing elements using the Add & Sort Content button, or create a new page/book using the Add New Page button or Add New Book button.
3. If you want to create a new book and add it to this book, click **Add New Book**; the Create New Book dialog displays. Fill in the fields of this dialog as described in [Section 15.13.1, "Creating a Book."](#)
4. If you want to create a new page and add it to this book, click **Add New Page**; the Create New Page dialog displays. Fill in the fields of this dialog as described in [Section 15.14.1, "Creating a New Page."](#)
5. If you want to add an existing book or page to the book, click **Add Contents**; search for existing books or pages if needed, then select the elements that you want, and click **Add**. When finished, click **Save**.

15.13.2.2 Positioning or Removing Portal Elements on a Book

To position or remove content on a book:

1. In the Portal Resource tree, expand either the Library node or the Portals node as desired, and select a book. The Details tab displays.
2. Click **Add & Sort Contents**. The Add Books and Pages to Book dialog displays.
3. If you want to remove a page or book, select the check box for that element in the Contents of Book column and click **Remove Selected**.
4. To change the order of an element on the page, select the check box for that element in the Contents of Book column; then click the up arrow or down arrow as needed.
5. When finished, click **Save**.

15.13.3 Modifying Library Book Properties and Contents

To modify the properties of a book that resides in the library:

1. In the Portal Resources tree, expand the Library node and select the desired book.
2. From the Details tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|---|---|
| Title and Description: Change title and description of the book in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |

| Property | Procedure |
|---|--|
| Title and Description: Add a localized title for the book | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Book Contents | <p>Click Book Contents; the Browse Contents tab displays.</p> <p>Select books and pages to add, following the instructions in Section 15.13.2, "Managing Book Content."</p> |
| Appearance | <p>Click Appearance; the Edit Appearance dialog displays.</p> <p>From the Menu drop-down menu, select a Menu.</p> <p>From the Theme drop-down menu, select a Theme.</p> <p>Select Hidden to hide the navigation tab for the book to prevent direct access.</p> <p>Click Update.</p> |

15.13.4 Modifying Desktop Book Properties

To modify the properties of a book that resides on a desktop, perform these steps:

1. In the Portal Resources tree, expand the Portals node and select the desired book.
2. From the Details tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|-----------------------|---|
| Title and Description | <p>You must edit these values within the Library resource tree. Expand the Library node, select the book that you want to edit, and follow the instructions in Section 15.13.3, "Modifying Library Book Properties and Contents."</p> |
| Book Contents | <p>Click Book Contents; the Browse Contents tab displays.</p> <p>Click Add Contents.</p> <p>Select books and pages to add, following the instructions in Section 15.13.2, "Managing Book Content."</p> |
| Menu and Theme | <p>Click Appearance; the Edit Appearance dialog displays.</p> <p>From the Menu drop-down menu, select a Menu.</p> <p>From the Theme drop-down menu, select a Theme.</p> <p>Click Update.</p> |

15.14 Pages

Pages contain the portlets that display the actual portal content. Pages can also contain books and other pages.

15.14.1 Creating a New Page

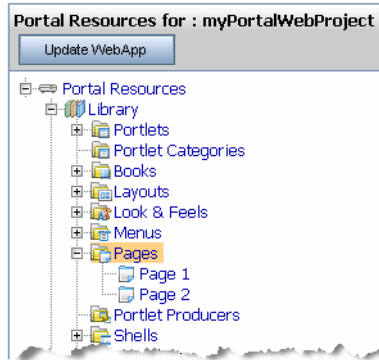
A page is a portal resource that acts as container for portlets. If you have appropriate Delegated Administration privileges, you can create a new page in the portal library that can be used as a component in multiple portals. If you have Portal Administrator privileges, you can create pages to use in customized portals, but these pages are not reusable (and are not listed in the portal Library).

In this task, you will create a new page in the library of resources for your project.

Follow these steps:

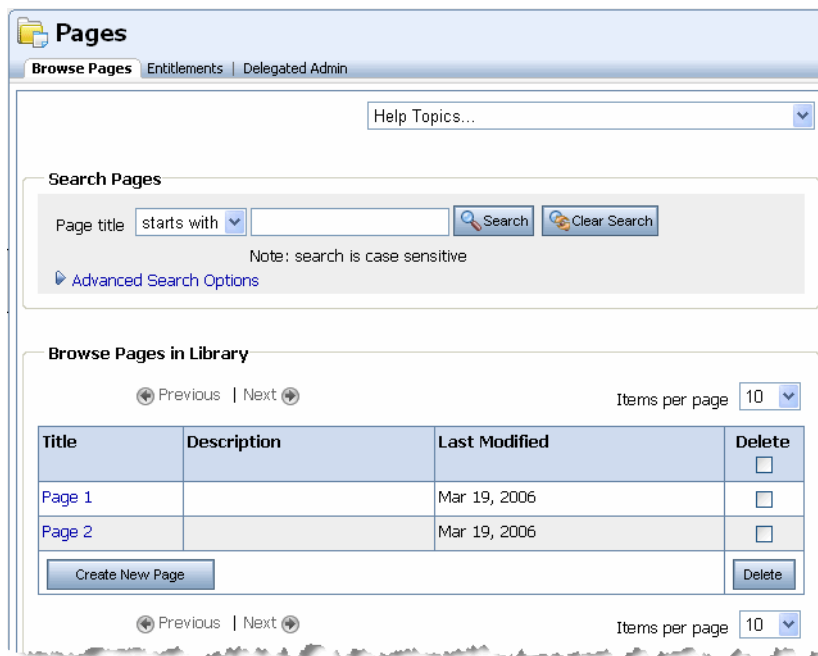
1. Expand the **Library** folder for your portal web project and select the **Pages** folder; [Figure 15–11](#) shows an example of the tree.

Figure 15–11 Expanded Portal Resources Tree Showing Library Pages



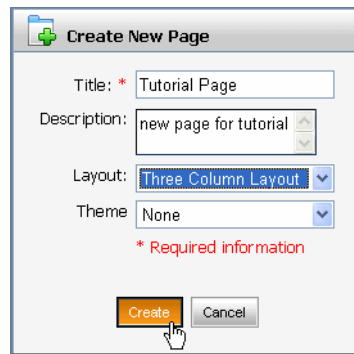
The **Browse Pages** tab displays in the right pane, as shown in [Figure 15–12](#).

Figure 15–12 Browse Pages Tab



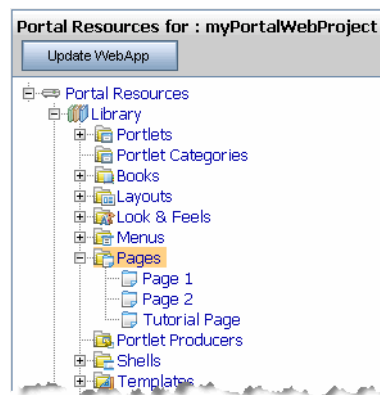
2. Click **Create New Page**.

The Create New Page dialog displays, as shown in [Figure 15–13](#).

Figure 15–13 Create New Page Dialog in Administration Console

3. Enter a title, description, layout, and theme for the page.
4. Click **Create**.

The new page is added, and is included in the **Details** page for the library; the Portal Resources tree updates to include the new page, as shown in [Figure 15–14](#).

Figure 15–14 New Page Added to the Portal Resources Tree

To create a page on an individual desktop, perform these steps:

1. In the Portal Resources tree, expand the Portals node and select the book or page where you want to create a page.
2. With the Browse Contents tab active, click **Add New Page**. The Create New Page dialog displays.
3. Enter a title, description, layout, and theme for the page.
4. Click **Create**.

The page is added for the desktop but will not be added to the Library.

15.14.2 Managing Page Content

The contents of a page include portlets and books. You can view the books and portlets that are already on your page, and add and remove portlets and books to construct your page.

15.14.2.1 Adding Contents to a Page

Library: To add a content to a page, perform these steps:

1. In the Portal Resource tree, expand the Library node and navigate to a page. The Details tab displays.
2. Click **Page Contents**. The Edit Contents tab displays.
3. Click **Add Contents** in the respective placeholder. The Add Books and Portlets to Placeholder dialog displays.
4. Display the portlets or books that you want to choose from, using the Search area if needed.
5. Choose the content that you want to add by selecting the desired check boxes, and click **Add**.
6. When finished, click **Save**.

Desktop: To add content to a page:

1. In the Portal Resource tree, expand the Portals node and navigate to a page. The Details tab displays.
2. Click **Page Contents**. The Edit Contents tab displays. In the Edit Contents tab, you can choose to add existing content using the Add Contents button, or create a new book using the Add New Book button.
 - a. If you want to create a new book and add it to this page, click **Add New Book** for the respective placeholder; the Create New Book dialog displays. Fill in the fields of this dialog as described in [Section 15.13.1, "Creating a Book."](#)
 - b. If you want to add an existing book or portlet to the book, click **Add Contents** for the respective placeholder; search for existing books or portlets if needed, then select the elements that you want, and click **Add**.
3. When finished, click **Save**.

15.14.2.2 Positioning Elements on a Page

The page layout is the grid structure of a page that holds placeholders for portlets on the page. You can select a layout for your portlets/books, and drag and drop portlets or books between the placeholders to customize the layout of each page.

Perform these steps:

1. In the Portal Resource tree, expand either the Library node or the Portals node as applicable, and select a page. The Details tab displays.
2. Click **Page Contents**. The Edit Contents tab displays.
3. If you want to change to a different layout, select a layout in the Layout drop-down menu.
4. Select the method that you want to use to position the elements on the page by selecting an option in the Position Elements area. The default is Drag & Drop.
5. Move portlets or books between placeholder columns.
6. If you want to prevent users from moving or deleting elements from a placeholder, select the **Lock Placeholder** check box.
7. When finished, click **Save Changes**.

15.14.3 Modifying Library Page Properties

To modify the properties of a page that resides in the library, perform these steps:

1. Expand the Library node in the Portal Resources tree and navigate to a page.

- From the Details tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|---|--|
| Title and Description: Change title and description of the page in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |
| Title and Description: Add a localized title for the page | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Page Contents | <p>Click Page Contents; the Edit Contents tab displays.</p> <p>To add books or portlets, click Add Contents. To move content, select a positioning option by clicking one of the Position Elements radio buttons, then move elements as desired. Follow the instructions in Section 15.14.2, "Managing Page Content."</p> |
| Appearance | <p>Click Appearance; the Edit Appearance dialog displays.</p> <p>From the Layout drop-down menu, select a Layout.</p> <p>From the Theme drop-down menu, select a Theme.</p> <p>Select Hidden to hide the navigation tab for the page to prevent direct access.</p> <p>Click Update.</p> |

15.14.4 Modifying Desktop Page Properties

To modify the properties of a page that resides on a desktop, perform these steps:

- Expand the Portals node in the Portal Resources tree and navigate to a page.
- From the Details tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|-----------------------|---|
| Title and Description | <p>You must edit these values within the Library resource tree. Expand the Library node, select the page that you want to edit, and follow the instructions in Section 15.14.3, "Modifying Library Page Properties."</p> |
| Page Contents | <p>Click Page Contents; the Edit Contents tab displays.</p> <p>To add books or portlets, click Add Contents. To move content, select a positioning option by clicking one of the Position Elements radio buttons, then move elements as desired. Follow the instructions in Section 15.14.2, "Managing Page Content."</p> |
| Layout and Theme | <p>Click Appearance; the Edit Appearance dialog displays.</p> <p>From the Layout drop-down menu, select a Layout.</p> <p>From the Theme drop-down menu, select a Theme.</p> <p>Click Update.</p> |

15.14.5 Moving a Page or Book to Another Location on the Desktop

Within a desktop, you can move a book or page to a different location within the desktop; for example, you can move page1 from book1 to book2 within a single desktop. You must have "can manage" privileges on both the source and destination location for the resource. You can perform this task for any book or page, except the main book.

Note: You cannot change the inheritance structure of a resource when you move it; for example, if a book's parent is another book, you may move it only underneath another book - not to a page. If the parent is a page, you can only move the resource under another page.

Perform these steps:

1. In the Portal Resource tree, expand the Portals node as desired, and select the book or page that you want to move.
2. Click **Move**. The Move dialog displays, instructing you to select the node in the Portal resources tree where you want to place the element.
3. Click **OK**.
4. In the Portal Resources tree, click the book or page under which you want to paste the element that you selected in step 2.
5. Click **Paste**. The Paste confirmation dialog displays.
6. Click **OK**.

15.15 Portlets

Portlets are the visible components that act as the interface to applications and content. They are the actual components with which a user interacts in a portal. Portlets can be arranged in pages to provide users access to multiple applications within a single page.

Portlets also support application-to-application communication and can be used to provide users access to composite applications - a single portlet interface that combines data and tasks from multiple sources.

15.15.1 Copying a Portlet in the Library

You can use this feature of the WebLogic Portal Administration Console to duplicate an existing portlet and use it as a template for a "new" portlet.

Perform these steps:

1. Expand the Library node in the Portal Resources tree and navigate to the portlet that you want to copy.
2. Click **Copy Portlet**. The Copy Portlet dialog displays.
3. Enter a title and description for the copied portlet.
4. Click **OK**. The portlet is added at the bottom of the portlet list.
5. You can now customize the copied portlet by modifying its properties and preferences.

15.15.2 Deleting a Portlet

You can delete portlets from the Administration Console only if they were created there; for example, if you used the Copy Portlet feature to duplicate the portlet. Portlets created in Oracle Enterprise Pack for Eclipse cannot be deleted using the Administration Console.

Perform these steps:

1. Expand the Library node in the Portal Resources tree and navigate to the portlet that you want to delete.
2. Click **Delete Portlet**.

15.15.3 Modifying Library Portlet Properties

Portlet properties include all of the features and elements that make up the portlet. As a portal administrator, you can modify some of these properties from the Details tab. You can also edit the title, description, and locale information from the Title & Description tab, as described below.

To modify the properties of a portlet that resides in the library, perform these steps:

1. Expand the Library node in the Portal Resources tree and navigate to the portlet that you want to modify.
2. From the Details tab, select the type of property that you want to change. Use the table below for guidance.

| Property | Procedure |
|--|--|
| Title and Description: Change title and description of the portlet in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |
| Title and Description: Add a localized title for the portlet | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Portlet Preferences | <p>Refer to Section 15.16.1, "Creating a Portlet Preference" and Section 15.16.2, "Editing a Portlet Preference."</p> |
| Portlet Theme | <p>Click Appearance; the Edit Appearance dialog displays.</p> <p>From the drop-down menu, select a Theme.</p> <p>Click Update.</p> |
| Render caching and timeout | <p>Click Advanced Properties.</p> <p>In the Render Caching Enabled drop-down menu, select True or False.</p> <p>If you selected True, enter a cache expiration value in the Cache Expiration field.</p> <p>Click Update.</p> |

| Property | Procedure |
|----------------------------------|--|
| Run Portlet in a Separate Thread | <p>This option is only available if the portlet was marked as Forkable during the development stage. If you select True, the portlet will be processed in a separate thread (forked). If False, the portlet will not be forked.</p> <p>See the <i>Oracle Fusion Middleware Portlet Development Guide for Oracle WebLogic Portal</i> for detailed information on portlet forking.</p> |

15.15.4 Modifying Desktop Portlet Properties

Portlet properties include all of the features and elements that make up the portlet. As a portal administrator, you can modify some of these properties from the Details tab. You can also edit the title, description, and locale information from the Title & Description tab, as described below.

To modify the properties of a portlet that resides on a desktop, perform these steps:

1. Expand the Portals node in the Portal Resources tree and navigate to the portlet that you want to modify.
2. From the Details tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|--------------------------------|--|
| Title and Description | You must edit these values within the Library resource tree. Expand the Library node, select the portlet that you want to edit, and follow the instructions in Section 15.15.3, "Modifying Library Portlet Properties." |
| Portlet Preferences | Refer to Section 15.16.1, "Creating a Portlet Preference" and Section 15.16.2, "Editing a Portlet Preference." |
| Portlet Theme | <p>Click Appearance; the Edit Appearance dialog displays.</p> <p>From the drop-down menu, select a Theme.</p> <p>Click Update.</p> |
| Enabled Client Classifications | For portlets that are assigned client classifications, the value you enter for the description element is displayed in this field to show the classifications to which the portlet is assigned. Client classifications declare which devices the portlet can be used on. For more information on client classifications, see Chapter 12, "Creating Portals for Multiple Device Types." |
| Portlet Publishing Link | <p>The URL to retrieve a desktop instance portlet from the WLP publishing service. You can use this URL to include a portlet in a web page using an <iframe> tag.</p> <p>Options include:</p> <p>Light – (default) Only the content of the portlet is rendered. Light decoration does not include a border or titlebar if they were part of the original desktop portlet instance. This style portlet tends to blend in more with the surrounding web page elements.</p> <p>Full – This option renders the portlet almost exactly it appears in its original desktop context. If defined in the original portlet, the border and title bar (with mode and state buttons) will be rendered. Essentially, the portlet is rendered with the same look and feel as the original portlet appeared in its host desktop.</p> <p>For detailed information on Portlet Publishing, see the <i>Oracle Fusion Middleware Client-Side Developer's Guide for Oracle WebLogic Portal</i>.</p> |

15.16 Portlet Preferences

A portlet preference is a property in a portlet that can be customized by either an administrator or a user. Your portlet might already have preferences, but if you have

the appropriate Delegated Administration privileges you can create additional portlet preferences.

15.16.1 Creating a Portlet Preference

To create a portlet preference, perform these steps:

1. Expand the Portals node or the Library node in the Portal Resources tree, as appropriate, and navigate to the portlet for which you want to create a preference. The Details tab displays.
2. Click Add Portlet Preference.
3. Fill in the information in the fields. Use the table below as a guide.

Table 15–4 Creating a Portlet Preference - Data Entry Fields

| For this field... | Enter this information... |
|------------------------------|---|
| Name | The name you want to give this preference. |
| Description | A description of this preference. |
| Value(s) | A value for a preference. For example: True or False. |
| Is Modifiable? (check box) | Select this check box if you want to allow end users to modify this preference. |
| Is Multi-Valued? (check box) | Select this check box if you want to enter multiple values for the preference. If you select this box, an additional data entry field displays for you to enter additional values. Click Add Another Value after entering each value, until you are finished. |

1. Click **Save**.
2. For library instances of portlets, when you add a preference it automatically proliferates to library page instances and desktop page instances if the instances have not been decoupled.
3. If you want to force proliferation of this preference to every instance of this portlet, click **Propagate to Instances**; WebLogic Portal overwrites all desktop instance's preferences with the library preferences. When complete, a message appears at the top of the Administration Console.

Here are some tips related to portlet preferences that you might find useful:

- When desktop instances of a portlet have no preferences, they automatically inherit the preferences from the library instance of the portlet.
- When desktop instances of a portlet have their own preferences set, they will not automatically inherit preferences from the library instance.
- If a desktop instance of a portlet has its own preferences set and these preferences are removed, it will automatically inherit all preferences from the library instance.
- If a desktop instance of a portlet has inherited preferences from the library instance and the desktop instance of this preference has been modified, it will no longer automatically inherit new preferences from the library or updates made to the library portlet's instance of this preference.
- If a desktop instance of a portlet has inherited the preferences from the library instance and no desktop instance specific preferences have been set, and the inherited preferences have not been modified in the desktop instance, the desktop instance will inherit all updates to the library preferences.

15.16.2 Editing a Portlet Preference

If you have the appropriate Delegated Administration rights, you can edit a portlet's preferences to change the way a portlet behaves.

To edit a portlet preference:

1. Expand the Portals node or the Library node in the Portal Resources tree, as appropriate, and navigate to the portlet for which you want to edit a preference. The Details tab displays.
2. Click **Portlet Preferences**.
3. Select the portlet preference by clicking its name in the Name column.
4. Edit the information in the fields. Use the table below as a guide.

Table 15–5 Editing a Portlet Preference - Data Entry Fields

| For this field... | Enter this information... |
|------------------------------|--|
| Name | The name you want to give this preference. |
| Description | A description of this preference. |
| Value(s) | A value for a preference. |
| Is Modifiable? (check box) | Select this check box if you want to allow end users to modify this preference. |
| Is Multi-Valued? (check box) | Select this check box if you want to enter multiple values for the preference. If you select this box, an additional data entry field displays for you to enter additional values. Click Add Another Value after entering each value, until you are finished. |

1. Click **Save**.
2. For library instances of portlets, when you edit a preference it automatically proliferates to library page instances and desktop page instances if the instances have not been decoupled. If you want to force proliferation of this change to every instance of this portlet, click **Propagate to Instances**. When complete, a message appears at the top of the Administration Console.

15.17 Portlet Categories

This section explains how to create and edit portlet categories. Portlet categories provide for the classification of portlets, which is useful when organizing a large collection of portlets into meaningful groupings. The portlet categories are similar to other hierarchical structures in that parent "folders" can contain child folders and/or portlets. You must first create a portlet category, and then you can manage portlets by adding them to a category or moving them between categories.

15.17.1 Creating a Portlet Category

To create a portlet category:

1. In the Portal Resources tree, expand the Library folder and select **Portlet Categories**. The Browse Category tab displays.
2. Click **Create New Category**.
3. Type a title and description for the new category in the pop-up window.
4. Click **Create**.

15.17.2 Adding Portlets to a Portlet Category

To add portlets into a category:

1. Expand the Library node in the Portal Resources tree and navigate to a portlet category. The Summary tab displays.
2. Click **Portlets In Category**.
3. Click **Add Portlets**.
4. In the Available Portlets area, select the portlets that you want to add, and click **Add** to list them in the Selected Portlets area.
5. Click **Save**.

15.17.3 Modifying Portlet Category Properties

Portlet category properties include all of the features and elements that make up the category. As a portal administrator, you can modify some of these properties from the Summary tab. You can also edit the title, description, and locale information from the Titles & Descriptions tab, as described below.

Perform these steps:

1. In the Portal Resources tree, expand the Library node and navigate to a portlet category.
2. From the Summary tab, select the type of property that you want to change. Use the table below as a guide.

| Property | Procedure |
|---|---|
| Title and Description: Change title and description of the category in the current locale | <p>Click Title & Description.</p> <p>Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays.</p> <p>Enter a new Title and/or Description.</p> <p>Click Update.</p> |
| Title and Description: Add a localized title for the category | <p>Click Title & Description.</p> <p>Click Add Localized Title; the Add a Localized Title & Description dialog appears.</p> <p>Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title.</p> <p>Click Create.</p> |
| Portlets in Category | Refer to Section 15.17.2, "Adding Portlets to a Portlet Category." |
| Categories in Category | <p>Click Categories In Category; the Browse Category tab displays.</p> <p>Click Create New Category; the Create New Category dialog displays.</p> <p>Enter a Title and Description for the new category.</p> <p>Click Create. The category is created and added to the currently selected category</p> |

15.18 Look And Feels

The physical appearance of a portal is determined by the look and feel selected for the portal desktop. Look and feels are a combination of skins, themes, and skeletons that control the structure, portlet title bar graphics, JavaScript behavior, and HTML styles in your portal desktops.

Developers use Oracle Enterprise Pack for Eclipse to assemble skeletons, skins, and other elements to create Look And Feels. A look and feel is a portal resource that you "apply" to a portal desktop using the WebLogic Portal Administration Console.

You can change the look and feel of an entire desktop or of individual components in the desktop by editing that element's properties:

15.18.1 Modifying Look And Feel Properties

Look and feels are created using Oracle Enterprise Pack for Eclipse. You can modify some look and feel properties using the WebLogic Portal Administration Console.

To modify a look and feel property:

1. In the Portal Resources tree, select Library and navigate to a look and feel. The Details tab displays, showing the current information for the look and feel.
2. Click **Title & Description**.
3. You can either update the title and description for the current locale, or add a new localized title for the Look And Feel. Use the table below as a guide:

| Property | Procedure |
|---|--|
| Change title and description of the Look And Feel in the current locale | Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays. Enter a new Title and/or Description. Click Update . |
| Add a localized title for the Look And Feel | Click Add Localized Title ; the Add a Localized Title & Description dialog appears. Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title. Click Create . |

15.19 Shells

A desktop's header and footer, controlled by a portal shell, are the areas that are typically above and below the main body. These areas usually display such things as personalized content, banner graphics, legal notices, and related links. When a portal is accessed by a user, each of the components in the shell are rendered to form the frame that contains the books, pages, and portlets.

Shells are created using Oracle Enterprise Pack for Eclipse. You can modify some shell properties using the WebLogic Portal Administration Console.

15.19.1 Modifying Shell Properties

You can modify the title, description, and locale information for shells.

To modify shell properties:

1. In the Portal Resources tree, expand the Library node and navigate to the desired shell.
2. Click **Title & Description**.
3. You can either update the title and description for the current locale, or add a new localized title for the shell. Use the table below as a guide:

| Property | Procedure |
|---|--|
| Change title and description of the shell in the current locale | Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays. Enter a new Title and/or Description. Click Update . |
| Add a localized title for the shell | Click Add Localized Title ; the Add a Localized Title & Description dialog appears. Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title. Click Create . |

15.20 Themes

Themes allow you to customize specific portal resources such as books, pages, or portlets. Developers create themes using Oracle Enterprise Pack for Eclipse; for example, a skin theme is a subset of graphics, CSS styles, and/or JavaScript behaviors that you can use on books, pages, and portlets to give them a different look from the rest of the portal desktop.

For more information, refer to [Chapter 7, "User Interface Development with Look And Feel Features."](#)

You can select from predefined themes as you design portal desktops.

15.20.1 Modifying Theme Properties

Themes are created using Oracle Enterprise Pack for Eclipse. You can modify a subset of theme properties using the WebLogic Portal Administration Console.

Perform these steps:

1. In the Portal Resources tree, expand the Library node and navigate to the desired theme.
2. Click **Title & Description**.
3. You can either update the title and description for the current locale, or add a new localized title for the theme. Use the table below as a guide:

| Property | Procedure |
|---|--|
| Change title and description of the theme in the current locale | Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays. Enter a new Title and/or Description. Click Update . |
| Add a localized title for the theme | Click Add Localized Title ; the Add a Localized Title & Description dialog appears. Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title. Click Create . |

15.21 Menu (Navigation)

Menus are optional components that are loosely coupled to books and pages. A menu provides a navigation component, whether it is a set of tabs, a set of links, or a tree structure. WebLogic Portal provides the following types of menus:

- **Single Level Menu** - Provides a single row of tabs for navigation among books and pages.
- **Multi Level Menu** - Provides multiple levels of nested tabs for navigating among books and pages. Sub-books and pages are accessed through a cascading drop-down menu. Drop-down functionality occurs when books are added directly to books rather than to placeholders on pages.
- **No Navigation** - Suppresses the sub-book and pages tabs in the book. This option is useful, for example, if you use the Targeted Menu Portlet or the Left Navigation Shell for book navigation.

If you created your own navigation menus by copying and modifying the default menus, they are also available for selection when you are editing @@@.

15.21.1 Modifying Menu Properties

A menu's properties are all of the features and elements that make up the menu. As a portal administrator, you can modify some of these properties.

Perform these steps:

1. In the Portal Resources tree, select Library and navigate to a menu. The Details tab displays, showing the current information for the menu.
2. Click **Title & Description**.
3. You can either update the title and description for the current locale, or add a new localized title for the menu. Use the table below as a guide:

| Property | Procedure |
|--|--|
| Change title and description of the menu in the current locale | Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays. Enter a new Title and/or Description. Click Update . |
| Add a localized title for the menu | Click Add Localized Title ; the Add a Localized Title & Description dialog appears. Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title. Click Create . |

15.22 Layouts

Layouts are used to control the positions of the components in your portal, providing placeholders (in a table structure) for a page in which books, pages, and portlets can be placed. Different layouts display books and portlets on a page in different areas. For example, a layout that uses three table cells provides three placeholders in which portlets can be placed.

You cannot add a layout using the WebLogic Portal Administration Console. Layouts are created using Oracle Enterprise Pack for Eclipse. However, you can modify some

layout properties and add localized titles and descriptions for your layouts using the Administration Console.

15.22.1 Modifying Layout Properties

Layouts are created using Oracle Enterprise Pack for Eclipse. You can modify some layout properties using the WebLogic Portal Administration Console.

Perform these steps:

1. In the Portal Resources tree, select **Library** and navigate to a layout. The Details tab displays, showing the current information for the layout.
2. Click **Title & Description**.
3. You can either update the title and description for the current locale, or add a new localized title for the layout. Use the table below as a guide:

| Property | Procedure |
|--|--|
| Change title and description of the layout in the current locale | Click the locale (for example, en) in the Locale cell; the Add a Localized Title & Description dialog displays. Enter a new Title and/or Description. Click Update . |
| Add a localized title for the layout | Click Add Localized Title ; the Add a Localized Title & Description dialog appears. Enter a Language and Country identifier, Variant if applicable, Title, and a Description for the localized title. Click Create . |

Deploying Portals to Production

Propagation refers to the process of moving the database and LDAP contents of one portal domain environment to another. Oracle provides tools to help with portal propagation. These tools not only move database assets and LDAP information, but they also report differences and potential conflicts between the source and the target environments. You can define policies to automatically resolve conflicts, or an administrator can view a list of differences and decide the appropriate actions to take on a case-by-case basis.

Propagation tools are described in detail in the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*. The Production Operations Guide also helps you through the process of planning a strategy for propagation and provides detailed information on best practices.

This chapter contains information you might find useful as you are propagating (deploying) your portal from the staging environment to the production environment, when it is ready for public access.

The primary tools used in this chapter are the WebLogic Portal propagation tools (to move database and LDAP data between staging, development, and production), WebLogic Server application deployment tools, and any external content or security providers you are using.

16.1 Shared J2EE Libraries

The following sections provide more information about J2EE libraries and their behavior during portal deployment. For detailed instructions on how to work with J2EE libraries during deployment, refer to the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

16.1.1 Shared J2EE Library References in config.xml

[Figure 16-1](#) highlights the separation between your application code and shared J2EE libraries. The `config.xml` file resides in the domain, and it specifies the relationships between the web application and the J2EE libraries. [Example 16-1](#) shows an example `<library>` element from the `config.xml` file in a WebLogic Portal domain. As you can see, the library file is an EAR file located in the WebLogic installation area. This library is available to applications deployed on the target server.

Example 16-1 J2EE Library Referenced in config.xml File

```
<library>
  <name>p13n-app-lib#9.2.0@9.2.0</name>
  <target>AdminServer</target>
  <source-path>D:/bea/weblogic92/common/deployable-libraries/
```

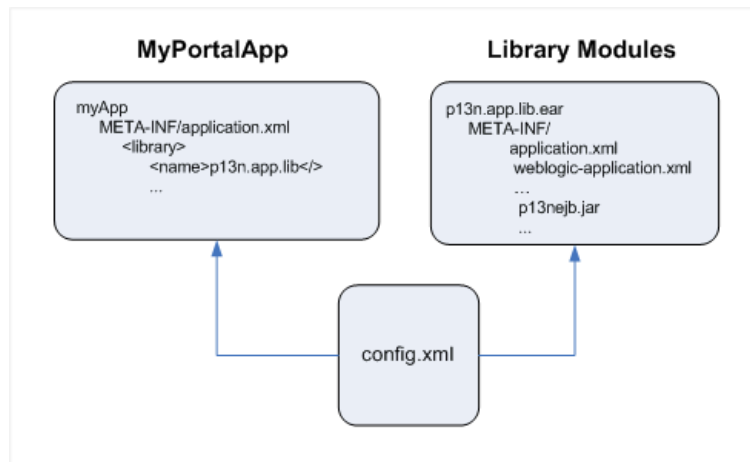
```

p13n-app-lib.ear
</source-path>
<deployment-order>1</deployment-order>
<security-dd-model>DDOnly</security-dd-model>
</library>

```

When the application is deployed, these relationships provide a plan by which the application and J2EE library code are merged into a single enterprise application.

Figure 16–1 Application Referencing a Shared J2EE Library



Tip: You can create a deployment plan to configure what gets mapped at runtime when the files merge. Deployment plans are described in the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

J2EE libraries can be:

- **Included by reference**

Perhaps the most important thing to know about shared J2EE libraries is that they are included in your application by reference. Within your WebLogic Portal application is a configuration file that references all of the J2EE libraries that your application requires. When you deploy your application, the library files are automatically located and included with your application.

- **Independently versioned**

Another important thing to know about J2EE libraries is that they are independently versioned. This means that each J2EE library includes within it a descriptor file that lists the module's version number. At deploy time, these descriptors are located, read, and merged automatically, ensuring that your application retrieves the correct version of each J2EE library that it requires.

- **Shared across multiple applications**

A set of shared J2EE libraries is installed when you create a WebLogic Portal domain. This set of J2EE libraries is used by all applications running in that domain.

- **Separately deployed**

Because J2EE libraries are separately deployed, applications can be upgraded easily by replacing a single J2EE library.

An application can include multiple J2EE libraries, assigning each a deployment order, which determines which version of a given file takes precedence if the same file is contained in multiple libraries. (Files contained in the referencing application always take precedence over library files.) Conceptually, J2EE libraries can be viewed as effectively overlaying (or more precisely, under-laying) the application in which they are included.

J2EE libraries can be employed at either the enterprise or web application level. They use the same file and directory structure as the applications in which they are included—the files contained in a J2EE library are effectively merged into the referencing application at deploy-time.

After deployment, the merged application functions as a standard J2EE application. As a consequence, the deployment information for assets in a library must be merged into the descriptors for the referencing application either prior to (or as part of) the deployment process.

16.1.1.1 Anatomy of a Shared J2EE Library

A J2EE library is a collection of libraries, resources, and configuration files packaged in an EAR or WAR file. EAR-based J2EE libraries are enterprise application scoped, while WAR-based modules are web application scoped.

[Figure 16–2](#) shows an exploded J2EE library. The J2EE library's name is `p13n-app-lib`.

Figure 16–2 Example of an Exploded Shared J2EE Library

```
p13n-app-lib
  p13n-ejb.jar
  datasync.war
  META-INF/
    Manifest.mf
    application.xml
    p13n-cache-config.xml
    p13n-config.xml
    p13n-profile-config.xml
    p13n-security-config.xml
    weblogic-application.xml
  APP-INF/lib/
    p13n_app.jar
```

In the `META-INF` directory is a `Manifest.mf` file; an example is shown in [Example 16–2](#). This file includes three elements that define the archive as a J2EE library:

- `Extension-name` – Specifies the name of the J2EE library.
- `Specification-Version` – Specifies the initial version of the J2EE library.
- `Implementation-Version` – (optional) Specifies the current version of the J2EE library. You increment this version number each time the J2EE library is updated. When an application is deployed, deployment descriptors specify which J2EE libraries to deploy. This version number can be referenced in deployment descriptors so that the intended version of the module is included.

Example 16–2 Example of a Manifest.mf File for a J2EE Library

```
Manifest-Version: 1.0
Ant-Version: Apache Ant 1.6.2
Created-By: 1.5.0_04-b05 (Sun Microsystems Inc.)
```

```
Extension-Name: p13n-app-lib
Specification-Version: 9.2.0
Implementation-Version: 9.2.0
```

16.1.2 Overriding Shared J2EE Library Settings in the web.xml File

At runtime, the `web.xml` files in all the shared J2EE libraries are merged, along with the `web.xml` file in your portal web project. The content of your `WEB-INF/web.xml` file overrides anything in the shared J2EE libraries, so if you want to change particular settings, you can do it there.

There are many other files for which file contents are merged; these can be overridden in the same way. These files include not only `WEB-INF/web.xml` but also `WEB-INF/weblogic.xml` and any files mentioned in `weblogic-extension.xml` from either the users' application or the shared libraries.

Servlet filters and servlets deployed in the shared libraries' `web.xml` files can be disabled if desired by deploying the null servlet filter (`com.bea.p13n.servlets.NullFilter`) or 404 servlet (`com.bea.p13n.servlets.SendErrorServlet`) in their place. For more information, refer to the *Oracle Fusion Middleware Java API Reference for Oracle WebLogic Portal*.

16.1.2.1 Servlet Mapping Overrides

The `web.xml` servlet mappings provided by WebLogic Portal reside in J2EE libraries. For example, the `ShowPropertyServlet` is defined in

```
<WLPORTAL_HOME>/content-mgmt/lib/j2ee-modules/content-management-web-lib.war
```

If you want to add to or modify these servlet mappings, you can add your mappings or provide mapping overrides in your portal web project's file-based `web.xml` file located in the following path:

```
PortalWebProject/WebContent/WEB-INF/web.xml
```

For example, if you want to call the `ShowPropertyServlet` when `/ShowPropertyServlet/*` is used in a URL, add the following entry to your file system `web.xml` file:

```
<servlet-mapping>
  <servlet-name>ShowPropertyServlet</servlet-name>
  <url-pattern>/ShowBinaryServlet/*</url-pattern>
</servlet-mapping>
```

Part IV

Production

In the production phase of the portal life cycle, your portal is live. In this phase, you can use the WebLogic Portal Administration Console to perform some management functions, such as adding portlets.

Part IV contains the following chapter:

- [Chapter 17, "Managing Portals in Production"](#)

Managing Portals in Production

A production portal is live and available to end users. A portal in production can be modified by administrators using the WebLogic Portal Administration Console and by users using Visitor Tools. For instance, an administrator might add additional portlets to a portal or reconfigure the contents of a portal.

During the life cycle of a WebLogic Portal application, it moves back and forth between development, staging, and production environments. This chapter contains information about managing portals that are on a production system.

This chapter contains the following sections:

- [Section 17.1, "Pushing Changes from the Library into Production"](#)
- [Section 17.2, "Transferring Changes from Production Back to Development"](#)

17.1 Pushing Changes from the Library into Production

Proliferation refers to the process by which changes made to the Library instance of a portal asset on the WebLogic Portal Administration Console are pushed into user-customized instances of that asset. For example, if a portal administrator deletes a portlet from a desktop, that change must be reflected into user-customized instances of that desktop. Before you propagate a portal, consider the way in which proliferation is configured for your portal.

If your desktops include a large number of user customizations, we recommend that you change the Portal Resources Proliferation of Updates Configuration setting to either **Asynchronous** or **Off**. This change reduces the amount of time required to complete the propagation.

You can do this in the WebLogic Portal Administration Console under **Configuration Settings and Analytics > Service Administration > Portal Resources > Portal Resources Proliferation of Updates Configuration**. The proliferation settings include **Asynchronous**, **Synchronous**, or **Off**.

For more information on proliferation and propagation, refer to the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*. For database setup requirements related to using the Asynchronous proliferation setting, refer to the *Oracle Fusion Middleware Database Administration Guide for Oracle WebLogic Portal*.

17.2 Transferring Changes from Production Back to Development

WebLogic Portal utilities such as the propagation tools and the Export/Import Utility allow you to reliably move and merge changes between environments. The Export/Import Utility allows a full round-trip development life cycle, where you can

easily move portals from a production environment back to your Oracle Enterprise Pack for Eclipse development environment.

For instructions on using the propagation tools and Export/Import Utility, refer to the *Oracle Fusion Middleware Production Operations Guide for Oracle WebLogic Portal*.

Facet-to-Library Reference Tables

This appendix contains reference tables that show the relationships between WebLogic Portal facets and Shared J2EE libraries.

- [Section A.1, "WebLogic Portal EAR Project Facets"](#)
- [Section A.2, "WebLogic Portal Web Project Facets"](#)

A.1 WebLogic Portal EAR Project Facets

This section lists the WebLogic Portal EAR project facets and their associated J2EE Shared Libraries.

- [Table A-1, "WebLogic Portal Facets"](#)
- [Table A-2, "WebLogic Portal \(Optional\) Facets"](#)
- [Table A-3, "WebLogic Portal Collaboration Facets"](#)

The Project Facets part of the EAR Project Properties dialog allows you to add or remove facets. The WLP facets listed in this section are all referenced in this dialog, shown in [Figure A-1](#).

Figure A-1 EAR Project Properties Dialog

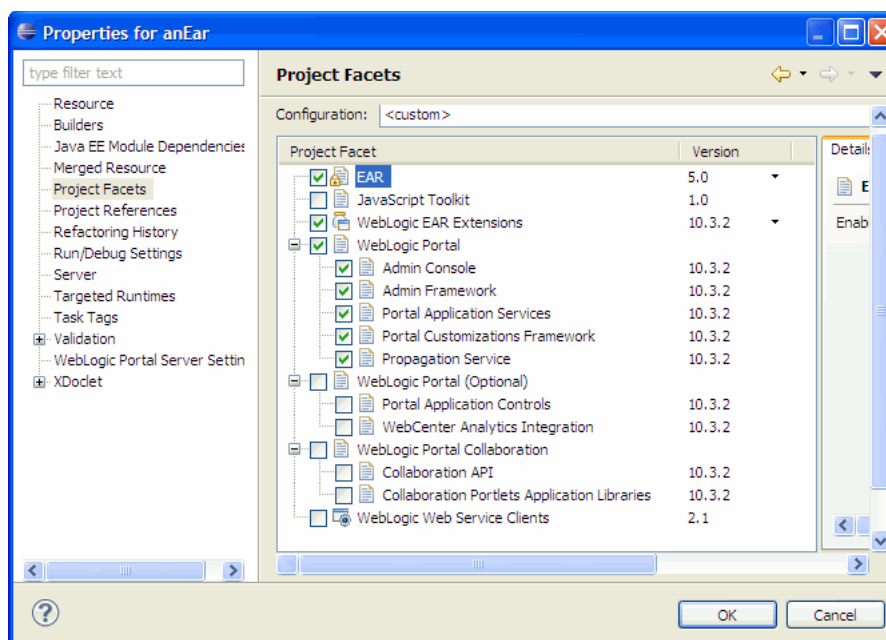


Table A-1 WebLogic Portal Facets

| Facet | Requires (Facets) | Libraries (Features) |
|---------------------------------|--|--|
| Admin Console | Admin Framework | wlp-tools-admin-app-lib <ul style="list-style-type: none"> Deploys the Admin Console instance. |
| Admin Framework | Portal Application Services Portal Customizations Framework | wlp-tools-app-lib <ul style="list-style-type: none"> Application support for administration console wlp-tools-framework-app-lib <ul style="list-style-type: none"> Application support for administration console wlp-tools-common-app-lib <ul style="list-style-type: none"> Application support for administration console wlp-tools-content-app-lib <ul style="list-style-type: none"> Content Management Admin controls and services wlp-tools-im-app-lib <ul style="list-style-type: none"> Interaction Management Admin controls and services wlp-tools-portal-app-lib <ul style="list-style-type: none"> Portal Admin controls and services wlp-tools-ugm-app-lib <ul style="list-style-type: none"> User and Group Admin controls and services wlp-tools-serviceadmin-app-lib <ul style="list-style-type: none"> Service Admin controls and services wlp-tools-analytics-app-lib <ul style="list-style-type: none"> Analytics Admin controls and services wlp-tools-full-console-app-lib <ul style="list-style-type: none"> Application support for administration console |
| Portal Application Services | None. | wlp-tools-support-app-lib <ul style="list-style-type: none"> Deploys IDE Support for Portal Application Services: Cache Management, Placeholder Preview, Content Preview, Campaign Cleanup p13n-app-lib-base, p13n-app-lib <ul style="list-style-type: none"> Property Sets, Events, Behavior Tracking, Rules, Users and Groups, User and Group Profiles, UUP Support, User Tracking content-management-app-lib, vcr-app-lib <ul style="list-style-type: none"> Content Management wlp-services-app-lib <ul style="list-style-type: none"> User Segments, Content Selectors, Campaigns, Placeholders, Content Management, CM Search and Autonomy APIs content-management-cmis-rest-app-lib <ul style="list-style-type: none"> CMIS REST Web Application webdav-app-lib <ul style="list-style-type: none"> WebDav Web Application |
| Portal Customizations Framework | None. | p13n-app-lib-base, p13n-app-lib <ul style="list-style-type: none"> See above. wlp-full-framework-app-lib <ul style="list-style-type: none"> Application support for the full portal, Stream portals/portlets, User Preferences |
| Propagation Service | Portal Application Services, Portal Customizations Framework | wlp-propagation-app-lib <ul style="list-style-type: none"> Deploys the propagation web application |

Table A-2 WebLogic Portal (Optional) Facets

| Facet | Requires (Facets) | Libraries (Features) |
|---|-----------------------------|--|
| Portal Application Controls | Portal Application Services | wlp-controls-app-lib <ul style="list-style-type: none"> ■ P13N Controls |
| Oracle WebCenter Portal's Analytics Integration | Portal Application Services | wlp-analytics-app-lib <ul style="list-style-type: none"> ■ Application support to integrate with Oracle WebCenter Portal's Analytics |

Table A-3 WebLogic Portal Collaboration Facets

| Facet | Requires (Facets) | Libraries (Features) |
|--|--|---|
| Collaboration API | Collaboration API Portal Application Services | wlp-collab-api-app-lib <ul style="list-style-type: none"> ■ WebLogic Portal Collaboration API |
| Collaboration Portlets Application Libraries | Collaboration API, Portal Customizations Framework | wlp-collab-portlets-app-lib <ul style="list-style-type: none"> ■ Application support for the Collaboration Portlets |

A.2 WebLogic Portal Web Project Facets

This section lists the WebLogic Portal Web project facets and their associated J2EE Shared Libraries.

- [Table A-4, "WebLogic Portal Facets"](#)
- [Table A-5, "WebLogic Portal \(Optional\) Facets"](#)
- [Table A-6, "WebLogic Portal Collaboration Facets"](#)
- [Table A-7, "WebLogic Portal Samples Facets"](#)

The Project Facets part of the Web Project Properties dialog allows you to add or remove facets. The WLP facets listed in this section are all referenced in this dialog, shown in [Figure A-2](#).

Figure A-2 Web Project Properties Dialog

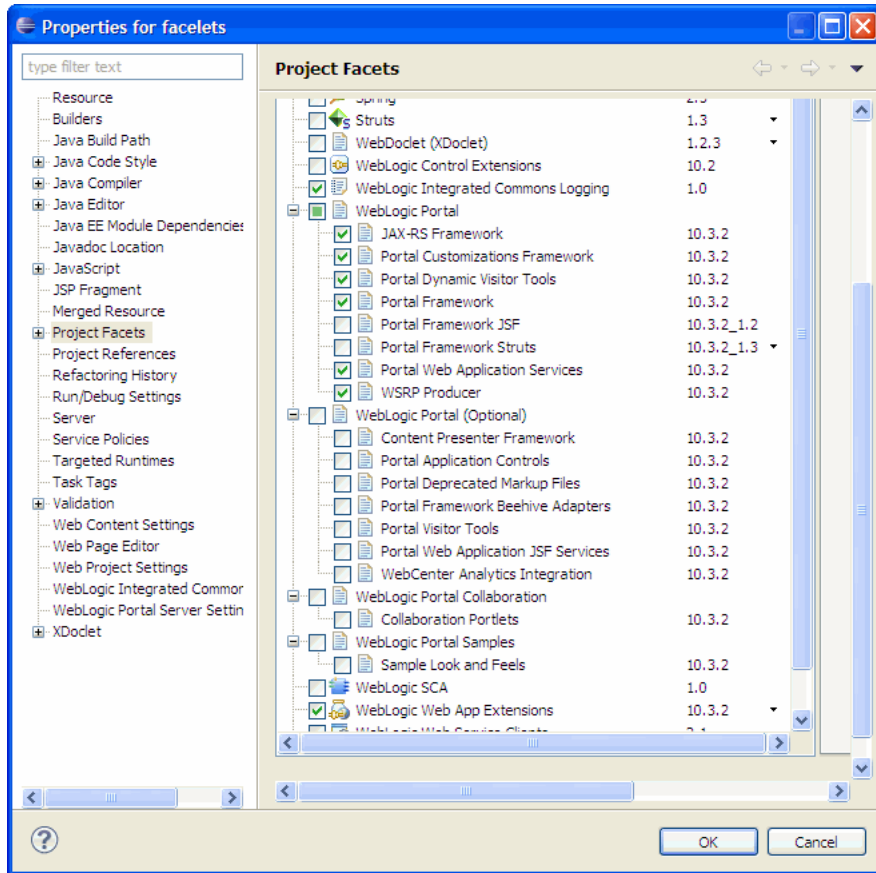


Table A-4 WebLogic Portal Facets

| Facet | Requires (Facets) | Libraries (Features) |
|---------------------------------|---|--|
| JAX-RS Framework | None. | jersey-web-lib <ul style="list-style-type: none"> JSR 311 JAX-RS implementation jaxrs-framework-web-lib <ul style="list-style-type: none"> JSR 311 extensions |
| Portal Customizations Framework | JAX-RS Framework; Portal Framework, WSRP Producer | p13n-core-web-lib, p13n-web-lib <ul style="list-style-type: none"> Tag libraries for Property Sets, User Management, and Behavior Tracking p13n-rest-web-lib <ul style="list-style-type: none"> Base REST frameworks wlp-framework-full-web-lib <ul style="list-style-type: none"> Application support for the full portal, Stream portals/portlets, User preferences wlp-framework-rest-web-lib <ul style="list-style-type: none"> REST commands for customizations framework |
| Portal Dynamic Visitor Tools | Portal Customizations Framework | wlp-tools-dvt-web-lib <ul style="list-style-type: none"> The Dynamic Visitor Tools |

Table A-4 (Cont.) WebLogic Portal Facets

| Facet | Requires (Facets) | Libraries (Features) |
|---------------------------------|--|---|
| Portal Framework | None. | jstl-1.2 <ul style="list-style-type: none"> ▪ JavaServer Pages Standard Tag Library wlp-framework-common-web-lib, wlp-light-web-lib <ul style="list-style-type: none"> ▪ Light, file-mode portal wlp-rest-web-lib, wlp-framework-rest-web-lib <ul style="list-style-type: none"> ▪ Framework REST commands wlp-lookandfeel-web-lib <ul style="list-style-type: none"> ▪ Look & Feel resources. Required unless you provide your own Look & Feel files. wlp-clipper-web-lib <ul style="list-style-type: none"> ▪ Clipper portlet functionality |
| Portal Framework JSF | Portal Framework; JSF 1.2 | wlp-jsf-portlet-bridge-2.0-web-lib <ul style="list-style-type: none"> ▪ JSR 329 JSF Java Portlet bridge |
| Portal Framework Struts | 1.3: Struts 1.3; Portal Framework or WSRP Producer 1.2, 1.1: Struts; Beehive NetUI; Portal Framework Beehive Adapters | wlp-framework-struts-[1.1 1.2 1.3]-web-lib <ul style="list-style-type: none"> ▪ Framework Struts adapter |
| Portal Web Application Services | JAX-RS Framework | p13n-core-web-lib, p13n-web-lib <ul style="list-style-type: none"> ▪ Tag libraries for Property Sets, User Management, and Behavior Tracking p13n-rest-web-lib, wlp-rest-web-lib <ul style="list-style-type: none"> ▪ Base REST framework content-management-web-lib <ul style="list-style-type: none"> ▪ Content Management tag libraries and servlets wlp-services-web-lib <ul style="list-style-type: none"> ▪ Tag libraries for Ads, Placeholders, Content Selectors, and Content Management |
| WSRP Producer | None. | jstl-1.2 <ul style="list-style-type: none"> ▪ JavaServer Pages Standard Tag Library wlp-framework-common-web-lib <ul style="list-style-type: none"> ▪ Simple WSRP producer functionality wlp-wsrp-producer-web-lib <ul style="list-style-type: none"> ▪ WSRP producer functionality |

Table A-5 WebLogic Portal (Optional) Facets

| Facet | Requires (Facets) | Libraries (Features) |
|--------------------------------|---|--|
| Content Presenter Framework | Portal Framework Beehive Adapters; Portal Visitor Tools | wlp-content-ui-framework-web-lib <ul style="list-style-type: none"> ▪ Content Presenter portlet |
| Portal Application Controls | Portal Application Controls | wlp-controls-app-lib <ul style="list-style-type: none"> ▪ P13N controls |
| Portal Deprecated Markup Files | Portal Framework | wlp-lookandfeel-deprecated-web-lib <ul style="list-style-type: none"> ▪ Deprecated look and feel markup files wlp-light-deprecated-web-lib <ul style="list-style-type: none"> ▪ Deprecated layout markup files |

Table A–5 (Cont.) WebLogic Portal (Optional) Facets

| Facet | Requires (Facets) | Libraries (Features) |
|---|---|--|
| Portal Framework Beehive Adapters | Beehive NetUI; Portal Framework or WSRP Producer | wlp-beehive-web-lib <ul style="list-style-type: none"> ▪ Framework Beehive NetUI Pageflow adapter |
| Portal Visitor Tools | Portal Customizations Framework; Portal Framework Beehive Adapters; Portal Web Application Services | wlp-commonui-web-lib, wlp-tools-framework-web-lib, wlp-tools-visitor-web-lib <ul style="list-style-type: none"> ▪ Visitor Tools |
| Portal Web Application JSF Services | JSF 1.2; Portal Web Application Services | content-management-faces-web-lib <ul style="list-style-type: none"> ▪ Content Management JSF components |
| Oracle WebCenter Portal's Analytics Integration | Portal Customizations Framework; Portal Web Application Services | wlp-analytics-web-lib <ul style="list-style-type: none"> ▪ Web application support to integrate with Oracle WebCenter Portal's Analytics |

Table A–6 WebLogic Portal Collaboration Facets

| Facet | Requires (Facets) | Libraries (Features) |
|------------------------|---|---|
| Collaboration Portlets | Portal Customizations Framework; Portal Framework Beehive Adapters; Portal Web Application Services | wlp-common-ui-web-lib, wlp-collab-portlets-web-lib <ul style="list-style-type: none"> ▪ Collaboration portlets |

Table A–7 WebLogic Portal Samples Facets

| Facet | Requires (Facets) | Libraries (Features) |
|-----------------------------|--------------------------|--|
| Sample Framework Components | Portal Framework | wlp-sample-widgets-web-lib <ul style="list-style-type: none"> ▪ Sample login portlet and shell |
| Sample Look and Feels | Portal Framework | wlp-sample-lookandfeel-web-lib <ul style="list-style-type: none"> ▪ Sample look and feel files |